



Periodising planning history in metropolitan regions

An historical-discursive institutionalist approach

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**ACSP 2022
Annual Conference**

This book includes the abstracts accepted for presentation at the 2022 Annual Conference. This book was completed and posted to www.acsp.org 06/14/22.

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Track 1 - Technology, Society and Analytical Methods

Track 1 Roundtables

SOCIAL MEDIA BOTS: FRIEND OR FOE OF URBAN PLANNING?

Abstract ID: 1103

Roundtable

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WEBB, Brian [Cardiff University] webbb1@cardiff.ac.uk, participant
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The rapid growth and massive uptake of social media has resulted in a surge in public interest and capacity to engage with others around key urban planning topics. Due to the low cost and high potential engagement, planners and policymakers have been quick to open electronic channels of participation to inform the decision-making process. In doing so, an opportunity for subversion from groups with alternate and possibly nefarious interests has been created. Some scholars have found that automated social media accounts have been used to further inflate the voice, and therefore influence, of subversive groups in the land development and planning process. While scholars have begun to examine how tech-savvy social media users are manipulating political discourse through the medium of Facebook and Twitter, little attention in the planning research community has considered the risks and potential benefits of these bots. This panel will debate the risks that social media manipulation and the use of bots and other forms of artificial intelligence to community engagement processes.

Planning scholars have looked to internet-enabled communities to foster better discussions and debates around community visioning and planning. Research has focused around ways that the political processes of shaping places can benefit from online community engagement and dialogue, extending the work of communicative planning scholars like Forrester (1999) and Innes and Booher (2000). While the movement of community planning processes onto online platforms has largely occurred as prophesized, the risks of such a move have largely overlooked the influence of social media manipulation, NIMBY movements and discourse around local real estate development and planning issues. In this panel, we will grapple with the costs and benefits of this bot-tainted social media engagement and chart a research agenda for planning scholars.

Citations

- Afzalan, N., & Evans-Cowley, J. (2015). Planning and social media: Facebook for planning at the neighbourhood scale. *Planning Practice & Research*, 30(3), 270-285.
- Hollander, Justin B., Ruth Potts, Maxwell Hartt, and Minyu Situ. (2020). The role of artificial intelligence in community planning. *International Journal of Community Well-Being* 3, no. 4: 507-521.
- Evans-Cowley, J. S., & Hollander, J. (2010). The new generation of public participation: Internet-based participation tools. *Planning Practice & Research*, 25(3), 397-408.
- Innes, J. E. (1995). Planning Theory's Emerging Paradigm: Communicative Action and Interactive Practice. *Journal of Planning Education and Research*, 14(3), 183-189. doi: 10.1177/0739456X9501400307
- Forester, John. 1999. *The deliberative practitioner: Encouraging participatory planning processes*. MIT Press.

Key Words: Social Media, Social Bots, Participatory Planning, Twitter, Artificial Intelligence

PLATFORM URBANISM: GROUNDING TECHNOLOGY IN PRACTICE TO UNDERSTAND ITS IMPACTS ON PLANNING PRACTICE

Abstract ID: 1122

Roundtable

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WACHSMUTH, David [McGill University] david.wachsmuth@mcgill.ca, participant

This roundtable gathers planning researchers whose study of platform urbanism (Barns, 2019) and the digital platform economy has resulted in case studies of platform uses in practice. There is significant and impactful scholarship about platform urbanism and its social, political and economic implications and impacts. There are opportunities for positive change in terms of new service provision, innovation, economic development and changes to urban pattern and form but we also see examples of legislative and jurisdictional friction, economic precarity, and changes to resident-city hall relationships (Brail, 2020; Donald et. al, 2021; Johnson et. al, 2020; Leszczynski, 2019; Robinson & Biggar, 2021; Sadowski, 2020; Srnicek, 2017; and Wachsmuth & Weiser, 2018). As planning researchers, we engage in research and practice which reveal the nuances of what happens when urban technology platforms are deployed in real places with real people.

This interactive roundtable will explore the following questions with the participants sharing their research findings about the use of short term accommodations, ride hailing and active transportation. The transactions enabled by digital platforms and the data they gather have had measurable impacts on housing availability, public and private transit services, and bicycle and pedestrian infrastructure in communities across North America.

- Urban platform providers contend that they produce positive change. What kinds of evidence, if any, has your research produced that verifies these claims? Do you see variation based on jurisdiction and or urban pattern/form?

- Platform firms often herald disruption as a positive outcome. What examples of disruption did you find in your research? Was it durable or episodic? Did the changes disproportionately benefit or harm particular community members? How did local governments respond?

- What are the implications of platform urbanism for planning research and practice?

- How ready are we as a profession and a community of researchers for an expansion of platform urbanism? In what ways should planning education, practice and research respond?

Throughout the roundtable audience members will also be invited to participate.

Citations

- Barns, S. (2019) "Platform Urbanism: Negotiating Platform Ecosystems in Connected Cities". Singapore, Palgrave Macmillan.
- Brail, S. (2020) World cities of ride-hailing, Urban Geography, DOI: 10.1080/02723638.2020.1775030
- Donald, B., Sage, M., and A. Moroz (2021) Taking Kingston for Regulatory Ride? Uber's Entrance into Kingston, Ontario. In Zwick, A. and Spicer, Z. (2021). "From the Platform Economy to The Smart City: Technology and the Transformation of Urban Policy and Governance". McGill-Queens University Press.
- Robinson, P., & Biggar, J. (2021) Seeing the City as a Platform: Is Canada's Smart Cities Challenge a Step in that Direction? In Zwick, A. and Spicer, Z. (2021). "From the Platform Economy to The Smart City: Technology and the Transformation of Urban Policy and Governance". McGill-Queens University Press.
- Wachsmuth D, Weisler A. Airbnb and the rent gap: Gentrification through the sharing economy. Environment and Planning A: Economy and Space. 2018;50(6):1147-1170. doi:10.1177/0308518X18778038

Key Words: platform urbanism, smart cities, governance

MEASURING EQUITY IN URBAN DEVELOPMENT

Abstract ID: 1154

Roundtable

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Local governments, community organizations, and other stakeholders involved in urban development have become increasingly interested in promoting equity in urban development. However, one major challenge common to many

equitable development initiatives is measurement. Emerging approaches that intend to promote equity and positive social impact using top-down methods of analysis have raised important questions of accountability and community involvement. For example, the U.S. Department of the Treasury's Opportunity Zone program has sought to draw private investment into marginalized communities. However, opportunity zone investments are made with little regulation or measurement for how investments would or should benefit local communities. The result, according to a report by the Urban Institute, was that most opportunity zone investments benefitted large real estate projects with questionable impacts on local businesses and residents (Theodos, González-Hermoso, and Meixell 2020). In the real estate sector, the emergence of self-reported environmental, social, and governance (ESG) reporting is a promising trend for companies to disclose their societal values to socially- and environmentally-conscious investors, but leaves much room for improvement. Hence, although limited, research on equitable approaches to real estate development has emerged (Urban Land Institute 2020), complimenting and extending equitable development guidelines targeting the public sector (Eley 2017; HUD 2016).

Developing a metric to understand equity in urban development is not new, but previous attempts struggle to collect the right data, quantify the results to make them transparent to their users allowing them to ground truth them and opening that data up for anyone to use through visualization or the provision of raw data. It is essential that planets create ways that this might be done through news tools, but the tools are not all with need, we need systems in place that begin the dialog these tools provide and accountability structures that hold real estate developers accountable for any social impact metrics they create over time. It's not only tools that help us create action with data but it is the teams who use the tools and disseminate the results which will give a metric in Real Estate Development Impact.

Yet, deciding what to measure is difficult given a diversity of stakeholder interests, variation in local government capacity to carry out policy, and the costs associated with monitoring—not to mention the added complexity given the uneven legacy of urban development. Evaluating the impact, benefits, and burdens experienced by a community can also be contentious as using such methods can lead to a disproportionate investment towards what is or can be measured at the expense of what is not or cannot be measured. Deciding how to measure is just as important as defining what should be measured—suggesting community involvement and the inclusion of qualitative criteria in addition to quantitative metrics. The promise and prospects for measuring equity in urban development certainly merit further discussion: How should such approaches to equitable development, including involvement of or leadership by the real estate sector, ensure accountability and transparency? How might we ensure that long-term costs and public access to data are manageable? How do we define the 'community' for which equity is made a priority? Finally, how might we go about implementing an alternative approach to top-down initiatives?

Citations

- Eley, Carlton C. "Planning for Equitable Development: Social Equity by Design," American Planning Association (APA) 2017.
- PERE and PolicyLink. "National Equity Atlas." Website, 2016. <https://nationalequityatlas.org/>.
- Theodos, Brett, Jorge González-Hermoso, and Brady Meixell. "The Opportunity Zone Incentive Isn't Living Up to Its Equitable Development Goals. Here Are Four Ways to Improve It." Urban Institute, June 17, 2020.
- HUD. "Ensuring Equitable Neighborhood Change: Gentrification Pressures on Housing Affordability." U.S. Department of Housing and Urban Development, 2016.
- Urban Land Institute. "Health and Social Equity in Real Estate: Examples from the Field." ULI, 2020.

Key Words: Equitable Development, Community Participation, Data Measurement, Social Impact, Real Estate

PLANNING FOR DIGITALLY-ENABLED CITIES AND INFRASTRUCTURES

Abstract ID: 1435
Roundtable

LASSITER, Allison [University of Pennsylvania] alass@design.upenn.edu, organizer, moderator
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GREEN, Jamaal [University of Pennsylvania] jamaalg@upenn.edu, participant
RIGGS, William [University of San Francisco] william.riggs@usfca.edu, participant
WILLIAMS, Sarah [Massachusetts Institute of Technology] sew@mit.edu, participant
WILSON, Bev [University of Virginia] bw6xs@virginia.edu, participant

As digital technologies proliferate in the city, many planning curricula have responded with expanded course offerings in spatial data analysis and advanced analytics. Engaging with digital technologies could be interpreted more broadly than data, however. An example from practice is New York City's Internet Master Plan (Mayor's Office of the Chief Technology Officer, 2020), a sociotechnical document that includes subjects like the social consequences of the digital divide, coordination with private property owners, and developing public-private partnerships. The plan is complemented with adjacent programming, such as delivering connected devices to elderly residents and upgrading

Wi-Fi at community learning centers. Other cities, like Austin and Seattle, are similarly creating plans to define and facilitate working toward digital equity. Planners are taking many other approaches toward civic technology, too, such as: planning for smart grids and microgrids to enable rapid integration of decentralized energy sources; developing smart mobility and micromobility to improve last-mile service; deploying civic technologies that build community cohesion.

A substantial challenge to creating these digitally-enabled futures, however, is uptake and implementation by city governments. There is a persistent gap between those who develop and sell new civic tech and the needs and motivations of the people in government seeking to address different urban problems. David and McNutt (2019) discuss the gap between technology creation and implementation, suggesting that it can be bridged by urban planners. They write that new technologies will be invented by scientists and engineers, but the deployment of and access to these technologies will require plans to be written and implemented: "...we will require a group of people who have the skills that are needed to create this exciting future...We wonder if this group of professionals really exists and, if not, what we need to do to train them." (David and McNutt, 2019, 1). Already, planners are being called upon to guide implementation of new, federal broadband rules under the National Telecommunications and Information Administration (Pasi, 2022) and it is possible planners could continue to expand their role in facilitating the uptake and implementation of civic tech.

In this roundtable, we discuss how planners are teaching civic technology, beyond data analytics. We discuss how concepts that support digitally-enabled cities are being brought into existing courses, how we interact with other disciplines (e.g., computer science, electrical and systems engineering), and the development of new coursework. We ask if there are opportunities for planning curricula to narrow gaps between technology development, private interests, and the needs of city governments. In addition, we discuss the potential utility and boundaries of a new "technology planning" specialization and how this would differ from more established specializations. While JPER editors (Andrews et al., 2020) previously noted that planners have not yet participated in much of the broader discourse around smart cities, Brinkley and Hoch (2021) suggest that continued innovation and diversity of specializations is essential to the discipline's ongoing resilience.

This is the second in a proposed two-part roundtable on technology, planning, and data science. The first is organized by Prof. Adam Millard-Ball.

Citations

- Andrews CJ, Smart M, Lowrie K and Tsoulou I (2020) Boundaries of Planning Scholarship. *Journal of Planning Education Research*.
- Brinkley C and Hoch C (2021) The ebb and flow of planning specializations. *Journal of Planning Education and Research* 41(1): 79-93.
- David N and McNutt J (2019) Building a Workforce for Smart City Governance: Challenges and Opportunities for the Planning and Administrative Professions. *Informatics* 6(4):47.
- Mayor's Office of the Chief Technology Officer (2020) The New York City Internet Master Plan. NY: City of New York. Available at: https://www1.nyc.gov/assets/cto/downloads/internet-master-plan/NYC_IMP_1.7.20_FINAL-2.pdf
- Pasi E (2022) Planners' input on broadband sought by Biden administration. *American Planning Association*. Available at: <https://www.planning.org/blog/9231380/planners-input-on-broadband-sought-by-biden-administration/>

Key Words: smart cities, urban science, civic technology, pedagogy

ROUNDTABLE DISCUSSION: URBAN DATA SCIENCE IN PLANNING

Abstract ID: 1779

Roundtable

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SANCHEZ, Thomas [Virginia Polytechnic Institute and State University] sanchez@vt.edu, participant
LI, Wei [Texas A&M University] wli@tamu.edu, participant

Urban communities in the 21st Century have increasingly transitioned into complex systems and systems-of-systems, consisting of many dynamically interdependent human, environmental, and technical systems. Simultaneously, advances in Information Communication Technology have been accompanied by social innovations, which continues to drive the techno-centric versus human-centric debates. Rapid growth in urbanization and intensive urban-rural interaction enables massive flows of virtual and physical elements. At the same time, an increasing number of extreme weather-driven urban hazards are a significant source of biodiversity loss, social disruption, and economic disparity, threatening the United Nations' 17 Sustainable Development Goals. This is an opportune time to explore how Urban Data Science should function and thrive in the context of planning, and vice versa, through a roundtable

discussion of planning researchers.

Citations

- Ye, X. & Niyogi, D. (2022) Resilience of human settlements to climate change needs the convergence of urban planning and urban climate science. *Computational Urban Science*. DOI: 10.1007/s43762-022-00035-0
- Ye, X., Wu, L., Lemke, M., Valera, P., & Sackey, J. (2022) Defining computational urban science. In *New Thinking about GIS*. Higher Education Press and Springer. (in press)
- Ye, X., Li, W., & Huang, Q. (2018) A synthesized urban science in the context of big data and cyberinfrastructure. In *Big Data Support of Urban Planning and Management*, pp. 435-448. Cham: Springer.
- Ye, X., & He, C. (2016) The new data landscape for regional and urban analysis. *GeoJournal*. DOI: 10.1007/s10708-016-9737-8

Key Words: urban data science, geospatial artificial intelligence, urban analytics, big data, network science

Track 1 Individual Paper Submissions

FORECASTING XIONG'AN NEW AREA 2035: A SCENARIO MODELING APPROACH

Abstract ID: 1012

Individual Paper Submission

XU, Boqian [University of Pennsylvania] boqianx@gmail.com, presenting author

In 2017, China's central government announced the plan of building Xiong'an as the 19th National New Area to relocate nonessential industries out of the over-occupied Beijing center city. This new town designation brought uncertainties to the 1770km² land and the vulnerable ecosystem around Baiyangdian, the largest inland lake in North China and the center of Xiong'an's political boundary. While the local planning institute released an ambitious environmental plan in 2018, scholars and practitioners expressed concerns about the potential drastic land cover changes and the conventional spatial planning approach's competency in balancing urban development and ecological preservation. What would/should Xiong'an's land cover change? And how could planners improve the conventional linear spatial planning workflow to further incorporate ecological thinking and preserve Xiong'an's vulnerable ecosystem? This exploratory and methodological research forecasts Xiong'an land cover with multiple land change models and proposes a scenario modeling approach to enhance the current spatial planning method. It delineates four potential scenarios in 2035: business-as-usual (reduced-form model), last-gen (reduced-form model), 2018-plan (empirical model), and next-gen (rule-based model). Results show that urban land would substantially increase if Xiong'an follows the development paths of either itself in the 2000s or the other new town precedents. Though the existing comprehensive plan exhibits an idealistic future land cover pattern, minimizing ecological footprint based on spatial rules is a more pragmatic scenario to protect the ecosystem. Furthermore, this research introduces a workflow revision by incorporating predictive and prescriptive scenario models into the conventional linear workflow. It recommends that designers engage with land change modeling techniques to produce scenarios as reference maps to draft spatial plans. It extends the academic discourse about Xiong'an's potential impact on the ecosystem by simulating its growth pattern with land change models. Moreover, the proposed scenario modeling approach can contribute to spatial planning practices beyond Xiong'an and China's new towns if practitioners advance workflow and skillsets responding to the global ecological preservation agenda.

Citations

- Avin, U., & Goodspeed, R. (2020). Using exploratory scenarios in planning practice: A spectrum of approaches. *Journal of the American Planning Association*, 86(4), 403-416.
- Chakraborty, A., & McMillan, A. (2015). Scenario planning for urban planners: Toward a practitioner's guide. *Journal of the American Planning Association*, 81(1), 18-29.
- Kim, Y., Newman, G., & Güneralp, B. (2020). A review of driving factors, scenarios, and topics in urban land change models. *Land*, 9(8), 246.

- Verburg, P. H., Alexander, P., Evans, T., Magliocca, N. R., Malek, Z., Rounsevell, M. D., & van Vliet, J. (2019). Beyond land cover change: towards a new generation of land use models. *Current Opinion in Environmental Sustainability*, 38, 77-85.

Key Words: scenario planning, land change modeling, spatial planning, planning methodology, Xiong'an New Area

USING NATURAL LANGUAGE PROCESSING TO READ PLANS: A CASE STUDY OF THE 100 RESILIENT CITIES NETWORK

Abstract ID: 1014

Individual Paper Submission

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Planners need to read plans to learn and adapt current practice (Ryan, 2011). planners may struggle to find time to read and study lengthy planning documents, especially in emerging areas such as climate change and urban resilience. Recently, natural language processing (NLP) has shown promise in processing big textual data (Brinkley and Stahmer, 2021; Han et al., 2021). We asked whether planners could use NLP techniques to more efficiently extract useful and reliable information from planning documents. To answer this question, we first used topic modeling, which is an NLP technique, to analyze 78 resilience plans from the 100 Resilient Cities Network, and compared the results with those from the traditional content analysis method in order to examine how well topic modeling performs. We found that results generated from topic modeling coincided to a large extent (80%) with those from the conventional content analysis approach. Topic modeling was generally effective and efficient in extracting the main information of plans, whereas the content analysis approach could find more in-depth details but at the expense of considerable time and effort. We further propose a transferrable model for cutting-edge planners to more efficiently read and study a large collection of plans using machine learning. In summary, NLP represents a valuable addition to the planner's toolbox. Topic modeling coupled with other NLP techniques can help planners to effectively discover key topics in plans, identify planning priorities and plans of specific emphasis, and find relevant policies.

Citations

- Brinkley, C., & Stahmer, C. (2021). What is in a plan? using natural language processing to read 461 California city general plans. *Journal of Planning Education and Research*, 0739456X21995890.
- Han, A. T., Laurian, L., & Dewald, J. (2021). Plans Versus Political Priorities: Lessons from Municipal Election Candidates' Social Media Communications. *Journal of the American Planning Association*, 87(2), 211-227.
- Ryan, B. D. (2011). Reading through a plan: A visual interpretation of what plans mean and how they innovate. *Journal of the American Planning Association*, 77(4), 309-327.

Key Words: Plan Reading, Natural Language Processing, Urban Resilience

MOVING FROM PANDEMIC ADAPTATION TO A MAINSTREAM METHOD: LESSONS FROM AN EXPERIMENT IN REMOTE PHOTOVOICE IN ONE SETTLEMENT IN ACCRA, GHANA

Abstract ID: 1035

Individual Paper Submission

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The COVID-19 pandemic disrupted lives and research. For our research question, "how does participants' relationship with the state define their lived experience of informality?", participant observation was the ideal methodological fit. However, this was rendered impossible during the pandemic, and we had to adapt from in-person to a remote method. This paper discusses our experience adapting from participant observation to remote photovoice over the last eighteen months in Ga-Mashie, Accra, Ghana, making the case for adding this to the researchers' and practitioners' toolbox post-pandemic.

Our adaptation needed to consider a remote mode, long-term participant engagement, and an exploratory research question. The pandemic forced us to maintain physical distance, which we bridged with smartphones. Travel restrictions did not allow pre-scheduled travel or neatly defined timelines. Other non-pandemic limitations still held: Our research participants are women in communities traditionally distrustful of researchers, often technologically disempowered, and whose participation meant time away from their livelihoods. These limitations and requirements called for adapting the traditional photovoice process to consider limitations of distance, fluid timelines, building

trust, and empowering participants technologically while working around their routines. All this needed to be done while getting us as close as possible to the data that participant observation could generate.

While photovoice has long been used in public health research, its adaptation to planning has been relatively limited and recent. Methodologically, photovoice empowers the marginalised, both, in society and in research. As such, it is also suited to planning's endeavour towards community, equity, and empowerment. Traditionally, photovoice researchers solicit participants, train them to use cameras, and engage them over sessions to take photographs. Based on the research question and context, participants then reflect on selected photographs. Researchers schedule reflection sessions quickly after participants take the pictures to facilitate recall. Reflections are usually tailored around the SHOWeD method asking participants to reflect on what they see, relating it to their lives and the research question.

We adapted our methodology in two ways. First, we looked to photovoice to compensate for the loss of in-person participant observation. Second, we adapted photovoice from an in-person to a remote method, using smartphones for both photography and communication. Our adaptation uses what we call a staccato engagement i.e., curating a long-term dialogue with short bursts of engagement. This was particularly useful when engaging participants who work informally with fluid schedules and varying comfort levels with technology. We worked around their schedules, recording life and its pandemic interruptions. We dynamically co-developed this process with participants who used their phone's voice recorder to reflect as they took photographs, providing us with rich real-time qualitative observations. This was particularly useful because we could not convene reflection interviews immediately after participants took photographs, as in traditional photovoice.

We see the usefulness of this method to planners looking to engage marginalised voices, particularly in the global south. By its very nature, photovoice allows insurgent voices to emerge in the research process. Community engagement is often solicited through focused group discussions requiring skilled facilitators to ensure all representation in the discussions. This is not a guarantee, and planners find it difficult to give voice to the marginalised. One critical advantage was the privileging of the participants' perspective rather than just the researcher's through remote photovoice. Additionally, this adaptation allowed for a staccato engagement with participants, particularly where people don't have regular working hours. Our experience holds that remote photovoice specifically allows researchers and planners to target both, marginalized communities, and the marginalized voices within those communities. Thus, it is uniquely placed to be a methodology for equity and advocacy planning.

Citations

- Harris, John C. 2018. 'Vulnerable Youth's Perspectives and Priorities for Informal Settlements: Photovoice Evidence from Lusaka, Zambia'. *Journal of Planning Education and Research* 38 (4): 398–412. <https://doi.org/10.1177/0739456X17709914>.
- Cai, Yanjun. 2020. 'Visualizing Vulnerability for Inclusive Community Resilience: Photovoice Evidence from the Philippines'. *Journal of Planning Education and Research*, August, 0739456X20949644. <https://doi.org/10.1177/0739456X20949644>.
- Evans-Agnew, Robin A., and Marie-Anne S. Rosenberg. 2016. 'Questioning Photovoice Research: Whose Voice?' *Qualitative Health Research* 26 (8): 1019–30. <https://doi.org/10.1177/1049732315624223>.
- Wang, Caroline C. 1999. 'Photovoice: A Participatory Action Research Strategy Applied to Women's Health'. *Journal of Women's Health* 8 (2): 185–92. <https://doi.org/10.1089/jwh.1999.8.185>.
- Zapata, Marisa A. 2021. 'Planning Just Futures: An Introduction'. *Planning Theory & Practice*. <https://doi.org/10.1080/14649357.2021.1956815>.

Key Words: remote methodology, photovoice, participant observation, empowerment, marginalized voices

WHERE DO PEOPLE MEET? TIME-SERIES CLUSTERING FOR SOCIAL INTERACTION LEVELS IN DAILY-LIFE SPACES DURING THE COVID-19 PANDEMIC

Abstract ID: 1065

Individual Paper Submission

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The persistence of spatial segregation with respect to income and race is well documented. However, assessment of spatial segregation in daily activities is challenging due to the limited availability of human movement data. With the ubiquitous availability of mobile phones and location-based service applications, human movement data has become widely available. It is now possible to explore spatial interactions and assess the extent of social segregation in daily activity spaces. Using Los Angeles County as our case study, we perform a temporal analysis by conducting K-means time-series clustering using mobile phone data to examine social interaction levels among various sociodemographic

groups during the COVID-19 pandemic. Selected sociodemographic variables are assessed among the identified time-series clusters. We find a strong association between sociodemographic characteristics and social interaction levels, potentially leading to disparate exposures to the risk from COVID-19. Socially disadvantaged populations tend to be more segregated from other groups in daily activities, and the COVID-19 pandemic increased the disparity. Low-income and ethnic minority populations became more isolated from whites and the more economically affluent during the COVID-19 pandemic. Policies that aim to encourage social interactions and mitigate segregation effectively should further consider people's sociodemographic variables and relevant neighborhood characteristics.

Citations

- Ellis, M., Wright, R., & Parks, V. (2004). Work together, live apart? Geographies of racial and ethnic segregation at home and at work. *Annals of the Association of American Geographers*, 94(3), 620–637. <https://doi.org/10.1111/j.1467-8306.2004.00417.x>
- Hu, L., Moayyed, H., & Frank, N. (2020). Racial/ethnic and class segregation at workplace and residence: A Los Angeles case study. *Journal of Urban Affairs*, 00(00), 1–19. <https://doi.org/10.1080/07352166.2020.1782224>
- Huang, X., Li, Z., Lu, J., Wang, S., Wei, H., Chen, B., & Bloustein, E. J. (2020). Time-series clustering for home dwell time during COVID-19: what can we learn from it? *MedRxiv*, 2020.09.27.20202671. <https://doi.org/10.1101/2020.09.27.20202671>
- Wong, D. W. S., & Shaw, S. L. (2011). Measuring segregation: An activity space approach. *Journal of Geographical Systems*, 13(2), 127–145. <https://doi.org/10.1007/s10109-010-0112-x>

Key Words: Segregation, social interaction, time-series clustering, sociodemographics, COVID-19

SUPPORTING SHRINKAGE: APPLYING COMMUNITY-BASED OPERATIONS RESEARCH IN U.S. CITIES

Abstract ID: 1102

Individual Paper Submission

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Many older cities confront the problem of long-term declines in population and economic activity in certain neighborhoods which have resulted in blighted conditions that make conventional revitalization initiatives based on increased residential and commercial development unlikely to succeed. Planning scholars have developed a theory of smart shrinkage in which emphasis is placed on non-residential land uses that can maintain and improve quality of life while positioning some land for future growth-oriented activities. Smart shrinkage research and practice involves application of methods from information technology and decision science to identify vacant and abandoned parcels for acquisition and redevelopment for alternative uses in such a way as to meet multiple social and economic goals while respecting myriad resource constraints. This presentation addresses the following questions: How do planning practitioners conceptualize the problem of smart shrinkage? In what ways do the decision processes they apply in practice diverge from the theory of decision modeling? How can planners make most appropriate use of information and decision sciences to develop sustainable and politically-feasible strategies for smart decline?

In this presentation, we will describe a new approach to citizen-engaged, community-focused planning methods and technologies for cities and regions facing decline, disinvestment, shrinkage, and social and physical distress. The presentation will discuss our research into the benefits and costs of a wide range of analytic approaches for designing policy and planning interventions for shrinking cities and distressed communities. These include collaborative planning, social media, civic technology, game design, analytics, decision modeling and decision support, and spatial analysis. We will present case studies of three US cities addressing shrinkage and decline, with a focus on issues of social justice, democratization of knowledge, and local empowerment.

We employed a rigorous case study methodology to examine three cities: Fall River (MA), Baltimore (MD), and Flint (MI). We drew on Yin (2018) where we employed multiple research methodologies to achieve triangulation around key concepts and ideas: interviews with at least two officials in each city, review of the extant literature on each city, and review of contemporary policy/planning issues and initiatives in newspapers and policy reports.

Our findings suggest a planning approach that puts community engagement and empowerment at the center, combined with data and technology innovations. We argue that decisions informed by qualitative and quantitative data and analytic methods, implemented through accessible and affordable technologies, and based on notions of human dignity, local impact and social justice, can enable residents to play a leading role in the positive transformation of shrinking cities and distressed communities. We reflect on the applicability of our US-focused

research program to other locales facing shrinking cities and economic decline.

Citations

- Johnson, M.P., Hollander, J.B. and A. Hallulli. 2013. Maintain, Demolish, Re-purpose: Policy Design for Vacant Land Management using Decision Models. *Cities: Special Issue: Vacant Land: The New Urban Green* 40:151 – 162. doi: 10.1016/j.cities.2013.05.005.
- Hartt, Maxwell. "The elasticity of shrinking cities: An analysis of indicators." *The Professional Geographer* 73, no. 2 (2021): 230-239.
- Yin, Li, Hao Zhang, Kelly Patterson, Robert Silverman, and Liang Wu. "Walkability, safety, and housing values in shrinking cities: Spatial hedonic study in Buffalo, Pittsburgh, and Detroit." *Journal of Urban Planning and Development* 146, no. 3 (2020): 04020029.
- Johnson, M.P. (Ed.) 2012. *Community-Based Operations Research: Decision Modeling for Local Impact and Diverse Populations*. New York: Springer. ISBN: 978-1-4614-0805-5.

Key Words: Shrinking cities, Decision modeling, Geographic information systems, Vacant lots

A NOVEL WALKABILITY INDEX USING GOOGLE STREET VIEW AND DEEP LEARNING

Abstract ID: 1146

Individual Paper Submission

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Walkability indices, which comprise walking-related neighborhood environmental features, are widely used in numerous empirical studies and practical fields. However, a few researchers have pointed out its validation that partially reflects perceived walkability. Several studies have contended that lacking design-related features, which are mainly a micro-scale element, is the primary culprit in this issue. Although the important role of micro-level features in walking behavior has been theoretically established, verification of their significance in perceived walkability is scarce due to the absence of available data sources and methodologies. To fill this gap, we develop a new walkability index using Google Street View and semantic segmentation. The index captures micro-level features based on the Urban Design Qualities protocol. This study investigates the limitations of the conventional walkability indices by focusing on the lack of micro-level features. The outperformance validation tests confirm that the new index is superior to the conventional walkability indices in terms of reflecting perceived walkability. Overall, the new index provides urban planners and analysts with an improved metric to capture micro- and macro-level built environmental features for planning research and practice. This research indicates the need for new walkability indices that include micro-level features to clarify the influence of walkability on various urban outcomes.

Citations

- Cervero, R., Sarmiento, O. L., Jacoby, E., Gomez, L. F., & Neiman, A. (2009). Influences of built environments on walking and cycling: Lessons from Bogotá. *International Journal of Sustainable Transportation*, 3(4), 203-226.
- Ewing, R., & Handy, S. (2009). Measuring the unmeasurable: Urban design qualities related to walkability. *Journal of Urban Design*, 14(1), 65-84.
- Koohsari, M. J., Badland, H., Sugiyama, T., Mavoa, S., Christian, H., & Giles-Corti, B. (2015). Mismatch between perceived and objectively measured land use mix and street connectivity: Associations with neighborhood walking. *Journal of Urban Health*, 92(2), 242-252.
- Li, X., Zhang, C., Li, W., Ricard, R., Meng, Q., & Zhang, W. (2015). Assessing street-level urban greenery using Google Street View and a modified green view index. *Urban Forestry & Urban Greening*, 14(3), 675-685.
- Nagata, S., Nakaya, T., Hanibuchi, T., Amagasa, S., Kikuchi, H., & Inoue, S. (2020). Objective scoring of streetscape walkability related to leisure walking: Statistical modeling approach with semantic segmentation of Google Street View images. *Health & Place*, 66, 102428.

Key Words: Walkability Index, Perceived Walkability, Micro-scale Environmental Features, Google Street View, Deep Learning

SMART CITIES IN THE LONG TWENTY-FIRST CENTURY

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This paper builds on Arrighi's analysis of systemic cycles of accumulation to position smart cities within the emerging cycle. He originally posited that the evolution of the world capitalist system on an ever wider geographical base has passed through four systemic cycles of accumulation in which capitalist and territorialist actors organized and reorganized themselves to overcome the limitations of the previous cycle. While capitalists employ territory only to the extent that it increases capital accumulation, territorialists employ capital only as a means to expanding territory. He also demonstrates that historic phases of world capitalism have alternated through extensive phases in which the territory encompassed by the system was expanded and intensive phases in which the system became deeper and more intricately structured.

Drawing on Zuboff (2020), this paper claims that the emerging systemic cycle of accumulation centers on surveillance capitalism, a strategy of capital accumulation that relies on maximal extraction of behavioral surplus to generate and exploit predictive behavior and typified by the large internet platform firms (e.g., Meta and Alphabet). The paper first argues that these firms have built on the transnational strategies of the US-led phase of accumulation to supersede the US regime through a new fusion of the territorial and capitalist logics of power. As firms, these platforms clearly embody the capitalist logic of power in which territory serves simply to expand profits. In keeping with Arrighi's implication that the new systemic cycle of accumulation will be extensive, the firms of surveillance capitalism strive to expand their access to new territory on the global scale to maximize behavioral surplus and thus capital accumulation: our inner lives and behaviors. They defend this new territory with their own cyber and physical security. To the extent that the old form of territory remains relevant, the platform firms adopt the practices of the earliest world capitalists, the Genoese, by partnering with a large territorial state (chiefly the US and China) for war-making. However, the territorial logic of power is also embodied in these firms, as they employ their capital with the goal of expanding their territory and capturing more behavioral surplus.

The paper's second argument is that the platform firms' territorial expansion is taking increasing physical form, specifically urban form. The insistent drive to capture ever more behavioral surplus has induced platform firms to continuously encroach upon and stitch together our physical spaces by collecting data from cell phone sensors, virtual reality goggles, and smart TV scans of our living spaces, by building spatial and behavioral maps with home security systems, and ultimately by constructing smart cities designed to capture our every move and gesture. Smart cities are a territorial gold mine for surveillance capitalists, as their systems of management allow for both the extraction of behavioral surplus and the management of consumer behavior. As this nearly closes the loop between information and control, smart cities internalize governance or state-making costs, enabling platform firms to supersede the US cycle of accumulation.

Citations

- Arrighi, Giovanni. 1994. *The Long Twentieth Century: Money, Power, and the Origins of Our Times*. New York: Verso.
- Greenfield, Adam. 2013. *Against the Smart City*. New York: Do projects.
- Marvin, Simon, Andrés Luque-Ayala, and Colin McFarlane, eds. 2016. "Smart Urbanism: Utopian Vision or False Dawn." London New York: Routledge, Taylor & Francis Group.
- Vanolo, Alberto. 2013-07. "Smartmentality: The Smart City as Disciplinary Strategy." *Urban Studies* 51 (2013-07): 883–898. <https://doi.org/10.1177/0042098013494427>.
- Zuboff, Shoshana. 2020-03-03. *The Age of Surveillance Capitalism*. Hachette Book Group USA.

Key Words: smart cities, surveillance capitalism, systemic cycles of accumulation, capitalist logic of power, territorialist logic of power

INFORMATION PROPAGATION ON CYBER, RELATIONAL AND PHYSICAL SPACES ABOUT COVID-19 VACCINES: USING SOCIAL MEDIA AND SPATIAL FRAMEWORK

Abstract ID: 1160
Individual Paper Submission

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The advent of social media has extended human communication and interactions from a pure physical space to that of a relational and cyber context. This shift has been further intensified by the Covid-19 pandemic. During the early stages of the pandemic, while preventative measures such as social distancing and lockdowns reduced physical

activities and contacts, they also increased people's use of social media to obtain health information and to communicate with their family and friends while being physically apart.

Despite the benefits of social media including its ability to efficiently reach a large population during a crisis, there are considerable public health concerns raised by the spread of online anti-vaccine messaging (Puri et al., 2020). Studies have found polarized vaccination debates on social media (Yuan et al., 2019), suggesting the lack of interactions between pro and anti-vaccine users. Such polarization has the potential to strengthen the ideological isolation of anti-vaccine users, fuel vaccine hesitancy and lead to a dramatic increase in disease outbreak probabilities. However, it is unclear whether such polarization applies to the Covid-19 vaccines debates on social media.

Coinciding with the lack of studies on Covid-19 vaccines polarization is that of studies on how information and different opinions (i.e., pro and anti-vaccine) were propagated across spaces. While researchers have found connections between local events and the messages trending on social media (Gunaratne et al., 2019). However, few studies investigated how local information or opinions were propagated from offline to online, from physical to cyber.

To fill the gaps mentioned above, our study employed the recently proposed “space-place (splatial)” framework to investigate the Covid-19 vaccines debates on social media (Shaw & Sui, 2020). The novelty of this splatial framework lies in the fact that it provides a new way to capture and analyze human interactions across multiple spaces. In addition to the cyber and physical spaces, this splatial framework adds the concept of relational space that infers networks between objects based on their relations and has the potential to bridge the cyber and physical gap (Croitoru et al., 2015). Using New York State (NYS) as a case study, we employed several analytical approaches. We collected tweets related to Covid-19 vaccines from December 2020 to August 2021 to represent the cyber, relational, and physical spaces. Support vector machine was used to perform sentiment analysis of tweets. Louvain algorithm was applied for detecting communities in tweet-reply networks. Geosocial networks were constructed to analyze the hybrid space systems, i.e., the cyber-relational and the relational-physical systems.

Our findings are interesting in the sense that we did not observe the phenomenon of polarization which is common in vaccination debates. In the Covid-19 vaccines discourse, pro-vaccine users dominated the discussion in large communities while anti-vaccine users are fragmented in these communities. Our results also provide a nuanced view of the information propagation mechanism across physical, relational, and cyber spaces. Large communities on social media consisted of users from all three spaces and had a group of users whose locations were anchored in a particular region in NYS, such as New York City, Western New York, or Western Finger Lakes. This suggests that some users were bounded by physical boundaries while participating in the online vaccination debates. We also observed the intense interactions between the physical-relational and relational-cyber spaces indicating the role of relational space in propagating information between cyber and physical spaces. As an early attempt to apply the splatial framework for studying a real-world event (i.e., the vaccination debate), our approaches can be applied to studying human dynamics across a hybrid of spaces.

Citations

- Croitoru, A., Wayant, N., Crooks, A., Radzikowski, J., & Stefanidis, A. (2015). Linking cyber and physical spaces through community detection and clustering in social media feeds. *Computers, Environment and Urban Systems*, 53, 47–64
- Gunaratne, K., Coomes, E. A., & Haghighian, H. (2019). Temporal trends in anti-vaccine discourse on Twitter. *Vaccine*, 37(35), 4867–4871
- Puri, N., Coomes, E. A., Haghighian, H., & Gunaratne, K. (2020). Social media and vaccine hesitancy: New updates for the era of COVID-19 and globalized infectious diseases. *Human Vaccines & Immunotherapeutics*, 16(11), 2586–2593
- Shaw, S.-L., & Sui, D. (2020). Understanding the New Human Dynamics in Smart Spaces and Places: Toward a Splatial Framework. *Annals of the American Association of Geographers*, 110(2), 339–348
- Yuan, X., Schuchard, R. J., & Crooks, A. T. (2019). Examining emergent communities and social bots within the polarized online vaccination debate in Twitter. *Social Media+ Society*, 5(3)

Key Words: Covid-19, Vaccination, Social Media, Social Network Analysis, Urban Informatics

EXAMINING THE IMPACTS OF LAND USE ON AIR QUALITY IN CHICAGO: APPLICATION OF STREET VIEW IMAGERY AND HYPERLOCAL URBAN CLIMATE SENSING

Abstract ID: 1191

Individual Paper Submission

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Poor air quality is an environmental hazard susceptible to climate change. If the future climate becomes more stagnant with higher water evaporation and ozone background decrease, it weakens the circulation (Jacob and Winner, 2009). With the rising threat of climate change, the risk of health burdens pertinent to air pollution is augmenting. Air pollution imposes significant adverse health effects, including respiratory, cardiovascular diseases, and cancer. Cities worldwide began installing hyperlocal urban climate sensors to monitor air quality concurrently and combat the crisis. Taking the city of Chicago, USA, as a case, this study explored the recently deployed Project Eclipse sensors led by Microsoft research teams. The device follows EPA's air quality standards and reads the hyperlocal air quality index.

Using Project Eclipse's hyperlocal urban climate sensing data, we reviewed the air quality status in Chicago in August 2021. Then, this study measured the land use impacts on air quality. The conventional way of extracting land use features used land use cover maps or LandSat satellite images (Heald and Spracklen, 2015). We introduced the application of street view imagery for land use feature extraction. Unlike land use inventory maps or satellite images with static two-dimensions, street view images provide urban landscape information in multi diagonal directions. It subdivides the land use information into more detailed categories, such as office buildings, gas stations, campuses, and bus stations, by looking in more than one direction (Zhou et al., 2018). The use of street view images can offer more detailed landscape information. However, computation studies with conventional land use factors and applying them to examine the land use effects on air quality remains unexplored.

This research provided framework for using street view imagery and urban climate sensing data. The source of street view imagery is Google Street View images. Three fundamental questions arise. How can we extract landscape features from street view images? Do they share similar or dissimilar aspects? If so, what are the differences with conventional typologies in extracting landscape features? This study introduced a ResNet50 that classifies images into pre-trained 365 categories of scenes and decomposition process in GIS. Landscape impacts on air quality were measured by looking at feature explanation powers through modeling ensemble regression models. Models went through a parameter optimization process. After the computation of models, this study calculated the SHAPley Additive exPlanations (SHAP) value as the means to evaluate the feature explanations (Lundberg and Lee, 2017). Applying the idea of game theory to machine learning, during SHAP value calculation set of input features or models in an ensemble are players, the gain of the prediction can be represented as the payoff (Rozemberczki et al., 2022). It helps us get either positive or negative relations of feature explanatory powers pertinent to the dependent.

Our analysis results revealed that several regions of Chicago are suffering spatiotemporal hazardous air conditions refer to health warning of emergency conditions. The landscape features from street view imagery share similar aspects compared with land use features from inventory maps or satellite images. It seems specific urban landscape settings contribute to retaining relatively cleaner air than other parts of Chicago. And land use effects on air quality are not static; instead, they vary temporally. Overall, urban greenness-related factors contribute to retaining cleaner air quality even in temporal terms. Our model defined meteorological conditions like temperature, humidity, energy emission, and intensity as negatively impacting air quality. Future environmental studies can utilize the introduced typologies. Policymakers and agencies can use the result to examine Chicago's air quality standards.

Citations

- Heald, C.L., Spracklen, D.V., 2015. Land Use Change Impacts on Air Quality and Climate. *Chem. Rev.* 115, 4476–4496. <https://doi.org/10.1021/cr500446g>
- Jacob, D.J., Winner, D.A., 2009. Effect of climate change on air quality. *Atmospheric Environment, Atmospheric Environment - Fifty Years of Endeavour* 43, 51–63. <https://doi.org/10.1016/j.atmosenv.2008.09.051>
- Lundberg, S.M., Lee, S.-I., 2017. A Unified Approach to Interpreting Model Predictions, in: *Advances in Neural Information Processing Systems*. Curran Associates, Inc.
- Rozemberczki, B., Watson, L., Bayer, P., Yang, H.-T., Kiss, O., Nilsson, S., Sarkar, R., 2022. The Shapley Value in Machine Learning. *arXiv:2202.05594 [cs]*.
- Zhou, B., Lapedriza, A., Khosla, A., Oliva, A., Torralba, A., 2018. Places: A 10 Million Image Database for Scene Recognition. *IEEE Trans. Pattern Anal. Mach. Intell.* 40, 1452–1464. <https://doi.org/10.1109/TPAMI.2017.2723009>

Key Words: Google Street View, Urban climate sensing, Air quality, Machine learning, SHAP

PARCEL-LEVEL PREDICTION OF FUTURE LAND-USE CHANGES USING A MACHINE LEARNING BASED DYNAMIC SPATIOTEMPORAL MODELING

Abstract ID: 1264

Individual Paper Submission

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Rural and urban areas have been formed over time as a result of human activities and natural events. Some of these changes in lands are irreversible, such as conversion of agricultural lands to residential areas. Once the fertile soils are removed from the ground as a result of the conversion, the same land cannot be reused for agricultural purposes in the future. Therefore, predicting future land use changes at fine geographical units is essential for practitioners and policy makers, because such predictions provide vital information about the potential land development dynamics. Land Use Change (LUC) models are commonly preferred to predict future land developments. These methods reveal complex relationships in land developments which are important for predicting future conditions. Modeling land use changes involves methodological and computational challenges. Complexities in urban systems require researchers to incorporate such complex relationships in their models, while increasing data sizes introduces computational challenges. Machine Learning and AI algorithms such as Random Forest (RF) and Artificial Neural Network (ANN) offer computationally feasible approaches to large scale LUC models while accounting for complex non-linear relationships (Kim et al., 2022; Ron-Ferguson et al., 2021; Soares-Filho et al., 2013; Talukdar et al., 2021; Zhai et al., 2020).

The main goal of this study is to introduce a dynamic LUC modeling framework for predicting future land developments without requiring manually modifying the covariate matrix using Machine Learning and Deep Learning algorithms, such as RF and ANN approaches. Once a LUC model is developed, the covariate matrix generally needs to be designed by experts to predict future land developments. Such a requirement limits implementation opportunities of LUC models to predict future land use changes. To mitigate this issue, our modeling framework utilizes spatial and temporal dependencies to improve prediction accuracy.

In this research, the introduced modeling framework is applied to Florida Parcel Database, provided by UF GeoPlan Center. The statewide parcel database consists of approximately 9 million unique parcels and contains information about parcel geometry, actual construction years of buildings, land uses, sale records, and the number of buildings. Using the actual construction year information, historical conditions of land development are generated, and important parcel and neighborhood characteristics are retrieved from the data set. Historical records can be traced back to 1650, where the most recent year is 2019. In this study, we focus on the period between 1900 and 2019. Future land use changes are estimated based on RF- and ANN-based LUC models. We train all our models using UF HiPerGator 3.0 supercomputer. Further, model trainings are substantially accelerated utilizing GPU parallel processing. Using the modeling framework, future land use changes at the parcel level are predicted for every 5 years until the target year of 2070.

Citations

- Kim, Y., Safikhani, A., & Tepe, E. (2022). Machine learning application to spatio-temporal modeling of urban growth. *Computers, Environment and Urban Systems*, 94, 101801. <https://doi.org/10.1016/j.compenvurbsys.2022.101801>
- Ron-Ferguson, N., Chin, J. T., & Kwon, Y. (2021). Leveraging machine learning to understand urban change with net construction. *Landscape and Urban Planning*, 216, 104239. <https://doi.org/10.1016/j.landurbplan.2021.104239>
- Soares-Filho, B., Rodrigues, H., & Follador, M. (2013). A hybrid analytical-heuristic method for calibrating land-use change models. *Environmental Modelling & Software*, 43, 80–87. <https://doi.org/10.1016/j.envsoft.2013.01.010>
- Talukdar, S., Eibek, K. U., Akhter, S., Ziaul, S., Towfiqul Islam, A. R. Md., & Mallick, J. (2021). Modeling fragmentation probability of land-use and land-cover using the bagging, random forest and random subspace in the Teesta River Basin, Bangladesh. *Ecological Indicators*, 126, 107612. <https://doi.org/10.1016/j.ecolind.2021.107612>
- Zhai, Y., Yao, Y., Guan, Q., Liang, X., Li, X., Pan, Y., Yue, H., Yuan, Z., & Zhou, J. (2020). Simulating urban land use change by integrating a convolutional neural network with vector-based cellular automata. *International Journal of Geographical Information Science*, 34(7), 1475–1499. <https://doi.org/10.1080/13658816.2020.1711915>

Key Words: Land-use change, Predictions, Spatio-temporal modeling, Machine Learning, Florida

CURRENT PLANNING PERSPECTIVES ON ARTIFICIAL INTELLIGENCE: RESULTS OF A NATIONAL SURVEY

Abstract ID: 1282

Individual Paper Submission

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Over the past several decades, urban planning has considered a variety of advanced analysis methods with greater and lesser degrees of adoption. Geographic Information Systems (GIS) is probably the most notable, with others such as database management systems (DBMS), decision support systems (DSS), planning support systems (PSS), and expert systems (ES), having mixed levels of recognition and acceptance (Kontokosta, 2018). The adoption of GIS, some will argue, has been primarily related to its cartographic capabilities and less for the sophisticated spatial analysis techniques. Advances in information technologies have moved very slowly in the field of urban planning while revolutionizing other domains, such as consumer goods and services. Baidu, Amazon, Netflix, Google, and other companies have invested significantly in these technologies to gain insights into consumer behavior and characteristics and improve supply chains and distribution. Likewise, urban planners should capitalize on these technologies to gain new insights into and efficiencies for the communities they serve.

This is an opportune time for planners to reconsider the application of AI-related methods given vast increases in data availability, increased processing speeds, and increased popularity and accessibility of AI. Research on these topics by urban planning scholars has been increasing over the past few years, however, there is little evidence to suggest that the results are making it into the hands of professional planners (Batty, 2018, 2021). Some academics propose that planners shorten the time frames at which they plan to better overlap with such advances in cybernetics and urban operations research (Batty, 2021). Others contend that planners should use the ubiquity of data and advances in computing to enhance redistributive justice in information resources and procedural justice in decision-making among marginalized communities (Boeing et al, 2021).

A first step is to understand the current level of familiarity that planners have with AI, along with their attitudes and perspectives about how these new technologies may affect the planning profession. This paper reports the results of a national survey of American Planning Association (APA) members about their knowledge, experience, and opinions about AI to help better understand the level of readiness regarding this newest phase of innovation adoption. Insights from the survey also help to identify the directions for application development as well as the helping to identify where planners feel least comfortable with certain aspects of AI for planning. The results suggesting that professional planners have low levels of familiarity and direct experience with AI as related to plan-making processes are not surprising, and also point to important educational and upskilling needs for urban planners.

Citations

- Batty, M. (2018). Artificial intelligence and smart cities. *Environment and Planning B: Urban Analytics and City Science*, 45(1), 3–6. <https://doi.org/10.1177/2399808317751169>
- Batty, M. (2021). Planning education in the digital age. *Environment and Planning B: Urban Analytics and City Science*, 48(2), 207–211.
- Boeing, G., Besbris, M., Schachter, A., & Kuk, J. (2021). Housing Search in the Age of Big Data: Smarter Cities or the Same Old Blind Spots? *Housing Policy Debate*, 1–15.
- Kontokosta, C. E. (2018). Urban Informatics in the Science and Practice of Planning. *Journal of Planning Education and Research*, 0739456X18793716. <https://doi.org/10/gg2qhw>

Key Words: artificial intelligence, planning, technology, survey

FAIRNESS-ENHANCING SPATIO-TEMPORAL DEMAND PREDICTION FOR RIDE-HAILING SERVICES

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Individual Paper Submission

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Computational fairness has become an increasingly important issue for the emerging mobility technology in future smart cities (Zheng et al., 2021). In recent years, researchers have developed a series of data-driven approaches for short-term ride-hailing demand forecasting (Guo and Zhang, 2020; Ke et al., 2017). However, the existing literature has several limitations: (1) most previous studies evaluate the performance of the demand predictions by the average prediction accuracy across the whole study region, while research into the disparity of predictive performance between the disadvantaged and privileged areas is very scarce (Yan and Howe, 2021). (2) most previous models do not consider the socioeconomic and demographic information of the areas when making travel demand predictions. However, failure to account for the heterogeneity of these spatio-temporal dependencies can lead to biased modeling results.

To overcome these limitations, this paper proposes a novel strategy to improve prediction fairness while retaining

high prediction accuracy. This strategy is comprised of a new deep learning model, named the spatially adaptive network (SA-Net), and a bias-mitigation regularization method, to achieve the fairness-aware travel demand predictions. We later evaluate the utility of our approach by performing experiments on the Chicago TNC dataset. The contributions of this paper can be summarized as follows:

1. We propose a new model (SA-Net) that can address prediction disparity by effectively incorporating the local socioeconomic and demographic information into the prediction process. It captures the spatial variations by adopting location-specific modification to the standard spatially-invariant convolutional filters. The experimental results show that the SA-Net increases the prediction accuracy for both disadvantaged and privileged groups, with the accuracy gain for the disadvantaged group being larger. Compared with the state-of-the-art predictive model Conv-LSTM Net, the SA-Net reduces the Mean Absolute Error (MAE) by 6.6% and 0.5% for the black and non-black populations, respectively.
2. We propose the fairness metric as the mean percentage error gap (MPE Gap) which measures the gap of mean percentage prediction error between the disadvantaged and privileged groups. We find that previous solutions to spatio-temporal travel demand prediction problems were tend to underestimate demand for the low-demand regions. This is because high errors in low-demand areas will significantly impact MAPE, thus optimizing MAPE would likely underestimate demand in these areas.
3. To tackle the abovementioned prediction disparity issue, we develop a bias-mitigation regularization method that allows the network to learn fair predictions by bringing down the MPE Gap between the two groups. The experimental results show that combining the SA-Net and the bias mitigation regularization, the MPE gap between the low-income and high-income groups drops from 0.127 to 0.059. We plot the distributions of the mean percentage errors across space, and find that the new algorithm has disentangled the correlation between the sensitive attribute (e.g. race, income) and the MPE. These results demonstrate the effectiveness of our algorithm.

Overall, we argue that the prediction bias issue revealed in this work should attract the attention of the researchers and policy makers, since if the travel demand in the disadvantaged neighborhoods is systematically underpredicted, we may fail to provide enough TNC services to these communities, and the limited services will in turn lead to further decrease of the ridership, which constitutes a negative feedback loop. Based on our study, we argue that the TNC companies should scrutinize the fairness dimension of their demand forecasting tools, and take actions to address the demand forecasting biases if they exist. The transportation authority should consider the abovementioned fairness aspects when evaluating the impacts of TNC services on urban transportation, and regulate or tax the TNC companies if they fail to meet the fairness requirement.

Citations

- Guo, G., Zhang, T., 2020. A residual spatio-temporal architecture for travel demand forecasting. *Transp. Res. Part C Emerg. Technol.* 115, 102639. <https://doi.org/10.1016/j.trc.2020.102639>
- Ke, J., Zheng, H., Yang, H., Chen, X. (Michael), 2017. Short-term forecasting of passenger demand under on-demand ride services: A spatio-temporal deep learning approach. *Transp. Res. Part C Emerg. Technol.* 85, 591–608. <https://doi.org/10.1016/j.trc.2017.10.016>
- Yan, A., Howe, B., 2021. EquiTensors: Learning Fair Integrations of Heterogeneous Urban Data, in: *Proceedings of the 2021 International Conference on Management of Data*. Presented at the SIGMOD/PODS '21: International Conference on Management of Data, ACM, Virtual Event China, pp. 2338–2347. <https://doi.org/10.1145/3448016.3452777>
- Yang, Y., Heppenstall, A., Turner, A., Comber, A., 2020. Using graph structural information about flows to enhance short-term demand prediction in bike-sharing systems. *Comput. Environ. Urban Syst.* 83, 101521. <https://doi.org/10.1016/j.compenvurbsys.2020.101521>
- Zheng, Y., Wang, S., Zhao, J., 2021. Equality of opportunity in travel behavior prediction with deep neural networks and discrete choice models. *Transp. Res. Part C Emerg. Technol.* 132, 103410. <https://doi.org/10.1016/j.trc.2021.103410>

Key Words: Fairness in artificial intelligence, Short-term ride-hailing demand forecasting, Spatial-temporal systems, Convolutional neural networks

EXPLORING THE TIME-OF-DAY VARIATION OF URBAN PARK VISITS DERIVED FROM MOBILE PHONE DATA: A CASE STUDY OF TEN COMPREHENSIVE PARKS IN TOKYO

Abstract ID: 1302

Individual Paper Submission

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With appealing green spaces and low cost to use, urban parks are valuable resources for physical activity (PA) and offer multiple benefits to the quality of life in the metropolis. However, planning urban parks ignoring residents' park-visiting habits can also bring negative impacts such as accessibility inequity, service disparity, and gentrification^[1]. Despite a growing literature base focusing on the spatiotemporal features of urban park visits with geo-location big data^[2-4], the time-of-day variation of park visits is relatively understudied: the association between time-of-day park-visiting patterns and park spatial/cultural characteristics, as well as its political implications, remain unclear.

Based on a case study of ten comprehensive parks in Tokyo, our study aims to answer the following questions: (1) How spatial and cultural characteristics of urban parks are interlinked to TFCs derived from mobile phone data? (2) Whether there exist obvious TVPs on weekdays/weekends, in different seasons, and among urban parks in Tokyo? (3) What is the political implication of associations among TVPs, park catchment area, and park activity duration? We proposed an algorithm to calculate the time-of-day (e.g., 10:00 a.m.-10:30 a.m.) park visitor density using a geotagged mobile phone dataset collected from January to December 2011. We then constructed the variation index (VI, the ratio of time-period visitor density and the average visitor density among time periods) and plotted the time-of-day fluctuation curves (TFCs, a series of 26 VIs from 7:00 a.m. to 20:00 p.m. with a 30-minute's interval). TFCs on eight typical days (spring weekday, summer weekday, autumn weekday, winter weekday, spring weekend, summer weekend, autumn weekend, winter weekend) were plotted separately. Finally, we put 80 TFCs into the K-Means algorithm and linked the identified time-of-day visiting patterns (TVPs) to park characteristics collected through field observations and online sources.

We found that time-of-day park visits were closely related to park characteristics, including neighborhoods nearby, buildings and facilities inside the park, and notable cultural events. For instance, Spring Blossom Picnic (an outdoor event in Japanese culture) significantly increased visitor density during the midday of spring weekend, especially for parks with large lawns and cherry blossoms. Parks with child's playgrounds and surrounded by residential areas had more park visits from midday to afternoon on weekends, probably due to family activities. The location of park cases and their TFCs can be found on the online map:

https://xr2006.github.io/sample/Tokyo%20Parks/Tokyo_park_presentation.html. Moreover, five time-of-day visiting patterns (TVPs) were identified based on the K-Means algorithm: (1) TVP 1 had a considerable peak from midday to afternoon, indicating a huge visitor flow brought by notable social events; (2) TVP 2 had a medium peak from morning to evening, indicating a high park-visiting level throughout the day; (3) TVP 3 had a small peak in the midday, indicating an increase of park visits early in the day while dropped quickly after that; (4) TVP 4 had a small peak in the afternoon, indicating an increase of park visits later in the day; (5) TVP 5 was below the average level from morning to evening, indicating a low park-visiting level throughout the day.

Our findings provide new perspectives for urban park planning and design. Firstly, time-of-day park visits can be measured using a mobile-phone-based approach, which logically aligns with field counting while saving human labor. Secondly, TVPs identified by our study can serve as activity-based park categories complementary to conventional ones identified using park sizes and functions. Finally, the urban park management should consider the association among typical days, characteristics of parks, and actual park visits to respond to dynamic park visit patterns beyond generic guidelines.

Citations

- Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'. *Landscape and Urban Planning*, 125, 234–244.
- Xiao, Y., Wang, D., & Fang, J. (2019). Exploring the disparities in park access through mobile phone data: Evidence from Shanghai, China. *Landscape and urban planning*, 181, 80–91.
- Guan, C. H., Song, J., Keith, M., Zhang, B., Akiyama, Y., Da, L., Shibasaki, R., & Sato, T. (2021). Seasonal variations of park visitor volume and park service area in Tokyo: A mixed-method approach combining big data and field observations. *Urban Forestry & Urban Greening*, 58, 126973.
- Monz, C., Mitrovich, M., & Sisneros-Kidd, A. (2019). Using Mobile Device Data to Estimate Visitation in Parks and Protected Areas: An Example from the Nature Reserve of Orange County, California. *Journal of Park and Recreation Administration*.

Key Words: urban park, time-of-day variation, park-visiting patterns, mobile phone data, Tokyo

CLASSIFYING RETAIL CENTERS USING URBAN MOBILITY DATA IN SEOUL

Abstract ID: 1308

Individual Paper Submission

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Retail centers are rapidly changing due to technological and social developments. Online sales changed retail environment all over the world. Its effects, however, are different: some traditional retail areas are declining while other areas are gaining attentions again. To understand these differences, planners, scholars and retail researchers have defined and classified retail centers based on conventional retail characteristics such as retail type, size, function, and revenue (Dolega et al., 2021) while ignoring customers behaviors.

Recently, thanks to rapid development of location-based services (LBS), Information and Communication Technology (ICT), and mobile devices, we can track human movements in a city. Relevant studies analyzing human movements have revealed urban contexts behind those urban morphologies. In particular, recent studies used human movement data to better understand retail centers (D'Silva et al., 2018; Mumford et al., 2021, Philp et al., 2022). D'Silva et al. (2018) analyzed retail business survival using urban mobility data and Mumford et al. (2021) and Philp et al. (2022) classified UK retail centers based on customer movement patterns using footfall data. However, previous studies usually focused on customer volumes in human movement patterns to analyze retail centers. Since human movement patterns contains valuable information such as where they come and go, it is necessary to improve a method to consider such movement information for better classifying retail centers.

In this study, we consider spatio-temporal aspects of urban movements and retail area features for the retail center classification using a month period of taxi dataset, April, 2018 in Seoul, South Korea. Taxi ridership dataset is useful to approximate urban movements as taxis are not limited to their origin and destinations compared to public transportations and therefore it can be used to proxy urban movements in and out to retail centers. For the spatio-temporal aspects of customer movements, we include average distance traveled, number of visits (volume per area), space diversity (measuring people come and go from diverse neighborhoods), time diversity (measuring people come and go the retail area in even time periods), weekday-weekend volume ratio, and origin-destination volume ratio. We include commercial area features such as area, minimum distance to urban center, retail category diversity. All commercial area features are aggregated by each commercial area. We utilize 253 retail cores provided Seoul metropolitan government. Then we apply cluster analysis to group retail centers that share similar features.

We find four distinct clusters namely 1: retail cores around residential areas, 2: new retail cores, 3: retail cores around university campus, and 4: conventional retail cores. The four clusters have different characteristics. For example, passenger volumes, weekend weekday volume ratio, and origin and destination volume ratio are higher in cluster 1 and 3. Average travel distance are getting longer for cluster 1 to 4. On the other hand, cluster 1 showed the highest time diversity which means passengers go to the cluster 1 in even time periods. Cluster 1 shows the longest distance to the urban cores compared to other three clusters. Cluster 4 showed the lowest retail category diversity.

The preliminary results demonstrate the potential of mobility data to classify retail centers considering both supply and demand side of the retail centers. The passenger movement patterns including weekend weekday volume ratio, origin and destination ratio, travel distance and time diversity other than volume show benefits of recognizing demand side that conventional high streets can be differently identified. We expect that the retail classification based on urban movements will broaden understanding of growth and decline in retail centers. We believe more detailed analysis in each cluster will deepen understanding of retail centers in demand side.

Citations

- Dolega, L., Reynolds, J., Singleton, A., & Pavlis, M. (2021). Beyond retail: New ways of classifying UK shopping and consumption spaces. *Environment and Planning B: Urban Analytics and City Science*, 48(1), 132-150.
- D'Silva, K., Jayarajah, K., Noulas, A., Mascolo, C., & Misra, A. (2018). The role of urban mobility in retail business survival. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 2(3), 1-22.
- Mumford, C., Parker, C., Ntounis, N., & Dargan, E. (2021). Footfall signatures and volumes: Towards a classification of UK centres. *Environment and Planning B: Urban Analytics and City Science*, 48(6), 1495-1510.
- Philp, S., Dolega, L., Singleton, A., & Green, M. (2022). Archetypes of Footfall Context: Quantifying Temporal Variations in Retail Footfall in relation to Micro-Location Characteristics. *Applied Spatial Analysis and Policy*, 15(1), 161-187.

Key Words: retail, mobility, cluster analysis, commercial area, human movement

LIVED SPACE IN CHANGING PLACES: EXPLORING DIGITAL COGNITIVE MAPPING TO UNDERSTAND PLACE BELONGING AND PLACE-MAKING

Abstract ID: 1315

Individual Paper Submission

Cities are silent repositories of people's memories, emotions, and identity. It is not an exaggeration to claim that in the lived spaces of the city, we find its soul. The writings of Kevin Lynch (1960), Tuan (1975), Henri Lefebvre (1979 [1991]), John Friedmann (1983), and Leonie Sandercock (2003) have shown us that cities are composed of lived spaces and life spaces of symbolic meanings, emotions, and experiences. Fierce contestation in the city often arises when change arising from urban planning and development threatens to undermine the lived space of its inhabitants such as the place belonging and a sense of community identity among the residents (Marris 1982). Lived space is inherently contentious space because of its intimate connection with social inclusion and the right to the city, in addition to its ambiguous nature that resists easy definition and study.

This paper presents an experimental digital cognitive mapping methodology to understand the lived space of urban inhabitants, with particular attention to its use in places of flux. It builds on mental mapping/sketching research by Lynch (1960), Appleyard (1976), Huynh and Doherty (2007), Fenster (2009), Antona (2019), and new ways of emotional mapping by Deitz et al. (2018) and Nold (2018).

Of the interconnected triad of spaces in Lefebvre's theoretical framework of the production of space (perceived-conceived-lived space), lived space is the hardest to study. Surveys, observations, and interviews with users are usually employed to map out perceived space (spatial practices). Likewise, conceived space (mental representations) can be studied via interviews with users and collecting representations of space like maps, documents, and discourses through secondary research. However, a thorough study of lived space eludes conventional surveys or interviews that asked for opinions or feelings toward urban spaces because experiences in urban spaces cannot be evaluated using verbal description alone. The dimension of emplacement which occurs in social-psychological-spatial experiences such as place belonging is not fully accessible via traditional social science research methods and remains a challenging research area in environmental psychology place attachment studies (Lewicka 2011). If we can better understand the formation of lived space, we would be more able to unpack urban inhabitants' interaction with the built and social environments—a knowledge area critical to guide good urban planning.

The paper will present a review of how lived space has been studied in urban and planning research. It will also present findings from an exploratory use of the digital cognitive mapping method to study the formation and anchors of place belonging among youths in their 20s and 30s in Singapore, a city of constant reinvention to stay attractive to global needs. Also known as a "planners' paradise" Ng (1999) where conceived space dominates lived space and orders daily spatial practices, the paper will present a study of how lived space of place belonging is formed within strong centralized planning. Finally, I will reflect and raise opportunities and limitations of the digital cognitive mapping method for further discussion (Mondschein and Moga 2018).

Via the review and discussion of how lived space can be studied, the paper intends to inform inclusive urban planning, particularly with respect to place-making initiatives that are being increasingly incorporated as a goal of sustainable development in cities. Good place-making turns placelessness (Relph 1976) in our cities into spaces of belonging and ownership. For place-making to be truly effective, perceivably the study of the formation of place belonging as a major element of lived space needs to foremost be addressed.

Citations

- Lynch, Kevin. 1960. *The image of the city*. Cambridge: MIT Press.
- Lefebvre, Henri. (1974) 1991. *The Production of Space*. Translated by Donald Nicholson-Smith. Malden MA, Oxford UK, Carlton, Victoria: Blackwell Publishing.
- Lewicka, Maria. 2011. "Place attachment: How far have we come in the last 40 years?" *Journal of Environmental Psychology* no. 31 (207-30).

Key Words: Mapping, Belonging, Urban Change, Lived space, Place-making

CANADA'S PUSH TO PROMOTE THE SMART CITY: ASSESSING THE IMPACTS OF CANADA'S SMART CITY CHALLENGE ON URBAN GOVERNANCE IN CANADIAN MUNICIPALITIES

Abstract ID: 1323

Individual Paper Submission

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The 'Smart City' has been promoted around the world in places such as Shanghai, Barcelona, London, and Montreal to target private investment toward a range of urban problems - improved energy and water use, efficient transit, and better government - through technological solutions (Kitchin, 2015). Most initiatives, however, are led by the private

sector, with the public sector primarily serving as a facilitator of private investment (Author Redacted, 2021). In 2017, the Government of Canada launched the Smart Cities Challenge (SCC) - a \$300 million pan-Canadian program to spark innovation in technology, governance, and city building across Canadian communities. The SCC was the first of its kind to be open to diverse policy areas and technologies, emphasize government-community collaboration, and include replicability of solutions as a goal (Goodman et al., 2020). There remains, however, an incomplete understanding as to whether the SCC was effective on delivering what it set out to achieve post-hoc. More broadly, there is limited research on the impact of government-led smart city competitions which tend to focus on the innovations themselves not the people and partnerships driving their outcomes (Pereira et al., 2017).

This paper draws on research that investigated the role of the SCC in guiding infrastructure investment associated with the adoption of urban technology in Canadian cities. Unlike other competitions of its kind, the SCC asked cities to choose any technological solution to any urban challenge if they emphasized community engagement. This research examined the impact of the SCC across three planning areas: (1) municipal innovation and governance, (2) collaboration between public/private/community networks, and (3) policy implementation in local government structures. The overarching research question was: to what extent did the SCC accomplish the goals that it established for both the winning and losing proposal bids from participating municipalities? We used a qualitative research approach based on 40 semi-structured interviews with involved stakeholders from the 198 participating cities who comprised a cross-section of winners, finalists, and unsuccessful applicants. The results show how cities use connected technology to inform policy and planning outcomes, and they enrich conceptual and empirical understandings of smart city implementation relevant to other jurisdictions outside of Canada.

Citations

- Goodman, N., authors redacted & Carlsen, N. (2020). Public engagement in smart city development: Lessons from communities in Canada's Smart City Challenge. *The Canadian Geographer/Le Géographe canadien*, 64(3), 416-432
- Kitchin, R. 2015. "The Promise and Perils of Smart Cities." *Society for Computers and Law*, 8 June. <https://www.scl.org/articles/3385-thepromise-and-perils-of-smart-cities>
- Pereira, G., Cunha, M.A., Lampoltshammer, T., Parycek, P., & Testa, M.G. 2017. *Increasing collaboration and city governance: a cross-case analysis of smart city initiatives*. Routledge Taylor and Francis Group.
- Robinson, P and Author Redacted. 2021. *Seeing the City as a Platform: Is Canada's Smart City Challenge a Step in that Direction? From the Platform Economy to the Smart City: Technology and the Transformation of Urban Policy*. Editors redacted (Eds.). McGill-Queens University Press

Key Words: smart cities, urban technology, governance, plan implementation, public policy

DIGITAL PARTICIPATION AND URBAN PLANNING. INTERACTION PATTERNS BETWEEN COMMUNITY GROUPS AND LOCAL GOVERNMENTS

Abstract ID: 1376

Individual Paper Submission

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While digital communication tools and practices have been characterizing the daily life of a large majority of citizens in the Global North in the last twenty years, scant attention has been devoted in planning literature to the effects of such major changes for planning and for citizenship practices (Wilson, Tewdwr-Jones, 2021).

The main research question of the paper is how and to what extent the use of digital technologies enables citizens and community groups to take part in decision making processes and, more in general, in urban transformation at local level. Several practices based on digital technologies as enablers, such as participatory budgeting, civic crowdfunding (Gullino et al. 2019) and, in Italian cities, Social Streets, already use and experiment such technologies for empowering community groups and engaging in future visioning.

In order to better frame and understand community participation and local activism, the paper will take into account different patterns of interaction between local government and citizen activism at local level: from state regulation and community implementation to different forms of cooperation, to community autonomy, and, finally, community opposition.

The first typology, state regulation and community implementation, sees the state and community organizations in their traditional regulatory and implementation roles, as it happens in plan making, where the state sets basic rules and other actors (private, corporate, or civic) contribute to their implementation.

The second typology identifies cases in which there is structured cooperation, via explicit mechanisms for coordination between community initiatives and local authorities. The coordination in some cases is simultaneous,

when state and civic actors jointly design programs or projects, or it may happen in two steps, when community actors play a creation or design role, and local authorities play an organizational role to support and diffuse existing grassroots initiatives.

The third typology is completely autonomous community initiatives, which do not seek and sometimes explicitly refuse cooperation with the state.

Finally, community organizations and local authorities can be in open opposition. This is the case when local authorities decide to operate in a certain direction and community activists react, taking a clear oppositional stance, which may result in impasse or stalemate, but also explorations of alternative possibilities.

Impinging on these categories to frame local experiences, the paper will critically discuss how the modes of interaction are being transformed by the use of digital technologies, which may be the innovations and opportunities brought about, as well as the risks, in terms of novel forms of exclusion of different local voices, as well as of capture of decision-making processes by more powerful constituencies and groups, exacerbating local inequalities.

The research is based on interviews to community activists in Italian cities, coupled with digital ethnography conducted on Facebook groups dealing with community issues in Milan, Rome and Bologna.

While the research is ongoing, some first findings seem to show that, while digital literacy is generally quite widespread in community organizations, which can make the most out of basic technology and widely-used digital platforms, a critical understanding of the possible threats and pitfalls of those technologies (Isin, Ruppert, 2015) is much less widespread in community organizations and in local governments alike. These emerging findings show the importance of strengthening forms of awareness and digital citizenship, in order to better engage communities in more equal decision making processes in urban transformation.

Citations

- Gullino, S.; Seetzen, H.; Pacchi, C.; Cerulli, C. (2019) "Interpreting Patterns of Interaction between Civic Activism and Government Agency in Civic Crowdfunding Campaigns", *Built Environment*, 45 (2), pp.248-257
- Isin E., Ruppert E. (2015) *Being Digital Citizens*, Rowman&Littlefield
- Marinelli A., Parisi S. (2020) "(Smart) City and the (Open) Data. A Critical Approach to a Platform-driven Urban Citizenship", *Partecipazione e Conflitto*, Vol.13, n.2: 1168-1179 DOI: 10.1285/i20356609v13i2p1168
- RTPI (2019) *A Digital Planning Manifesto*, September (<https://www.rtpi.org.uk/policy/2019/september/a-digital-planning-manifesto/>)
- Wilson A., Tewdwr-Jones M. (2021) *Digital Participatory Planning. Citizen Engagement, Democracy, and Design*, Routledge

Key Words: Citizen participation, Digital citizenship, Urban planning, Community planning

URBAN GOVERNANCE AND THE PRIVACY CHALLENGE IN SMART CITIES

Abstract ID: 1389

Individual Paper Submission

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This paper introduces the empirical studies and normative debates surrounding privacy to urban affairs researchers and the broader urban studies audience, placing this important discourse within the context of the communication and surveillance technologies rapidly being deployed in smart cities. The key research question, as yet unanswered, asks how urban affairs scholars and built environment professionals can become aware of and contribute to the preservation of public privacy, in research and in practice. This paper consists of three parts. The first part discusses the concept of anonymity and its critical role for maintaining democracy and a free market, and by doing so, answers the research question of why privacy, for individuals and groups in society, is not only a personal matter but also a public interest and, in particular, a public interest for urban affair scholars to embrace. The second part answers the research question of how spatial anonymity and digital anonymity are interrelated in different urban spaces through the collection of spatial data. The paper introduces the fundamental concept of re-identifiability, which serves as a common measurement for anonymity in existing empirical studies, and then highlights the role of the built environment in elevating the risk of re-identification from supposedly anonymized data. The third part introduces three frameworks - contextual integrity, privacy taxonomy, transaction cost economics - to establish a shared understanding of the approaches being engaged, in research and in the practice of cities, to govern data, and location data in particular. The paper concludes with remarks about the implications of privacy as a research agenda for urban affairs scholarship.

Citations

- Whittington, J., Hoofnagle, C.J., 2011. Unpacking Privacy's Price. *N.C. L. Rev.* 90, 1327.
- De Montjoye, Y.-A., Hidalgo, C.A., Verleysen, M., Blondel, V.D., 2013. Unique in the crowd: The privacy bounds of human mobility. *Scientific reports* 3, 1376.
- Cohen, J.E., 2017. Surveillance vs. privacy: effects and implications. *Cambridge Handbook of Surveillance Law*, eds. David Gray & Stephen E. Henderson (New York: Cambridge University Press, 2017) 455–69.
- Nissenbaum, H., 2004. Privacy as contextual integrity. *Wash. L. Rev.* 79, 119.
- Solove, D.J., 2005. A taxonomy of privacy. *U. Pa. L. Rev.* 154, 477.

Key Words: Location Data Privacy, Data Re-identification, Contextual Integrity, The Taxonomy of Privacy, Transaction Cost Economics of Privacy

EXPLORING THE IMPACTS OF ROAD NETWORK STRUCTURE ON RETAIL STORE RENTS IN MEGACITIES AND ITS IMPLICATIONS FOR PLANNING INTERVENTION: THE CASE OF HANGZHOU, CHINA

Abstract ID: 1394

Individual Paper Submission

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As real estate market is generally considered spatially segmented, extant research has concluded that real estate value is not only affected by the overall supply-demand relation at the city level, but is also determined by geographical factors, including location, public facilities, landscape, etc. However, this paper endeavors to contribute to the current discussion in two aspects: 1) Due to data availability, empirical study on the impacts of the above geographical factors are usually focused on housing market, rather than retail rents; 2) Therefore, even if the road network structure has been proven to have a significant impact on housing prices in certain scales, its interplay with retail rents are yet to be explored. Having sorted out the theoretical foundation and empirical studies on this topic, this research explores the influence of spatial size, building types, consumers' behaviors and location characteristics on the retail store rents using Hedonic Model. Furthermore, this research interprets the characteristics of the road network structure in Hangzhou with spatial syntax calculations and pays special attention to the impacts of road network structure on retail store rents in China's megacities from a multi-scale perspective. Taking Hangzhou, a megacity on the east coast of China as an example, this research obtained open data and collected the retail store rents and their various attributes, and conducted an in-depth empirical investigation on what drives the retail store rents in Hangzhou. Having quantified a series of road network structure indicators through the space design network analysis (sDNA), this research examined the impacts of road network structure on Hangzhou's retail store rents at different scales (such as 0.8km, 1.2km, 2km, 5km, 8km), when some common feature variables are controlled for. It's worth noting that when investigating the impacts of road network structure on retail store rents, the authors also designed a control group where housing prices are also taken as dependent variable in the same area. The preliminary findings reveal that: 1) As location and the distance from CBD and other factors are usually easy to be understood by the public, this research demonstrates that the road network structure as a location feature also significantly affects the retail store rents at some scales, also this impact is not easy to be noticed. 2) The index of accessibility as in the descriptive statistics of road network structure by SDNA is an important factor affecting both housing prices and retail store rents, and it plays an even greater role at the community scale. 3) Compared with residential buildings, retail stores are more closely related to road network system, which is proven to be more influential on retail store rents rather than housing prices in our empirical study. 4) Now that the existing urban road network characteristics and retails distribution in Hangzhou suggests that some parts of the city, for example, the eastern part of Binjiang District in Hangzhou, has the potential to continue to grow to be commercial centers, informed planning interventions will likely improve the local economic development at the community level. This research also offers extended discussion on the policy implications of the findings mentioned above and how they might inform smart planning interventions on community economic development in megacities.

Citations

- Ye, Y.; Xie, H.; Fang, J.; Jiang, H.; Wang, D. Daily Accessed Street Greenery and Housing Price: Measuring Economic Performance of Human-Scale Streetscapes via New Urban Data. *Sustainability*, 2019, 11, 1741.
- Gu, Hengyu; Shen Tian; Zhou Lin, etc. Spatial-temporal analysis of the impact of Road network structure on housing price in Guangzhou based on GWR and sDNA Model [J]. *Economic geography*, 2018, 38(03): 83-91.
- Dang Yi; Yu Jianhui; Zhang Wenzhong. The impact of NIMBY facilities on housing prices in Beijing: A case study of large waste disposal facilities [J]. *Geographical research*, 2020, 39(08), 1769-1781.

- Wang De; Huang Wanshu. Hedonic Housing Price method and its application[J]. Urban planning, 2005, 29(03): 62-71.

Key Words: road network structure, multi-scale, megacity, retail store rents, community economic development

USING GEOLOCATED SOCIAL MEDIA DATA TO UNDERSTAND HUMAN ACTIVITIES, POPULARITY, AND FUNCTIONALITY FOR GREEN SPACES WITH MACHINE LEARNING APPROACHES

Abstract ID: 1450

Individual Paper Submission

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Green spaces have significant impacts on urban living environments, providing shared natural areas and entertainment spaces among other benefits. Investigating the human activities within the green spaces, the functionality of green spaces, and the impact factors for visiting popularity is valuable for supporting green space design and guiding land use development around public green spaces. This study utilizes machine learning techniques to mine social media text and image data to extract multi-perspective information on public green space popularity, activities, and functionality. The coupling of the two types of data enables the extraction of a rich and comprehensive analytical frame for understanding how green spaces are used and how they might be improved. The extracted green space popularity under different activity and functionality types is also modeled based on green space design features, locational attributes, and socio-economic features to indicate the design principles for green spaces.

Conventional methods used to extract popularity and functionality information on green spaces have typically relied on questionnaires and in-site observations, both resource and time-consuming processes (Lim et al., 2018). These approaches can also be context-dependent and produce less transferable data across regions. Some academic researchers have realized the gap and attempted to apply data-based analysis (usually using geo-located social media check-in or review data) in information collection for green spaces (Hamstead et al., 2018; Kovacs-Györi et al., 2018). Nevertheless, these studies typically focused on single perspective of green space information. Other perspectives of information, and the geolocated social media images, which have the potential to deepen our insights into green spaces, were not frequently analyzed.

This study aims to propose an information extraction framework to extract richer, more professional, and multi-perspective information for green spaces (popularity, functionality, and activities) through the machine learning-based analysis of social media images, reviews, and ratings. The sentiment analysis on Google review contents and normalized Google ratings are combined to identify the visiting popularity and human activities of green spaces. A vector space for each Google review is firstly created, and then the Random Forest model is used to predict popularity and activities after testing multiple machine learning models.

A deep Convolutional Neural Networks (CNNs) based image processing model is designed to extract green space functionality from social media images. Geo-located green space images collected from social media have the potential to provide comprehensive information but are seldom used because of the difficulty in collecting and parsing data. For example, image datasets can be sparse and of varying quality, and the similarities between images even in different green spaces, are naturally high and difficult to differentiate. To overcome the obstacle, we use a deep learning-based approach to convey generic knowledge learned from other contexts to the deep CNNs pre-training process to lower data requirements and reduce data variation issues, which raised the accuracy in extracting functionality information from 51.11% to 73.34%, which is a relatively good performance using low-quality green space images from social media data.

The City of Chicago is chosen as an application case to test the framework. The result can support better green space planning and design, as well as adjust the current design principles. The regression analytic results for the influences of socioeconomic factors on green space popularity can also imply the planning strategies and policies on spatially distributing green spaces and neighborhood designs. The proposed information extraction framework has the potential to be used beyond green spaces, to extract all types of geolocations using images and texts to provide better analytic information for many fields.

Citations

- Hamstead, Z. A., Fisher, D., Ilieva, R. T., Wood, S. A., McPhearson, T., & Kremer, P. (2018). Geolocated social media as a rapid indicator of park visitation and equitable park access. *Computers, Environment and Urban Systems*.

- Kovacs-Györi, A., Ristea, A., Kolcsar, R., Resch, B., Crivellari, A., & Blaschke, T. (2018). Beyond spatial proximity—classifying parks and their visitors in London based on spatiotemporal and sentiment analysis of Twitter data. *ISPRS International Journal of Geo-Information*, 7(9), 378.
- Lim, K. H., Lee, K. E., Kendal, D., Rashidi, L., Naghizade, E., Winter, S., & Vasardani, M. (2018). The grass is greener on the other side: Understanding the effects of green spaces on Twitter user sentiments. Paper presented at the Companion Proceedings of the The Web Conference 2018.

Key Words: Social media, Green space, Machine learning, Image processing, Natural language processing

ANALYSIS OF URBAN RESILIENCE USING FOOT TRAFFIC AND RETAIL POINT-OF-SALES BIG DATA IN THE COVID-19 PANDEMIC ERA; A CASE STUDY OF SEOUL METROPOLITAN AREA, SOUTH KOREA

Abstract ID: 1494

Individual Paper Submission

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From the beginning of the COVID-19 pandemic, the academic community has reported that urban daily travels and urban economic activities have significantly decreased in cities. Because these abrupt changes have severely impacted on economic vitality in many urban commercial and business districts, the urban resilience concept must include discussions on how planners can develop effective measures or indicators that can be used to visualize geographic vulnerability and temporal changes pertaining to economic vitality in different urban fabrics.

In this study, we present a methodological framework how two important properties of urban resilience, Robustness and Rapidity, can be conceptualized and be measured using Big data. A sustainable and resilient city should be able to enhance the ability to withstand external shock without weakening existing functions (Robustness) and the ability to restore functions quickly or recover economic loss (Rapidity).

We have chosen Seoul metropolitan area in South Korea as a study area. We collected Spatio-temporal Big data of both foot traffic and the commercial retail point-of-sales (POS) data across the entire city from year 2019 to 2021, the pre-and post-pandemic periods. In specific, we focus on empirical analyses that lead to the discussion with three main questions: (1) How can we conceptualize and develop community's resiliency measures for economic recovery in the post-epidemic era? (2) How the Big data of foot traffic and retail points-of-sales and urban analytics methods can be utilized to measure the geographic variability of urban resiliency over the epidemic? (3) Which urban communities and urban development types are less resilient and slower in the economic recovery?

The preliminary analysis results suggest that socio-economically depressed urban communities and old downtowns would struggle more in economic recovery than newly developed, economically viable communities due to the pandemic. In the meantime, we also found that the level of two properties and urban resilience as a whole would spatially and temporally vary by different community's socio-economic profiles and the scale of urban development types in the past.

We also discuss that local urban land-use fabrics are one of the essential explanatory factors in urban resiliency. In specific, commercial areas are the most significantly impacted by the pandemic, whereas the green spaces improved the level of urban resiliency, which provides policy implication that securing green spaces is an effective policy direction to promote urban resilience.

Citations

- Chunyu Shi & Laia Laio & Huan Li & Zhenhua Su, 2022, "Which urban communities are susceptible to COVID-19? An empirical study through the lens of community resilience", Shi et al. *BMC Public Health*
- Shahraki, A.A. The Post-Covid-19 Era Requires Maximum Urban Resilience. Preprints 2021, 2021100286 (DOI: 10.20944/preprints202110.0286.v1).
- Zhen Chu & Mignwwang Cheng & Malin Song, 2021, "What determines urban resilience against COVID-19: City size or governance capacity?", *Sustainable Cities and Society*, Volume 75
- u Chen, X., Quan, R. A spatiotemporal analysis of urban resilience to the COVID-19 pandemic in the Yangtze River Delta. *Nat Hazards* 106, 829–854 (2021). <https://doi.org/10.1007/s11069-020-04493-9>

Key Words: Urban resilience, Big data, Foot Traffic, Retail Point-of-Sales, Zoning

EXAMINING THE RELATIONSHIP BETWEEN CRAFT BREWERIES AND GENTRIFICATION IN JACKSONVILLE, FLORIDA.

Abstract ID: 1496

Individual Paper Submission

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The craft beer industry has experienced tremendous growth in recent years, as the number of craft breweries in the United States have risen over 900%. In the Jacksonville area alone, there have been over 20 breweries established since 2008. However, their tendency to locate in and “aestheticize” post-industrial economically depressed areas raises concerns over their potential to accelerate gentrification and displacement (Matthews and Picton, 2014). Current research indicates a connection between the presence of craft breweries and the occurrence of gentrification; however, it is unclear whether craft breweries tend to catalyze or follow demographic and housing changes. A study in Portland, Oregon found that craft breweries have the potential to create industrial jobs and revitalize the area where they are located. However, it also noted the tendencies of craft breweries in Portland to follow already-triggered gentrification, and therefore cautions their ability to “solidify on-going patterns of gentrification,” (Walker and Miller, 2018).

This paper examines the relationship between neighborhood change indicating gentrification and openings of craft breweries in Jacksonville, Florida. We used a two-pronged mixed methods approach to inform and contextualize the extent of the changes as they relate to craft breweries. The first part involves a longitudinal analysis of demographic and economic changes that are considered relevant indicators of gentrification. Utilizing ArcGIS Pro 2.8.2 (ESRI, 2021), American Community Survey (ACS 5 -year) estimates for these indicators were mapped and tracked in Jacksonville, Florida, between 2012 and 2019 at the block group level. This process is based on the neighborhood trend analysis outlined by the National Association for Latino Community Asset Builders (NALCAB, 2018) as well as Walker and Miller’s study correlating neighborhood change to craft brewery openings. Indicators comprising this analysis included changes in percent non-Hispanic white alone, percent of people twenty-five years old and above with a bachelor’s degree or higher, median household income, median value of owner-occupied housing units, and median gross rent. Using the city-wide indicators as a baseline, each block group was assigned a numeric score based on the number of indicators that experienced greater directional changes. Total scores were then used to create spatiotemporal year-to-year analyses to measure the extent of gentrification and compare block groups where craft breweries are clustered from with other block groups.

The second part of this research provides more insight into the role of craft breweries and perception of gentrification in Jacksonville through interviews with experts and key-stakeholders of issues relating to gentrification and the craft-brewing industry. Structured, open ended, phone interviews were conducted to identify and summarize key themes surrounding the perceptions towards craft breweries. The results of the interview analyses showed that craft breweries are often seen locating in areas where gentrification is occurring, but do not seem to be the main driving factor in its onset. Many interviewees cited the potential of craft breweries to operate as social, cultural, and economic hubs in revitalization efforts, however, their effectiveness typically relies on the community needs and characteristics. The results of the spatial analysis showed that the block groups containing or directly adjacent to craft breweries block groups experienced higher rates of change indicating gentrification. However, in many areas the most significant changes indicating gentrification occurred prior to the opening of a craft brewery. As a result, this research alerts local planning and revitalization professionals as well as area developers to explore the revitalization opportunities for inner city residents and recommends prioritizing the need for initiating housing affordability measures, including local businesses, to ensure residents’ stability, especially in areas with higher risk of gentrification.

Citations

- Matthews V & Picton, R. (2014). Intoxifying gentrification: Brew pubs and the geography of post- industrial heritage. *Urban Geography*. doi: 10.1080/02723638.2014.887298
- National Association for Latino Community Asset Builders (NALCAB). (2018). Guide to equitable neighborhood development. NALCAB. [PDF]. <https://nalcab.org/wp-content/uploads/2019/07/END-Toolkit.pdf>
- Walker, S. and Miller, C. F. (2018). Have craft breweries followed or led gentrification in Portland, Oregon? An investigation of neighborhood change. *Geografiska Annaler Series B Human Geography*. 10.1080/04353684.2018.1504223

Key Words: Gentrification, Craft Breweries, Geospatial Analysis, Neighborhood Change, Revitalization

MATERIAL, VIRTUAL AND {RE}CONSTRUCTED WORLDS - 3D DIGITAL MODELING IN HISTORIC PRESERVATION

Abstract ID: 1498

Individual Paper Submission

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This paper discusses the implications on the future of heritage preservation practice with an analysis of current and proposed uses of 3D Digital Modeling at various scales, from that of an object to {re}constructing worlds. Gaston Bachelard, in his seminal book 'The Poetics of Space', says, "The mind sees and sees again, (mere) objects, while the soul, finds the nest of immensity in one". The nest of immensity – with all its possibilities, reflected in the imminent, digitally re{constructed} worlds where the material virtualized, forms the building blocks of a digitized universe. Carlo Ratti and Matt Claudel speak of our physical world already 'blanketed' by the virtual. This overlap of the material and the virtual is creating entities in hybrid realms. As Moore's Law suggests, a synthesis of convergent technological advances, here in machine learning and artificial intelligence, is slated for exponential growth and will actuate complete transformation through diverse applications in many fields, including that of historic preservation. In this paper I will include works by Factum Foundation, Iconem and, more specifically the Venice Mirror World project at EPFL, that uses various techniques and research applications in visual pattern discovery, morphological and semantic segmentation of point clouds, big data from the past, and Octree for accessing data, while layering spatiotemporal data on a 4D skeleton. This paper is an analysis of the implications of emerging digital world re{construction} projects on the practice and theoretical frameworks of historic preservation.

Citations

- Bachelard, Gaston. 1974. *La Poétique de l'espace*. (8e Édition.). Bibliothèque de Philosophie Contemporaine. Presses Universitaires De France.
- Ratti, Carlo, and Matthew Claudel. 2016. *The City of Tomorrow: Sensors, Networks, Hackers, and the Future of Urban Life*. New Haven and London: Yale University Press.
- Kaplan, Frederic, and Isabella Di Lenardo. 2020. "The Advent of the 4D Mirror World." *Urban Planning* 5 (2): 307–10. <https://doi.org/10.17645/up.v5i2.3133>.
- Lowe, Adam. 2020. *The Aura in the Age of Digital Materiality: Rethinking Preservation in the Shadow of an Uncertain Future*. Factum Foundation.
- Croce, Valeria, Gabriella Caroti, Livio De Luca, Kévin Jacquot, Andrea Piemonte, and Philippe Véron. 2021. "From the Semantic Point Cloud to Heritage-Building Information Modeling: A Semiautomatic Approach Exploiting Machine Learning." *Remote Sensing* 13 (3): 461. <https://doi.org/10.3390/rs13030461>.

Key Words: Historic preservation, Digital reconstruction, 3D digital modeling, Mirror World, Big data

MAPPING THE PRINTING PRODUCTION NETWORKS THROUGH IMAGE RECOGNITION AND GPS SENSORS

Abstract ID: 1534

Individual Paper Submission

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Manufacturing firms within a cluster develop social and industrial networks that make them competitive in the market through reduced transaction costs. This is especially the case with mature small to medium sized urban manufacturing firms that have endured increasing land prices and labor costs while remaining competitive in the market in post-industrial cities. However, gathering information of the production network among such firms can be challenging especially when the information about the business partners is confidential. This study is based in Seoul, South Korea's largest printing district to map the network among printing firms by following 10 makeshift paper delivery vehicles for 2 weeks using DIY sensors. By attaching a GPS and GoPro sensor kit to the makeshift motorcycles, the project gathers production network data between the printing firms following the delivery vehicles. Using map-matching algorithms on the GPS readings, and image processing algorithms on the collected GoPro images, the research team visualizes the trajectory of the delivery vehicles, and the network among printing firms. The analysis contributes to the literature of social networks among urban manufacturing firms, by proposing a small data methodology utilizing DIY sensors to gain access of the sensitive information of the collaborative network. In a context of constant state-led gentrification pressure on urban manufacturing land, the results demonstrate the tight knit community through the social networks the firms have established and emphasizes the role of the makeshift motorcycle drivers as the enablers of the economy of proximity and just-in-time production.

Citations

- Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009). Network analysis in the social sciences. *science*, 323(5916), 892-895.
- Williams, S., & Currid-Halkett, E. (2014). Industry in motion: using smart phones to explore the spatial network of the garment industry in New York City. *PloS one*, 9(2), e86165.
- Ashton, W. (2008). Understanding the organization of industrial ecosystems: A social network approach. *Journal of Industrial Ecology*, 12(1), 34-51.
- Uzzi, B. (1997). Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative science quarterly*, 35-67.
- Ardeshir, S., Zamir, A. R., Torroella, A., & Shah, M. (2014, September). GIS-assisted object detection and geospatial localization. In *European Conference on Computer Vision* (pp. 602-617). Springer, Cham.

Key Words: Social Network Analysis, sensor, GIS, Image recognition, urban manufacturing

CHANGES IN THE LOCATION AND FUNCTION OF URBAN STREET COMMERCE DUE TO ONLINE SHOPPING

Abstract ID: 1541

Individual Paper Submission

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Many commercial activities are no longer location-dependent. In recent years, the huge growth of online shopping and the increase in non-face-to-face activities caused by COVID-19 have accelerated this. The proportion of online shopping in Korea's retail sales increased significantly from 21.4% in 2019 to 27.5% in 2021. These social and technological changes can change cities' travel and activities, retail landscape, and urban spatial structure. However, studies are currently limited in providing this knowledge. How is urban commerce changing? And where are these changes taking place? What are the influencing factors of change? Finding an answer to this question can provide valuable knowledge in urban planning and design.

We identify changes in urban retail, identify regional differences in these changes, and ultimately investigate the factors that influence these changes. In particular, noting that social and leisure functions are important characteristics of recent retail changes, we study the location change factors of this type of store. In this study, we consider the temporal availability of urban activities for 24 hours as well as the long-term changes in urban retail (2010-2021). Temporal availability helps us understand the social and leisure characteristics of urban commerce that cannot be replaced online. In addition, considering the temporal availability of urban activities in a situation where online shopping and telecommuting are expanding due to technological advances and non-face-to-face activities are increasing due to COVID-19 can help with more accurate modeling.

We use online shopping data (Statistics Office) and credit card big data to classify over 100 retail businesses (and food and personal services) according to their online alternative, social and leisure characteristics. Credit card big data includes data such as the time and frequency of each commercial activity. In addition, the neighborhood is categorized by using the De Facto Population data. Compared to simply classifying residential, business, and commercial areas based on land use, this classification enables a more sophisticated classification by considering recent non-face-to-face activities and mixed land use characteristics.

Analysis using this data can confirm whether social and leisure factors play an important role in the resilience of urban retail and retail transformation in the recent changes in the urban environment, the so-called 'Retail Apocalypse'. In addition, this study will be able to derive regional differences in these changes and find influence factors other than traditional location factors such as movement economy and centrality paradigm. This study of changes in Seoul's urban commerce provides many insights into the crises and opportunities that may arise globally.

Citations

- Carmona, M. (2022). The existential crisis of traditional shopping streets: The sun model and the place attraction paradigm. *Journal of Urban Design*, 27(1), 1-35.
- Gehlke, S. R., & Clifton, K. J. (2016). Toward a spatial-temporal measure of land-use mix. *Journal of Transport and Land Use*, 9(1), 171-186.
- Ilägrstrand, T. (1970). What about people in regional science?. In *Papers of the Regional Science Association* (Vol. 24).
- Meltzer, R., & Capperis, S. (2017). Neighbourhood differences in retail turnover: Evidence from New York City. *Urban Studies*, 54(13), 3022-3057.
- Wrigley, N., Lambiri, D., Astbury, G., Dolega, L., Hart, C., Reeves, C., ... & Wood, S. (2015). British high streets: From crisis to recovery? A comprehensive review of the evidence.

Key Words: retail change, e-commerce, temporal availability, big data

USING GOOGLE ‘PEGMAN’ AUDITS TO COLLECT STREET-LEVEL PEDESTRIAN INFRASTRUCTURE DATA

Abstract ID: 1572

Individual Paper Submission

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Street-level indicators of walkability, such as the presence of curb cuts or shade from tree canopies, are often overlooked in walkability studies in favour of more objective measures of walkability derived from census data or GIS analysis (Stafford & Baldwin, 2018). Although these data are useful, they alone cannot account for the specific walkability (or rollability) needs of all individuals. Detailed built environment data are not often available through government open data collections, and as a result, in-person audit tools are often used by planning researchers to collect them. However, they are labour-intensive and time-consuming, limiting the amount of data that can realistically be collected.

Google Street View remote audits have become well established as effective methods of primary data collection (Vanwolleghem et al., 2014; Mooney et al., 2020). For this project, a remote audit was preferable to an in-person one due to the travel restrictions imposed by the pandemic. This research used the ‘Pegman’ feature to remotely collect street-level pedestrian infrastructure data within neighbourhoods in Halifax Regional Municipality in Nova Scotia (HRM) relevant to accessibility. These data were collected as part of a larger project which included a range of data related to sociodemographic, street-level and community-level indicators of walkability and availability of services in HRM. To our knowledge, this study is the first of its kind to use experience-based methods with Google Street View to collect street-level indicators of walkability (as opposed to more commonly used objective measures, such as NVDI).

Over the course of four months, we identified a total of 3684 curb cuts in our sample; of those, 1369 (37%) of them were considered ‘fan-style’ curb cuts, and only 193 (5%) included tactile attention indicators. Most curb cuts (75%) received a score of 2 or 3 out of 5. In our shade assessment, we sampled a total of 2203 road segments. The majority (62%) of the roads sampled received a shade score of 1 or 2 out of 5. Results have been mapped by each street segment, and as composite scoring for each COMe. Research is currently ongoing to cross-tabulate this data with the other indicator data we collected for this project.

This method proved to be an effective and efficient tool to measure detailed walkability indicators. We believe this methodology is easily replicable and has advantages beyond its suitability for pandemic conditions. The remote audit allowed us to collect a volume of data that would not have been possible had it taken place in-person and has provided a richer picture of walkability in HRM than we could have achieved with census data alone. Although scoring systems are inherently subjective, an unexpected result of this study was that the shade and greenery scoring system used for the ‘Pegman’ audit produced statistically significant results against other methods of auditing. This paper outlines our process, the challenges we encountered, and guidance for researchers who wish to collect data using this methodology.

Citations

- Mooney, S., Wheeler-Martin, K., Fiedler, L., LaBelle, C., Lampe, T., Ratanatharathorn, A., Shah, N.N., Rundle, A.G., & DiMaggio, C. (2020). Development and Validation of a Google Street View Pedestrian Safety Audit Tool. *Epidemiology* (Cambridge, Mass.), 31(2), 301-309. DOI: 10.1097/EDE.0000000000001124
- Stafford, L., & Baldwin, C. (2018). Planning Walkable Neighborhoods: Are We Overlooking Diversity in Abilities and Ages? *Journal of Planning Literature*, 33(1), 17–30. DOI: 10.1177/0885412217704649
- Vanwolleghem, G., Van Dyck, D., Ducheyne, F., De Bourdeaudhuij, I., & Cardon, G. (2014). Assessing the environmental characteristics of cycling routes to school: A study on the reliability and validity of a Google Street View-based audit. *International Journal of Health Geographics*, 13(1), 19. DOI: 10.1186/1476-072X-13-19

Key Words: Google Street View, Accessibility, Audit, Walkability, Pedestrian

MEASURING HUMAN SUBJECTIVE MOMENTARY SENTIMENT IN PUBLIC SPACES DURING THE COVID-19 PANDEMIC: USING TWITTER DATA IN MANHATTAN, NEW YORK CITY

Abstract ID: 1584

Individual Paper Submission

In the mist of the COVID-19 pandemic, public spaces have taken on a more significant role in human and urbanized society. While the shutdown and stay-at-home orders have kept people at home, unprecedented stressors have become a hazard to their daily life, directly and indirectly affecting people's physical and psychological wellness. As people have accordingly seek out safe venues for their physical activities and social interactions, the frequency of visitation and use of public spaces have increased during the pandemic period (Honey-Rosés et al., 2020). Exposure to urban public spaces is also of particular importance to urban dwellers to mitigate the negative impacts of COVID-19 crisis, by encouraging social and recreational opportunities as well as reducing stress and depressive symptoms (Lopez et al., 2021).

New York City, one of the hardest-hit areas by COVID-19, have accordingly introduced new and adjusted policies in relation to using public spaces after the onset of the pandemic. In particular, the city's parks and playgrounds that had left empty from the coronavirus-triggered shutdown were allowed to reopen for the public from June 22, 2020 – about 4 months after the first case of COVID-19 reported in New York State. As of June 27, 2020, the city has also required all outdoor privately owned public spaces open to the public, to increase open spaces that could be used for entertainment, dining, and retail amenities as well as health screening in a social distant way. These changes have further affected the habits and behaviors of how people have used public spaces during the pandemic period (Honey-Rosés et al., 2020).

While existing studies have explored the varying effects of public spaces – mainly focusing on urban parks – on public health and well-being, little has been known of subjective human perception and sentiment within both publicly and privately owned public spaces during the pandemic situation. Using a difference-in-differences approach combined with sentiment analysis, this study thus aims to explore how subjective momentary sentiment polarities expressed in tweets within either publicly or privately owned public spaces vary before and after the onset of the COVID-19 pandemic, as compared with those generated outside of the public spaces in Manhattan, New York City. The main datasets in the study are 1) the records and maps of both publicly and privately owned public spaces in Manhattan, New York City, available from the BYTES of the BIG APPLE archive and the MapPLUTO 21v2, and 2) the geolocated Twitter data collected by using the Twitter API v2, both before (from January 2019 to December 2019) and during the pandemic period (from July 2020 to June 2021).

The proposed methodological strategies and data science technologies using social media data have the potential to broaden the understanding of the dynamics of human behaviors, experiences, and lifestyle trends in the places where they live or are active in, but also explore how people characterize their neighborhoods or urban spaces through language (Plunz et al., 2019). These also could address some of the limitations identified with the traditional methods (i.e., observations, surveys, and interviews) – time consuming, labor-intensive, and limited to small sample sizes (Hu et al., 2019). Findings of this study could provide some guidance to policymakers and urban planners for the design and management of urban public spaces, particularly during pandemics, based on the potential ability of public spaces to promote subjective human sentiments and momentary emotions.

Citations

- Honey-Rosés, J., Anguelovski, I., Chireh, V. K., Daher, C., Bosch, C. K. van den, Litt, J. S., Mawani, V., McCall, M. K., Orellana, A., Oscilowicz, E., Sánchez, U., Senbel, M., Tan, X., Villagomez, E., Zapata, O., & Nieuwenhuijsen, M. J. (2020). The impact of COVID-19 on public space: an early review of the emerging questions – design, perceptions and inequities. *Cities & Health*, 1–17.
- Hu, Y., Deng, C., & Zhou, Z. (2019). A Semantic and Sentiment Analysis on Online Neighborhood Reviews for Understanding the Perceptions of People toward Their Living Environments. *Annals of the American Association of Geographers*, 109(4), 1052–1073.
- Lopez, B., Kennedy, C., Field, C., & McPhearson, T. (2021). Who benefits from urban green spaces during times of crisis? Perception and use of urban green spaces in New York City during the COVID-19 pandemic. *Urban Forestry & Urban Greening*, 65, 127354.
- Plunz, R. A., Zhou, Y., Carrasco Vintimilla, M. I., McKeown, K., Yu, T., Ugucioni, L., & Sutto, M. P. (2019). Twitter sentiment in New York City parks as measure of well-being. *Landscape and Urban Planning*, 189, 235–246.

Key Words: Urban public spaces, COVID-19, Sentiment analysis, Difference-in-Differences

HOUSING CHOICE, LIFE EVENTS, AND LAND USE CONSTRAINTS IN A SMALL TOWN: A SPACE-TIME GIS ANALYSIS APPROACH

Abstract ID: 1613

Individual Paper Submission

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Hägerstrand's (1970) time geography framework provides an integrated space-time system to explore individual movement history within various constraints in a space-time context. In this framework, the spatial dimension presents the locational changes of an individual and the temporal dimension tracks the sequence of events over time (Shaw et al., 2008). Prior studies have applied this space-time path concept in gender and transportation studies (Kwan, 2002), but it can also be applied to form an understanding of people's housing choices, subsequent movement history and their correlation with life events over time, as explored in current housing literature (Clark & Lisowski, 2017). In this study we apply space-time GIS approach to explore how life events and land use constraints within a micropolitan area- Manhattan, Kansas- influence the housing choices that people make over time. Housing and the housing market has been central to many planning discussions due to a housing affordability crisis in the US. The micropolitan area of Manhattan, Kansas is home to some 54,100 residents, 60 percent (approx.) of whom rent. Median household income at \$50,900, is below the national level and a significant share of the renters are cost burdened. To understand the issues around housing suitability, availability and affordability and solutions to those issues, Community Solutions for Affordable Housing project held a series of housing forums in the summer of 2018 and 2019. During these facilitated forums, residents were asked to document their individual housing history in the form of maps and note down life events and constraints which led to the various moves. Based in a sample of some 50 maps, we created space-time paths of housing locations of each of the respondents along with the reasons for their move tagged to the movement paths. Housing types and zoning restrictions were also recorded for each of these locations over time. Space-time prisms (Miller, 2017) created through this approach tell a compelling story of how space-time constraints influence people's housing choices in a micropolitan area. By adding more nuance to the understanding of how life events and planning constraints influence housing choices, this paper contributes to the literature on housing choice and has the potential of influencing state and local policy. Through its focus on a micropolitan area, this paper brings to the fore issues faced by residents of small and medium sized cities in the Midwest when accessing housing, a hitherto largely understudied area in planning. Lastly, through the use of space-time GIS analysis, this paper contributes by adding to the repertoire of planning methods and tools used in the study of housing.

Citations

- Hägerstrand, T. (1970). What about people in Regional Science? Papers of the Regional Science Association, 24(1), 6–21. <https://doi.org/10.1007/BF01936872>
- Clark, W. A. V., & Lisowski, W. (2017). Decisions to move and decisions to stay: Life course events and mobility outcomes. *Housing Studies*, 32(5), 547–565. <https://doi.org/10.1080/02673037.2016.1210100>
- Kwan, M.-P. (2002). Feminist Visualization: Re-envisioning GIS as a Method in Feminist Geographic Research. *Annals of the Association of American Geographers*, 92(4), 645–661. <https://doi.org/10.1111/1467-8306.00309>
- Miller, H. J. (2017). Time Geography and Space–Time Prism. In *International Encyclopedia of Geography* (pp. 1–19). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118786352.wbiego431>
- Shaw, S.-L., Yu, H., & Bombom, L. S. (2008). A Space-Time GIS Approach to Exploring Large Individual-based Spatiotemporal Datasets. *Transactions in GIS*, 12(4), 425–441. <https://doi.org/10.1111/j.1467-9671.2008.01114.x>

Key Words: Space-Time, Housing, Mid and Small sized cities, Analytical Methods

USING DEEP NEURAL NETWORKS FOR CRIME PREDICTION MODELS: LIMITATIONS AND POTENTIALS

Abstract ID: 1702

Individual Paper Submission

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To provide city planners with insights on how to design safe urban environments, this study used deep neural networks to develop a crime prediction model which was based on several neighborhood characteristics. The research setting of this study was Los Angeles, CA, and the units of analysis were city blocks.

The physical and social characteristics of urban environments shape the behavior of people within these settings; therefore, how neighborhoods are designed can be related to life quality. Public safety is also an important issue in urban planning given that fear of crime can deter the use of places in neighborhoods, thereby undermining the overall life quality of the community members.

Given the ubiquity of so-called “big data” and technological advances in modern computing, attempts have been made to develop crime prediction models using a variety of research methods. Compared with other methods, deep neural networks have been outstanding in their performance. Many crime prediction models have used previous crime as a

predictor of future crime. However, since these models tend not to account for the impact of neighborhood features on the incidence of criminal activities (other than prior rates of neighborhood crime and violence), urban planners cannot gain insight into which neighborhood characteristics should be considered in designing safe city streets.

Therefore, to develop a crime prediction model based on the function of the physical and social characteristics of neighborhoods, this study relied upon the following variables as predictors: walkability, the number of consumer-facing businesses, levels of mood, racial/ethnic heterogeneity, average household income, the percentage of homeowners, sex composition (percent men), age composition (percent aged 16–29), and the ambient population. This study addressed limitations in using deep neural networks in developing neighborhood-level crime prediction models and suggested ways to improve model accuracy and practicality.

Citations

- Browning, C. R., Byron, R. A., Calder, C. A., Krivo, L. J., Kwan, M. P., Lee, J. Y., & Peterson, R. D. (2010). Commercial density, residential concentration, and crime: Land use patterns and violence in neighborhood context. *Journal of Research in Crime and Delinquency*, 47(3), 329-357.
- Hipp, J. R., Bates, C., Lichman, M., & Smyth, P. (2019). Using social media to measure temporal ambient population: does it help explain local crime rates?. *Justice Quarterly*, 36(4), 718-748.
- Lee, I., Jung, S., Lee, J., & Macdonald, E. (2019). Street crime prediction model based on the physical characteristics of a streetscape: Analysis of streets in low-rise housing areas in South Korea. *Environment and Planning B: Urban Analytics and City Science*, 46(5), 862-879.
- Kang, H. W., & Kang, H. B. (2017). Prediction of crime occurrence from multi-modal data using deep learning. *PloS one*, 12(4), e0176244.

Key Words: Deep Neural Network, Machine Learning, Crime Prediction, Big Data

MODELING THE RELATIONSHIP BETWEEN URBAN TREE CANOPY, LANDSCAPE HETEROGENEITY, AND LAND SURFACE TEMPERATURE: A MACHINE LEARNING APPROACH

Abstract ID: 1716

Individual Paper Submission

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Cities across the United States and around the globe are embracing urban greening as a strategy for mitigating the effects of rising temperatures on human health and quality-of-life (Bowler et al., 2010). While extreme urban air temperatures have been identified as a leading cause of weather-related deaths (Basu, 2009), studies have also documented associations between lower mortality risk and long-term residential exposure to green space. On the other hand, tree cover and disparities in exposure to heat within U.S. cities (McDonald et al., 2021) demand a more equitable approach to urban greening. Recent studies have demonstrated the importance of considering landscape heterogeneity in estimating the mitigation effects of urban tree canopy (Jung et al., 2021) and studying how the cooling effect of tree canopy varies according to their spatial configuration (Osborne et al., 2019) in addition to the surrounding landscape heterogeneity should help to increase the positive impacts of urban greening. This study applies a machine learning approach (Oukawa et al., 2022) for modeling the relationship between urban tree canopy, landscape heterogeneity, and land surface temperature (LST) using data from nine cities located in nine different climate zones of the United States. We collected summer LST data from the U.S. Geological Survey (USGS) Analysis Ready Data series and processed them to derive mean, minimum, and maximum LST in degrees Fahrenheit for each Census block group within the cities considered. We also calculated the percentage of each block group comprised by the land cover designations in the 2016 or 2019 National Land Cover Database (NLCD) maintained by the USGS, depending on the vintage of the available LST data. High resolution tree canopy data were purchased for all the study cities and the spatial configuration of tree canopy was measured at the block group level using established landscape metrics (Hesselbarth et al., 2019). Landscape metrics of the waterbodies were also calculated to incorporate the cooling effects of waterbodies. The initial modeling approach combined exploratory data analysis with KNN regression and decision tree models to better understand the patterns in the data, then applied a Generalized Boosted Regression Model (GBM) to predict LST from the collected data. Our results show a consistent, but varying contribution of tree canopy coverage and compactness across the study cities. The findings underscore the importance of considering local climate pattern and existing landscape configurations when planning for urban greening.

Citations

- Oukawa, G. Y., Krecl, P., & Targino, A. C. (2022). Fine-scale modeling of the urban heat island: A comparison of multiple linear regression and random forest approaches. *Science of the Total Environment*, 152836.
- McDonald, R. I., Biswas, T., Sachar, C., Housman, I., Boucher, T. M., Balk, D., Nowak, D., Spotswood, E., Stanley, C. K., & Leyk, S. (2021). The tree cover and temperature disparity in US urbanized areas: Quantifying the association with income across 5,723 communities. *PLOS ONE*, 16(4), e0249715. <https://doi.org/10.1371/journal.pone.0249715>
- Jung, M. C., Dyson, K., & Alberti, M. (2021). Urban landscape heterogeneity influences the relationship between tree canopy and land surface temperature. *Urban Forestry & Urban Greening*, 57, 126930. <https://doi.org/10.1016/j.ufug.2020.126930>
- Hesselbarth MH, Sciaini M, With KA, Wiegand K, Nowosad J (2019). landscapemetrics: an open-source R tool to calculate landscape metrics. *Ecography*, 42, 1648-1657.
- Bowler, D. E., Buyung-Ali, L., Knight, T. M., & Pullin, A. S. (2010). Urban greening to cool towns and cities: A systematic review of the empirical evidence. *Landscape and Urban Planning*, 97(3), 147–155. <https://doi.org/10.1016/j.landurbplan.2010.05.006>

Key Words: urban tree canopy, land surface temperature, urban greening, machine learning

TRANSACTIONS COSTS OF CYBERSECURITY GOVERNANCE IN SMART CITY INITIATIVES

Abstract ID: 1747

Individual Paper Submission

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Smart cities are often discussed as sites of improved financial efficiencies for municipal governments (Kitchin, 2014). Given the vulnerability of widespread digital infrastructure to cyberattacks that can paralyze entire urban regions and subsequently, nations, cybersecurity governance in the context of increased digitalization of urban infrastructure is of top concern to municipal governments, private technology providers, and civil society (Andrade et al., 2020; Kitchin, 2014). This research seeks to answer the question: What are the transaction costs associated with developing and implementing cybersecurity governance frameworks such as third-party data trusts in smart cities? Smart city scholarship includes discussions on third-party data trusts as data governance mechanisms (Andrade et al., 2020) and empirically, there are examples of data trusts in practice in Spain and Estonia. Such trusts are forums wherein the interests of municipal governments, private firms, and civil society are negotiated to create data governance protocols that proponents argue ensure accountability (Meijer and Thaens, 2021), adequate responsiveness to matters of cybersecurity and privacy (Andrade et al., 2020), public access to data of public activities (Andrade et al., 2020), and the protection of private commercial interests (Meijer and Thaens, 2021; Kitchin, 2014). This research looks into the transactions costs accrued at these forums which are understudied in the literature and practice given the novelty of third-party data trusts. Transactions costs are external costs associated with project development and execution and often include the financial costs of projects associated with negotiations, contracts, inspections, dispute settlements, and contract change orders (Whittington, 2012).

Existing scholarship on cybersecurity management in smart cities will benefit from research into these transaction costs because smart cities are purported by their scholarly, commercial, civic, and industrial advocates as less financially burdensome to municipal governments (Kitchin, 2014). The results of this research could then be used as part of efforts to estimate the total costs of smart city initiatives and contribute to more robust evaluations of cybersecurity management processes in urban settings.

With respect to wide-ranging cybersecurity disruptions, the treatment of cybersecurity readiness remains at the sector level (Cyber Oversight, 2021). Cybersecurity failures in the financial sector could lead to national or global catastrophes; failures in transportation, energy, healthcare, and logistics could have cascading effects (Cyber Oversight, 2021) akin to those that smart cities may face (Andrade et al., 2020). Andrade et al. (2020) suggest that the traditional cybersecurity management framework warrants adjustments before application to smart cities as the domain of the latter is geographically larger and involves continuous interactions between the aforementioned sectors. This research builds from what Andrade et al. (2020) suggest, which is including how the structure of the interactions between the actors of the various sectors generate transaction costs when navigating their unique cybersecurity concerns in the context of smart city cybersecurity governance.

This research employs a mixed-methods case study-based approach. Using Whittington's (2012) transaction cost evaluation of the design-build project delivery method as a model for the quantitative portion of this research, semi-structured interviews and document analysis will be conducted to gather data about the transaction costs associated with establishing cybersecurity governance frameworks in cities.

The results of this work will contribute to theory development in urban governance and cybersecurity scholarship particularly given the understudied nature of transaction costs associated with third-party data trusts. This is critical

as recent research regarding third-party trusts as technology governance mechanisms suggests that their presence will persist, especially in Europe and the US (Andrade et al., 2020).

Citations

- Cyber Oversight Effectiveness Development: A New Approach for Boards of Directors. Oct. 2021, www.tapestrynetworks.com/sites/default/files/publication_pdf/COED%20-%20June%202021%20-%20FINAL.pdf.
- Kitchen, R. The real-time city? Big data and smart urbanism. *GeoJournal* 79, 1–14 (2014). <https://doi.org/10.1007/s10708-013-9516-8>
- Meijer, Albert & Marcel Thaens (2021) The Dark Side of Public Innovation, *Public Performance & Management Review*, 44:1, 136-154, DOI: 10.1080/15309576.2020.1782954
- R. O. Andrade, S. G. Yoo, L. Tello-Oquendo and I. Ortiz-Garcés, "A Comprehensive Study of the IoT Cybersecurity in Smart Cities," in *IEEE Access*, vol. 8, pp. 228922-228941, 2020, DOI: 10.1109/ACCESS.2020.3046442.
- Whittington, Jan. "When to Partner for Public Infrastructure?" *Journal of the American Planning Association* July 2012: 269–285. Crossref. Web.

Key Words: Smart cities, Critical information infrastructure, Transaction costs, Cybersecurity, Governance

THE DIGITAL GROWTH MACHINE: URBAN CHANGE AND THE IDEOLOGY OF TECHNOLOGY

Abstract ID: 1768

Individual Paper Submission

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We argue that technology sector-led urban growth combines digital accumulation and urban accumulation dynamics to transform urban growth processes and outcomes. This process builds on long-standing growth machine dynamics (Logan & Molotch, 1987) to create a unique and potent urban growth variation: the digital growth machine.

The digital growth machine fosters four related capital accumulation avenues that enable and support its activities: 1) extending long-standing land development and industrial attraction strategies, to promote urban growth and increase exchange values; 2) new possibilities for capturing land-related profit beyond traditional land development and intensification strategies; 3) new opportunities for intermediaries to emerge and profit; and 4) new digital renderings of the city that affect land-related value and perceptions of place. The first process builds on traditional growth machine dynamics in a new industrial context, while the latter three are directly enabled by new digital tools and the digital transformation of urban landscapes, including, for instance, platform urbanism.

By viewing these four avenues together, as interrelated urban growth strategies supported by urban elites, we demonstrate how urban digitization extends—and in so doing, transforms—long-standing growth machine dynamics. Taken together, these processes simultaneously further dynamics of elite control over land that have become deeply entrenched in cities under capitalism, while qualitatively transforming urban life and the role of cities and land in this economic system.

Citations

- Logan, J. R., and Molotch, H. L. 1987. *Urban fortunes: The political economy of place*. Berkeley: The University of California Press.
- Birch, K., & Muniesa, F. (2020). *Assetization: Turning Things Into Assets in Technoscientific Capitalism*. MIT Press.
- Fields, D., & Rogers, D. (2019). Towards a Critical Housing Studies Research Agenda on Platform Real Estate. *Housing, Theory and Society*, 1–23. <https://doi.org/10.1080/14036096.2019.1670724>
- Sadowski, J. (2020a). Cyberspace and cityscapes: On the emergence of platform urbanism. *Urban Geography*, 41(3), 448-452.
- Srnicek, N. (2017). *Platform capitalism*. John Wiley & Sons.

Key Words: growth machine, digital technologies, urban geography, land use intensification, urban change

TECH, EQUITY AND THE CITY: PROMISE AND PITFALLS IN REGULATING, DEPLOYING AND MANAGING TECHNOLOGICAL CHANGE TO PROMOTE EQUITABLE AND EFFICIENT OUTCOMES IN URBAN AREAS

Abstract ID: 1789

Individual Paper Submission

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What technological trends in transportation and land use are the most important and influential in US cities? How are city planners responding to rapid technological changes, and what future challenges will they need to respond to? To what extent do planners' responses to technological trends promise to improve the efficiency of cities, focusing particularly on outcomes for their least advantaged residents? In this study I address this trilogy of research questions by reviewing historical documents, scholarly literature, institutional reports, municipal planning documents, and conference presentations, and by interviewing planners at municipal agencies and nonprofit groups in some of the major metropolitan areas in the US.

Taking an historical approach, the paper discusses bases for many of the disruptive technologies of today, such as the rise of smartphone and GPS technology and high rates of smartphone and data plan ownership across income classes. Relevant technological developments in transportation include app-based ridesharing, bus information systems, point-to-point car sharing, micromobility options such as scooter and bike share systems, and electric and alternative fuel vehicles. The paper also addresses construction and development innovations (e.g., building information management (BIM) systems, construction techniques like modular housing), space-sharing innovations (e.g., Airbnb, WeWork) and innovations in retail, warehousing and freight (e.g., e-commerce trends, rapid warehousing and delivery), though the conference presentation will focus primarily on transportation.

The second part of the paper begins by contextualizing these changes given demographic, economic, workforce, travel and housing trends in the US over the past 20 years, and relating these trends to the technologies discussed in the first part of the paper. It then discusses the planning sector responses to date to these trends, including greater involvement in transit data provision to patrons, regulatory management of intracity freight delivery, public involvement in electrification infrastructure, and municipal charges on private transportation firms, as well as a discussion of existing planning regulations and standards that influence the adoption and use of technology.

The third and final part of the paper evaluates these responses with a focus on equity concerns. Planners, particularly at the municipal level, report efforts to regulate technology in order to positively influence broad social welfare related goals such as road congestion, alternative mode use, accessibility, urban form, and safety. They also report more parochial but highly relevant concerns with the municipal fisc, transit agency ridership and revenue, and parking revenue. In particular, in this section I address which demographic groups are benefiting from the management and regulation of contemporary technologies in transportation and land use, and how; and what could possibly be done to improve technology-related outcomes in the near future, including via the use of technology to facilitate greater levels of participatory planning.

[Note: This paper was accepted for presentation at ACSP in 2021 but I had to withdraw it and did not present.]

Citations

- Dablanc, Laetitia, Genevieve Giuliano, Kevin Holliday, and Thomas O'Brien. 2013. "Best Practices in Urban Freight Management: Lessons from an International Survey." *Transportation Research Record* 2379 (1): 29–38. <https://doi.org/10.3141/2379-04>.
- Gordon, Robert J. 2017. *The Rise and Fall of American Growth*. Princeton, NJ: Princeton University Press.
- Kellerman, Aharon. 2019. *The Internet City: People, Companies, Systems and Vehicles*. Cheltenham, UK?; Northampton, MA, USA: Edward Elgar Pub.
- Li, Sen, Hamidreza Tavafoghi, Kameshwar Poolla, and Pravin Varaiya. 2019. "Regulating TNCs: Should Uber and Lyft Set Their Own Rules?" *Transportation Research Part B: Methodological* 129 (November): 193–225. <https://doi.org/10.1016/j.trb.2019.09.008>.
- Manaugh, Kevin, Madhav G. Badami, and Ahmed M. El-Geneidy. 2015. "Integrating Social Equity into Urban Transportation Planning: A Critical Evaluation of Equity Objectives and Measures in Transportation Plans in North America." *Transport Policy* 37 (January): 167–76. <https://doi.org/10.1016/j.tranpol.2014.09.013>.

Key Words: technology, equity, housing, travel patterns

MEASURES OF BUILT ENVIRONMENT AND RELATIONSHIP TO SOCIAL SATISFACTION

Abstract ID: 1819

Individual Paper Submission

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Individuals with disabilities participation in community life are important to their health, well-being, self-determination, and quality of life. While many individuals with disabilities reside within the communities, they may often not be a part of their community, not of it. Planners and policymakers influence well-being and participation facilitated by community amenities and related land use. To improve the quality of life for people with and without disabilities, we need to measure how well our social, economic, and environmental ecosystems interact with one another.

One of the more understudied aspects of people with disabilities is the interaction of social satisfaction and the built environment –important elements of quality of life. Social satisfaction describes the extent to which individuals feel satisfied with social bonding, interaction, and participation in their community through daily activities. Interestingly, with the diverse and anecdotal knowledge about the linkages between social satisfaction and the built-environment, researchers do not have a firm grasp on the relative influence that land-use, community design, and amenities have on social satisfaction. To address this knowledge gap, the main research question of the study: is there any relationship between the pattern and accessibility of urban amenities with the level of social satisfaction among individuals with disabilities. To answer this question we generate a spatial model to represent the effect of the pattern and accessibility of amenities that describes social satisfaction among individuals with a disability.

Researchers have examined various factors that impact social satisfaction, but no clear association between these factors and social satisfaction has been found. Furthermore, few studies address the level of social satisfaction and community integration of individuals with disabilities with their surrounding environment. There is evidence that social satisfaction is associated with the (spatial pattern of) built environment, personal characteristics, and social elements. For instance, a supportive environment is an essential contributor that plays a critical role in improving social satisfaction. Among environmental factors, the spatial pattern of urban amenities can influence social satisfaction but has been disregarded in literature and instead aggregated into broader economic assessments. Studies have demonstrated that living close to urban amenities, including shops, cafes and restaurants, schools, public transport, and public spaces, increases satisfaction. Studies that attempt to evaluate social satisfaction have focused primarily on subjective measures, both quantitative and qualitative.

Here we propose a mixed-method approach that combines a subjective evaluation of social satisfaction paired with a spatially explicit objective model. The model evaluates accessibility to urban amenities and environmental factors that influence social satisfaction ratings. To elucidate the relationship between urban amenities and social satisfaction, we defined spatial criteria and metrics based on the literature review within various spatial units (e.g. block groups, blocks and a continuous grid) in the greater Salt Lake MPO. We explored several different metrics for the model: 1) density of urban amenities within a service area buffer, 2) diversity of urban amenities within the area unit, 3) mixedness of urban amenities and residential area, and 4) average proximity of urban amenities to origins. We used the NHTS survey results of daily person miles of travel per person by trip purpose and mode of transportation to determine the driving and transit distance. We conducted a correlation analysis to identify the relationship between the level of social satisfaction (from a survey) and the model results (ArcGIS), as well as between different models themselves. Not all correlations were high, and varied by proximity to different amenities (e.g. places of education, outdoor recreation, restaurants). Results contribute to ongoing evaluation of social satisfaction, particularly for comparing the role the built environment has on social satisfaction for people with and without disabilities.

Citations

- Cao, J., Hao, Z., Yang, J., Yin, J., & Huang, X. (2020). Prioritizing neighborhood attributes to enhance neighborhood satisfaction: An impact asymmetry analysis. *Cities*, 105, 102854. <https://doi.org/10.1016/j.cities.2020.102854>
- Grogan-Kaylor, A., Woolley, M., Mowbray, C., Reischl, T. M., Gilster, M., Karb, R., Macfarlane, P., Gant, L., & Alaimo, K. (2006). Predictors of Neighborhood Satisfaction. *Journal of Community Practice*, 14(4), 27–50. https://doi.org/10.1300/J125v14n04_03
- Lee, S. M., Conway, T. L., Frank, L. D., Saelens, B. E., Cain, K. L., & Sallis, J. F. (2017). The Relation of Perceived and Objective Environment Attributes to Neighborhood Satisfaction. *Environment and Behavior*, 49(2), 136–160. <https://doi.org/10.1177/0013916515623823>
- Hur, M., & Morrow-Jones, H. (2008). Factors That Influence Residents' Satisfaction With Neighborhoods. *Environment and Behavior*, 40(5), 619–635. <https://doi.org/10.1177/0013916507307483>

- Mouratidis, K. (2020). Neighborhood characteristics, neighborhood satisfaction, and well-being: The links with neighborhood deprivation. *Land Use Policy*, 99, 104886. <https://doi.org/10.1016/j.landusepol.2020.104886>

Key Words: social satisfaction, individuals with disabilities, urban amenities

A GRAVITY MODEL TO ASSESSING THE COST OF SHIFTING TO A SEISMIC RESISTANT CITY

Abstract ID: 1827

Individual Paper Submission

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In natural hazard management, there have been two well-known mitigation approaches: (1) mitigation theory, by enhancing building resistance through a strict building code, and (2) avoidance theory, by allocating future activities away from hazardous locations (Fulton and Shigley, 2005). While the approach of applying a strict building code (i.e. mitigation theory) has been widely used to deal with seismic hazards, especially from the perspective of seismic engineering, planners prefer the avoidance theory by looking at the allocation of future land uses and public infrastructure investments that would guide new developments away from hazardous locations. In this case, land-use planning could be used as a seismic mitigation tool (Burby et al., 1999) to serve for this purpose. For instance, Wang and Guldmann (2015) developed an optimization modeling framework embedded with an estimated statistical model to prioritize locations for future activities that would minimize aggregate seismic damages for a city.

Along this line, Wang (2020) used the estimated statistical model to simulate seismic damage under four spatial structure scenarios and reported that a polycentric-compact urban form might be the most seismic resistant for the city. The results also revealed that the current city center is essentially seismic vulnerable, and therefore moving the city core away from the seismic hazardous location is, of course, a must for the city. However, it is not clear at what costs it will take to implement all the required mitigation measures (land-use allocation and transportation investments) for the shifting. To fill up this gap, this study aims to (1) find out the most seismic resistant location for Taichung, Taiwan, using an optimization modeling approach; (2) to reshape the city to be seismic resilient by moving the city core to the most seismic resistant location through the means of land-use and transportation planning; and (3) to improve the understanding of how much effort in land-use limits and transportation investments is required to make the shifting take place and how long it will take to complete the process.

Methodologically, a statistical model for seismic damage will be first estimated using simulation data. This seismic damage model will be incorporated into an optimization modeling framework as a constraint. The objective function is to minimize the total seismic damage by reallocating all existing developments away from hazardous locations. Solving this model will reveal the most seismic resistant locations across the city. Urban development involves in local economies, transportation and physical limitation, and therefore a gravity model can be used to understand how much proposed mitigation measures can help reshape the city in a simulation. Three scenarios are considered: (1) business as usual, (2) land-use mitigation plan, and (3) transportation investments together with the planned land-use allocation. TELUM (Transportation, Economic, and Land-Use Model) is selected to simulate for the three scenarios. TELUM, a GIS based system successor of DRAM/EMPAL model, has been widely used for numerous cities in the world, particularly on the relationship between transportation network changes and the resulted land-use allocation for economic activities (Casper et al., 2009).

This study aims to mitigate seismic impacts in an active manner by shifting the city core away hazardous locations with necessary land-use and transportation measures. The approach of using a gravity model in the reverse direction is rare in past literature. The research framework in this study could be extremely important, not only because of its application to seismically hazardous areas, but also to those which may be subjected to flooding, landslides, droughts, or wildfires. The findings would shed light on how planners can help their cities adapt to or cope with these natural hazards through land-use and transportation planning.

Citations

- Burby RJ, Beatley T, Berke PR, et al. (1999) Unleashing the power of planning to create disasterresistant communities. *Journal of the American Planning Association* 65(3): 247–258.
- Casper, C. T., O'Brien, J., Lupa, M. R., Dimitrijevic, B., de Araujo, M. P., 2009. Application of TELUM by the Pikes Peak, Colorado, Area Council of Governments, *Transportation Research Record*, 2119, 45–53.
- Fulton, W. and Shigley, P. (2005) *Guide to California Planning*, 3rd Edition, Solano Press.
- Wang, C-H. (2020) Does Compact Development Promote a Seismic-Resistant City? Application of Seismic-Damage Statistical Models to Taichung, Taiwan. *Environment and Planning B*, 47 (1): 84-101.

- Wang, C-H. and Guldmann, J-M. (2015) A Land-Use Allocation Optimization Model to Mitigate Potential Seismic Damages. *Environment and Planning B* 42 (4): 730-753.

Key Words: resilience, seismic hazard, urban model, land-use planning, transportation

QUANTIFYING THE TRADEOFFS OF SUBURBAN STREET NETWORK RETROFITS

Abstract ID: 1839

Individual Paper Submission

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The United States largely depends on the automobile for personal transportation. For instance, 85% of commuting trips were made by car in 2019 (Burrows et al., 2021). This dominance has significant consequence for society over a range of issues, including the environment, public safety, public health, and equity. It is also the result of several policy and, importantly, infrastructure policy decisions. These policy choices impact the full spectrum of urban typologies of US cities from the most urban to the most exurban. For example, cars are allocated most roadway space even in the most urban areas even though walking or biking are reasonable choices for the short trips that characterize many of the trips in these places (Federal Highway Administration, 2017). Car dependency, however, is most evident in the suburbs where there is no alternative to automobile usage. Federal policy in the postwar era led to the widespread use of car-oriented hierarchical street networks with topological barriers that disadvantage walking, biking, and transit usage (Southworth & Ben-Joseph, 1995). Moreover, the issues associated with the dominance of the automobile are most pressing in the suburbs: most of the US's population lives in suburbs while a spatial inversion of wealth patterns has seen poverty begin to concentrate in them as well (Parker et al., 2018). Any effort to address the negative consequences of automobile dependency in the US needs to consider retrofitting the suburbs and their street networks.

Therefore, we attempt to better understand the feasibility, costs, and tradeoffs of a systematic effort to retrofit a hierarchical, car oriented, street network with passages that make the network suitable to walking, biking, and transit. We consider a class of optimization problems similar to those discussed in (Brelsford et al., 2019) that attempt to maximize access—for walking biking or transit—to points of interest (POIs) within the study area by adding new edges to the street network. The constraints we define for these problems attempt to account for the built environment. In particular, we constrain our solution space by considering topography, property lines, property values, and the locations of existing buildings. We then apply our methodology to multiple suburban areas of varying ages, geographies, densities, and sociodemographic characteristics. We find that such street network retrofits can meaningfully increase access to POIs by walking, biking, and transit in several circumstances, thereby removing one obstacle against reducing suburban car dependency. Given their promise, we believe the methods we outline could present a useful starting point for discussing the potential of street network retrofits in suburban communities across the US.

Citations

- Brelsford, C., Martin, T., & Bettencourt, L. M. A. (2019). Optimal reblocking as a practical tool for neighborhood development. *Environment and Planning B: Urban Analytics and City Science*, 46(2), 303–321. <https://doi.org/10.1177/2399808317712715>
- Burrows, M., Burd, C., & McKenzie, B. (2021). Commuting by Public Transportation in the United States: 2019 (Vol. 0802, Issue April). www.census.gov/programs-surveys/acs/methodology
- Federal Highway Administration. (2017). 2017 National Household Travel Survey. Department of Transportation. <https://nhts.ornl.gov>
- Parker, K., Horowitz, J., Brown, A., Fry, R., Cohn, D., & Igielnik, R. (2018). What unites and divides urban, suburban and rural communities. Pew Research Center, May, 1–90. <https://www.pewsocialtrends.org/2018/05/22/what-unites-and-divides-urban-suburban-and-rural-communities/>
- Southworth, M., & Ben-Joseph, E. (1995). Street standards and the shaping of suburbia. *Journal of the American Planning Association*, 61(1), 65–81. <https://doi.org/10.1080/01944369508975620>

Key Words: street networks, urban informatics, walkability, access, suburbia

PLACEMAKING AS AN INTERMEDIARY FOR ENVIRONMENTAL SENSING

Abstract ID: 1854

Individual Paper Submission

Deployment of environmental sensors has proliferated as a part of the Smart Cities paradigm of planning and development. The data collected by environmental sensing can be used to address critical urban issues, including community health and environmental justice. However, even when linked to government policies and social objectives, the integration of sensors, networks, and large-scale analytics tends to reinforce control from the top-down by establishing one-way systems of data collection and keeping the technologies at play largely invisible and unaccountable to citizens and their communities (Houston, Gabrys, and Pritchard 2019). Therefore, community discomfort with sensors and analytics is a significant issue, including high profile cases such as opposition to Sidewalk Labs' Quayside project in Toronto and more widespread skepticism of the intentions and value of urban sensing (Flynn & Valverde, 2019; Mondschein et al., 2019). Overall, sensor-based data collection remains difficult to integrate into community-centered practice, in part because the technologies of sensing and the use of data remain invisible and potentially alienating to communities. While movements towards the democratization of data suggest that bottom-up efforts can address some of the skepticism around urban sensing, sensors and the data collected by them remain fundamentally invisible or illegible within the urban environment they are meant to address. Creative placemaking practices posit that art and cultural practices can activate public spaces, facilitating community engagement and meaning creation through design (Markusen and Gadwa, 2010). If a placemaking is to address matters of distrust in sites of contention, each step of the process must be undertaken with significant engagement, from the beginning of the process through implementation. We hypothesize that the invisibility of environmental sensing may be addressed through engaged creative placemaking practices that make technological systems, and data itself, visible and responsive within public space.

This paper presents a case study of "Networked Public Space" (NPS), an integrated system of open-source environmental sensing technologies, creative placemaking, and community engagement strategies. NPS seeks to make urban environmental data more accessible, meaningful, and actionable for local communities by emphasizing the visible, responsive manifestations of environmental data and data collection technologies in the built environment and online. We present the results of a technological and design development process that have established interconnected sensing, public space design, and engagement practices in Shockoe Bottom, a community seeking pathways to social and environmental justice in Richmond, Virginia. Shockoe Bottom includes the streets and lots under Interstate 95 adjacent to a historic rail station and a new bus rapid transit hub under the highway. While largely unmeasured until this project, the Shockoe faces significant air and noise exposures, varying over space and time, to which multiple populations, including transit users and residents, are exposed. Furthermore, like many sites adjacent to urban highways, this is a location of historic injustice in the name of urban renewal, as well as a site of enslavement only recently being recognized by the city. Working with community stakeholders, NPS has deployed tactical and ongoing installations that not only measure pollution but re-present those data in art/architectural installations in public space and online. We find that integrating environmental data and analysis into placemaking through responsive design can increase the visibility of environmental issues to a population beyond technologists and planners and demystify the use of technology in public spaces. However, integrating open-source technologies into planned public spaces raises significant questions around ownership and permanence of technological placemaking. These questions require further analysis of how networked public spaces should manifest across communities of varied settings, demographics, and demands.

Citations

- Flynn, Alexandra, and Mariana Valverde. (2019). "Planning on the Waterfront: Setting the Agenda for Toronto's 'Smart City Project.'" *Planning Theory & Practice* 20, no. 5 (October 20, 2019): 769–75.
- Houston L, Gabrys J, Pritchard H. (2019). Breakdown in the Smart City: Exploring Workarounds with Urban-sensing Practices and Technologies. *Science, Technology, & Human Values*. 44(5):843-870.
- Markusen, A. and Gadwa, A. (2010). *Creative placemaking*. National Endowment for the Arts Washington, DC.
- Mondschein, Andrew, Zihao Zhang, and Mona El Khafif. (2019). "Community-Centered Urban Sensing: Smart, Engaged Planning and Design in a Dysfunctional Urban Context." *International Journal of E-Planning Research* 8, no. 4.

Key Words: public space, environmental sensing, placemaking, community engagement

DIFFERENCES IN BROADBAND ADOPTION: INDIVIDUAL AND COMMUNITY IMPACTS ON SMARTPHONE DEPENDENCY AND UNIVERSAL CONNECTIVITY

Abstract ID: 1865

Individual Paper Submission

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Digital inequality is the latest layer in the 20th Century's web of social, cultural, and economic exclusions. The impacts of digital inequalities became more severe during the COVID-19 pandemic. Some workers and students were able to successfully transition to remote settings, while others endured increasingly dangerous conditions in person. This dichotomy emphasizes who is able to take advantage of the opportunities afforded by universal broadband access and those who have remained locked out. The diffusion of internet and communication technologies (ICT) has followed previous patterns of exclusion due to the high costs of implementation, subscriptions for fixed and mobile broadband access, and the necessary devices. In addition to the gap in material access, the compounding forces of exclusion impact the ability to gain the skills necessary and the usage opportunities of ICT to increase educational, employment, and economic outcomes.

Some policymakers and researchers see the adoption of a smartphone and a mobile data plan as gaining access. But, relying solely on a mobile device does not offer the same opportunities as a stable, fixed connection and more robust abilities of a desktop computer. In this paper I add necessary granularity to previous literature, moving past the binary lens of the digital divide to include those who are smartphone dependent. Differentiating between universal connectivity and smartphone dependency, policymakers can better address the different needs of unconnected or under connected urban and rural residents.

To better understand how categorical and opportunity divisions impact the likelihood of a resident's ability to adopt ICT technologies, I examine how ongoing forms of exclusion based on race, gender, and immigration status impact the adoption of broadband in Los Angeles County. Using the 2019 American Community Survey (5 year estimates) public use microdata sample, I develop a logistic regression model that incorporates individual and community-level factors. Preliminary findings indicate that there is a polarity between those who have universal connectivity versus those who are smartphone dependent. Wealthier, more educated, English speaking white residents are nearly unanimously universally connected. Inversely residents of color, with lower incomes, with less than a college education, who may speak a language other than english at home or not speak english at all are increasingly smartphone dependent. Furthermore, a spatial analysis was conducted to demonstrate the impacts of community-level factors and visualize the concentration of exclusionary factors across the county.

The analyses utilized in this study portrays where there is a greater level of disparity in access to ICT. By measuring and visualizing the interactions between digital and ongoing forms of exclusion across space, a more holistic approach to policy making and implementation can be taken to inform future interventions addressing the gaps in resources necessary to use ICT and the opportunities to harness the benefits of adoption.

Citations

- Mossberger, Karen, Caroline Tolbert, and William W. Franko. Digital cities. New York, NY: Oxford University Press, 2013.
- Robinson, Laura, et al. "Digital Inequalities and Why They Matter." *Information, Communication & Society*, vol. 18, no. 5, May 2015, pp. 569–82. Taylor and Francis+NEJM, <https://doi.org/10.1080/1369118X.2015.1012532>.
- van Dijk, Jan, and Kenneth Hacker. "The Digital Divide as a Complex and Dynamic Phenomenon." *The Information Society*, vol. 19, no. 4, Sept. 2003, pp. 315–26. DOI.org (Crossref), <https://doi.org/10.1080/01972240309487>.
- Kvasny, Lynette. "Cultural (Re)Production of Digital Inequality in a US Community Technology Initiative." *Information, Communication & Society*, vol. 9, no. 2, Apr. 2006, pp. 160–81. Taylor and Francis+NEJM, <https://doi.org/10.1080/13691180600630740>.
- Mesch, Gustavo S., and Ilan Talmud. "Ethnic Differences in Internet Access." *Information, Communication & Society*, vol. 14, no. 4, June 2011, pp. 445–71. Taylor and Francis+NEJM, <https://doi.org/10.1080/1369118X.2011.562218>.

Key Words: universal connectivity, smartphone dependent, broadband access, digital inequality, exclusion

THE REGULATION OF INFORMAL WORK IN MEXICO CITY AND SAN FRANCISCO: ANALYZING RECENT SHIFTS IN GOVERNANCE STRUCTURES

Abstract ID: 1905

Individual Paper Submission

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How do shifts in urban governance modify the urban order? In this paper, I will examine how street vendors, street level bureaucrats, and local politicians negotiate over the use of public space by analyzing: 1) the current changes in political institutions in Mexico City, and 2) the impact of new data infrastructures on the regulation of public space in both Mexico City and San Francisco.

Across the globe, informal work is on the rise. From day-laborers, waste-pickers, and street vendors to sex-workers, transportation drivers, and domestic workers, these marginalized groups are increasingly impacting the use and governance of public space in cities. While scholarship of informal politics has long been in place in cities of the global south (Cross, 1998), the increasing number of informal workers in the global north is becoming more prevalent due to increasing entry-barriers to jobs that are secure, well-remunerated, and provide health benefits due to increasing migration, education credentialism, and city densification. For this reason, contrasting Mexico City and San Francisco can elucidate how new forms of organization and resistance strategies of informal workers in the global north can learn from organizing strategies in cities of the global south (Devlin, 2018). In particular, both geographies have worked on city-level open-data portals promoting enumeration efforts that function both as artifacts of recognition and visibility of workers as well as instruments of state surveillance (Scott, 1999) which bring up questions of forbearance of informal workers (Holland, 2017).

Shifts in governance structures are particularly visible for street vendors because they rely on using highly-trafficked and touristic spaces, distributing goods and services in cities (Cross, 1998). While their visibility renders greater political leverage than other informal workers, it also creates greater tensions with powerful vested interests that want to make use of cities' public spaces. In terms of the management of public space, the study of street vendors elucidates the use of discretionary power, revealing the tensions between legal authority and the legitimacy of the state (Davis, 2018).

In this paper, first, I examine how much recent shifts of political institutions have changed street vendors' strategies in negotiating for public space in Mexico City by analyzing how the city's development programs priorities have changed over time. Second, I delineate the political and social implications of carrying out an enumeration of workers through an open-data portal in Mexico City and San Francisco. In the case of Mexico City, I analyze documents created by vendor organizations to analyze how new data infrastructures impact the political struggle of local politicians and street vendors alike. In contrast, San Francisco has an established open-data portal that make visible other types of informal workers (e.g., sex-workers), although under a context of criminalization. This comparative case allows me to understand forbearance structures of informal workers, how organizational structures of the global south could inform regulation processes in the north, and which mechanisms are in place for street vendors to remain in space in certain areas of cities.

Citations

- Cross, J. C. (1998). *Informal Politics: Street Vendors and the State in Mexico City*. Stanford University Press.
- Davis, D. (2018). Reflections on "The Politics of Informality": What We Know, How We Got There, and Where We Might Head Next. *Studies in Comparative International Development*, 53(3), 365–378. <https://doi.org/10.1007/s12116-018-9273-2>
- Devlin, R. T. (2018). Asking 'Third World questions' of First World informality: Using Southern theory to parse needs from desires in an analysis of informal urbanism of the global North. *Planning Theory*, 17(4), 568–587. <https://doi.org/10.1177/1473095217737347>
- Holland, A. C. (2017). *Forbearance as Redistribution: The Politics of Informal Welfare in Latin America*. Cambridge University Press.
- Scott, J. (1999). *Seeing Like a State*. Yale University Press.

Key Words: street vendors, informality, governance, organization, data infrastructures

SCOOTER-SHARE TRAVEL DEMAND FORECAST: A CONTEXT-AWARE LSTM RECURRENT NEURAL NETWORK APPROACH

Abstract ID: 1917

Individual Paper Submission

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Shared micromobility, including dockless bike-share and scooter-share, has been popular in many cities in the U.S. Due to its small vehicle size and flexible on-demand riding style, it is considered a viable low-carbon transportation alternative to satisfy people's short-travel demand. Research has shown that shared micromobility trips mostly cluster in downtown areas where there are recreational facilities and shopping stores and on university campuses where students live and study. In addition, researchers have pointed out the possibility of a tight connection between shared micromobility travel demand and economic activities. Following this idea, this study builds a context-aware long-short term memory (CALSTM) recurrent neural network to forecast the daily travel demand for scooter-share in Austin, Texas. The CALSTM model considers the historical visit frequency of points-of-interest (POI) near a scooter-trip destination as well as the weather on a particular day in order to improve the prediction accuracy. By comparing the CALSTM model result with the naïve LSTM model without the consideration of POI visit frequency and the

baseline ARIMA model, this study demonstrates the power of deep learning models for scooter-share travel demand prediction and the importance of including economic activity characters in the model. The result of this study could serve as valuable guidance for transportation planning projects aiming at promoting shared micromobility in cities by predicting high-demand areas based on local economic activity patterns.

Citations

- Bai, S., & Jiao, J. (2020). Dockless E-scooter usage patterns and urban built Environments: A comparison study of Austin, TX, and Minneapolis, MN. *Travel Behaviour and Society*, 20, 264–272. <https://doi.org/10.1016/j.tbs.2020.04.005>
- Bai, S., Jiao, J., Chen, Y., & Guo, J. (2021). The relationship between E-scooter travels and daily leisure activities in Austin, Texas. *Transportation Research Part D: Transport and Environment*, 95, 102844. <https://doi.org/10.1016/j.trd.2021.102844>
- Bai, S., & Jiao, J. (2021). Using Deep Learning to Understand Travel Demands in Different Urban Districts. *Transportation Research Record*, 1-12. <https://doi.org/10.1177/0361198121994582>
- Hopkins, D. (2017). Destabilising automobility? The emergent mobilities of generation Y. *Ambio*, 46(3), 371–383. <https://doi.org/10.1007/s13280-016-0841-2>

Key Words: Shared Micromobility, Travel Demand, Economic Activities, Deep Learning

WHEN CAUSALITY INFERENCE MEETS SPATIOTEMPORAL HETEROGENEITY: A SPATIALLY INTERRUPTED TIME-SERIES ANALYSIS ON COVID-19'S IMPACTS ON MOBILITY CHANGE BY CELLPHONE BIG DATA

Abstract ID: 1918

Individual Paper Submission

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Although there has been a growing interest in causal inference in planning research, only a few studies have incorporated spatiotemporal heterogeneities with causalities, so do the emerging research examining spatial and/or temporal variations in COVID-19's impacts during the early stage of the pandemic. Causally estimating spatiotemporal heterogeneity in non-pharmaceutical interventions' (NPIs) treatment effects is important, because it helps policymakers determine when and where to implement which policies to mediate the mobility and the spread of the pandemic, and identify potential disparities in health risks and unequal burdens for less adaptive spatial contexts. Nevertheless, most existing studies have focused on variations in mobility outcomes or associations and not on causalities, especially in finer-grained spatial and temporal resolutions. Therefore, this study aims to conceptualize a novel framework to comprehend and measure different patterns of spatiotemporal heterogeneity in the causal effects of policy interventions, and apply it to precisely assess how the treatment effects of mobility control policies at the early stage of the COVID-19 outbreak vary across neighborhoods day by day.

This study relies on a dataset of neighborhood-based mobility levels lasting for 145 days from October 2019 to February 2020, which is extracted from a large set of mobile phone signaling data in Shenzhen, China which contains above 500 million individual mobility trajectories of 13 million users. We developed a spatially interrupted time-series (SITS) quasi-experimental design for the policy evaluation of two mobility control interventions, i.e., the first-level response to public health emergencies (FLR) and closed-off management of residential communities (COM), and how the policy effects vary across neighborhoods with different built environment and socioeconomic contexts over time. The SITS design incorporates spatial contextual effects with temporal heterogeneities into causal inference, which is regarded as a methodological innovation compared to traditional spatial modeling that aims to identify correlations and causality inference methods that lack a heterogeneity analysis.

The modeling results reveal significant temporal, spatial, and spatiotemporal heterogeneities in the policies' causal effects. For example, we observed an abrupt decrease of 2.8 km in travel distance as a result the FLR, and a decrease of 0.5 km as a result of the COM, accounting for 44.6% and 7.2% of the baseline level before the pandemic, respectively. Such mobility-reduction effects decayed at a rate of 0.033 km per day after the FLR and 0.076 km per day after the COM. For both policies, the abrupt effects were significantly larger in neighborhoods with a higher residential density and land use mixture, lower average age, and higher income and marriage rate, whereas the gradual effect of the FLR decayed faster in similar compact neighborhoods. These findings demonstrate the importance of incorporating spatiotemporal variations with causality inference for fine-grained policy assessments, which can help policymakers determine when and where to implement which policies to mediate the mobility and the spread of the pandemic. This study also provides recommendation of keep advocating compact and diverse forms of urban development for planning resilient neighborhoods in the postpandemic era, because they are more likely to

achieve favorable health conditions by being adaptive to mobility changes.

Citations

- Akbari, K., Winter, S., & Tomko, M. (2021). Spatial Causality: A Systematic Review on Spatial Causal Inference. *Geographical Analysis*.
- Bernal, J. L., Cummins, S., & Gasparrini, A. (2017). Interrupted time series regression for the evaluation of public health interventions: a tutorial. *International journal of epidemiology*, 46(1), 348-355.
- Jay, J., Bor, J., Nsoesie, E. O., Lipson, S. K., & Raifman, J. (2020). Neighbourhood income and physical distancing during the covid-19 pandemic in the United States. *Nature Human Behaviour*, 4(12), 1-9.
- Lee, C., Newman, G., Jourdan, D., Ye, X., & Zandt, S. V. (2022). Natural Experiments in Planning Research. *Journal of Planning Education and Research*, 42(1), 6-8.

Key Words: Spatiotemporal causality inference, Human mobility, COVID-19 pandemic, Neighborhood planning, Interrupted time series (ITS) design

ELUENT: AN ECONOMIC DEVELOPMENT AND POLICY-PLAN MAKING PSS FOR CITIES AND REGIONS

Abstract ID: 1953

Individual Paper Submission

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To some estimates, 83% of the US population lives in urban areas¹. Cities in the United States constitute these areas, forming our urbanized regions. According to the Bureau of Census, there are 384 metropolitan statistical areas and 543 micropolitan statistical areas in the United States². The cities in these dynamic metro and micro areas deal with ongoing social and economic changes and prepare and implement plans and policies to enhance economic development in the area and accommodate the demographic and employment changes. While most of these efforts are undertaken at city levels, an overlooked point is that a city in the US is a creature of the state, a political jurisdiction to which economic waves and forces are blind. As a result, the effectiveness of these economic development policies and planning efforts is questionable. The persistence of social equity problems in poverty-stricken areas with overwhelming minority populations in so many cities is the evidence. At the same time, strategies of different nature have been implemented sometimes for decades. Considering all the related information beyond a city boundary was not entirely possible until recently. However, the technological and theoretical advancements of the last few decades in big data, GIS, urban analysis, visualization, etc., have made the setting ready for new ways of dealing with old problems.

This paper presents a planning and support system (PSS), ELUENT, that helps with many problems of this nature in urban areas. It utilizes all the relevant information that facilitates the analyses and processes urban-related institutions need to go through for various developmental objectives in the city, a larger subregion, or regional levels. ELUENT considers social, economic, and political considerations when preparing plans or socio-demographic analyses for various policymaking purposes. Its open framework can be tailored to different settings and helps economic development, comprehensive plan-making, and policy decisions of all types at the local, city, county, or regional levels. It introduces innovative approaches to planning an urban area—including a variant of a geographic information system-based land-use and environmental suitability analysis in deriving development potential for small zones or cell grids of the study area. This approach enables public and stakeholder input into the process, facilitating micro-level consideration of different attributes of economic activities and demographic changes in the analysis along with the related land uses and social dimensions. It also includes the effects of future developments on the environment, economic development, stakeholders' input, ease of use for decision-makers, and better integration with other regional planning efforts and MPO's transportation planning process.

These features allow the planning process to be open to human interaction, making it possible to input social and political aspects and decisions into the easy-to-work structure. The input is accomplished by including and participating representatives of the decision-making bodies, stakeholders, and the public in various aspects of the planning process to elicit their information and intimate local knowledge in this critical step and continue during the necessary land-use activity allocation process. This inclusiveness would involve multiple voices during the process from the outset, making it more open and understandable to the public and the decision-makers avoiding later surprises when the results become public. Such information is critical in decision-making, economic development, land-use planning, and resource allocation, which helps achieve results in line with stakeholders' development perceptions, local economic activities, and jurisdictional plans and visions. Furthermore, this input allows the derivation of development potentials in the suitability stage and the more critical land-use activity allocation process, which helps allot commercial and economic activities and households to their most appropriate locations, thus facilitating social equity problems.

Citations

1. Anjomani, A. An Integrated Land Use/Transportation Forecasting and Planning Model: A Metropolitan Planning Support System. *Journal of Transportation and Land Use*, Vol. 14 No. 1, pp. 1 – 21. 2021.
2. Klosterman, R., Brooks, K., Drucker, J., Feser, E., & Renski, H. (2018). *Planning Support Methods*. Savage, MD: Rowman & Littlefield Publishers.
3. Lowry, I. S. (1964). *A model of Metropolis*. RM-4035-RC. Santa Monica, CA: Rand Corporation.
4. Waddell, P. (2002). UrbanSim: Modeling urban development for land use, transportation and environmental planning. *Journal of the American Planning Association*, 68(3), pp. 297–314.
5. Wegener, M. (2014). Land-use transport interaction models. In *Handbook of Regional Science*, edited by M. Fischer and P. Nijkamp. Berlin: Springer.

Key Words: Economic Development, Demographic analysis and forecasting, City and Regional Planning, Planning Support System, GIS

CHOOSING SPATIAL WEIGHTS AND SPATIAL SCALES IN LOCAL STATISTICAL ANALYSES

Abstract ID: 1971

Individual Paper Submission

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Local spatial statistics are used to measure and test for spatial association in some variable of interest, and to measure and test for clustering around predefined locations. Local Moran's I (1995), the Getis-Ord statistic (1995), and the score test are examples of local (or focused) tests.

Such statistics require that a neighborhood be defined around the location of interest. This is done by specifying weights for surrounding points or regions, where higher values for weights indicate a relatively stronger connection to the focal locations. Specification of the weights is therefore tantamount to specification of the spatial scale at which the local association or clustering is measured and/or tested.

In practice, weights are usually assigned exogenously, with little thought given to their definition. This implies a spatial scale that may or may not be the best one to evaluate the variable under study – perhaps the actual scale of association or clustering is one that is smaller or larger than that implied through the definition of binary adjacency.

Local statistics are most likely to be significant (i.e., have their greatest statistical power) when the weights are chosen to match the spatial extent of the actual association or clustering. In this paper, I focus upon assessing the magnitude of the “cost” of misspecifying the weights. The cost is measured in terms of loss of statistical power – it is more difficult to reject false null hypotheses when the weights are poorly chosen. Furthermore, I show here that it better to overestimate the region of influence around a particular location than it is to underestimate the spatial extent of influence.

Because the actual spatial scale of association or clustering is almost always unknown, an attractive alternative strategy is to try different sets of weights, corresponding to different spatial scales. This is in fact how several local tests work – the statistic is derived at several spatial scales, and the significance of the maximum local statistic is assessed, taking into account the multiple hypothesis testing that occurs across scales. It is common to carry out such assessments using Monte Carlo simulation. But there are statistical tests that allow for examination of some local statistics across multiple spatial scales (Rogerson 200x)

These tests avoid the need for simulation. But here too, choices must still be made regarding the number of spatial scales examined. Looking at many spatial scales will cover the possibility of possible significance at any scale, but the price to be paid is in terms of the reduced statistical power associated with the multiple testing. In this paper, I examine the relative likelihoods of finding spatial clusters, given various choices made for the range of spatial scales examined. This assessment leads to specific recommendations for implementation of these tests and it therefore has direct relevance for the analyses that are carried out in planning applications. If there is uncertainty regarding the scale of the process, there is little cost in examining large spatial scales. Gains in the power to detect significant clustering may be had if the examination of cluster sizes that are clearly too small may be omitted.

Citations

- Anselin, L. (1995) Local indicators of spatial association – LISA. *Geographical Analysis* 27: 93-115.
- Getis, A. and K. Ord. (1995) Local spatial autocorrelation statistics: distributional issues and an application. *Geographical Analysis* 27: 286-306.

- Rogerson, P. (2011). Optimal geographic scales for local spatial statistics. *Statistical Methods in Medical Research* 20: 119-129.

Key Words: spatial scale, local spatial autocorrelation

CALIBRATING DAILY TRAVEL PATTERNS OF MILLENNIALS: THE DIFFERENCE IN TIME INTERVALS OF COMMUTING AND NON-COMMUTING TRIP

Abstract ID: 1980

Individual Paper Submission

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Millennials refer to the generation born in the 1980s to the mid-1990s, and have social characteristics that allow for diversity and a strong will for self-actualization. They are important from an urban planning point of view because they tend to travel less compared to previous generations, own fewer cars, and use alternative modes (Garikapati, Pendyala, Morris, Mokhtarian, & McDonald, 2016). For this reason, they place higher value on urban amenities such as leisure, shopping, and public transport in the metropolitan area (Deka, 2018; Ralph, Voulgaris, Taylor, Blumenberg, & Brown, 2016). Previous research on the travel habits of millennials shed more light on Vehicle Mile Traveled (VMT) commuting and non-commuting trips (Ding, Liu, Zhang, Yang, & Wang, 2017; Jun, Choi, Wen, & Kwon). However, since these generations are experts in using smartphones, they can easily access traffic information and use various transport modes such as personal mobilities. Thus, we need to delve into comprehensive forms of trips, and not just vehicle use.

This study aims to examine the change between each time interval in the average travel time of millennials between commuting travel and non-commuting travel in terms of comprehensive travel modes and attempt to identify the built environment features of their neighborhoods and workplace, such as mixed land use, transit accessibility, and business density. To highlight the difference between each time interval by separating commute and non-commuting travel, quantile regression analysis was applied to each model by dividing the average travel time for a one-way trip into four time intervals: 1) less than 20 minutes, 2) more than 20 minutes and less than 40 minutes, 3) more than 40 minutes and less than 60 minutes, and 4) more than 60 minutes. For this, we use the open-sourced daily travel record data, "Seoul Travel Population," released by the Seoul Metropolitan Government. This data was accumulated in January 2020 with real-time big data (De Facto population counts with mobile phone signal), containing information on all travel arising from daily needs such as commuting, shopping, and leisure both inside and outside of Seoul.

Some distinct differences between commuting travel and non-commuting travel will be detected: The average travel time of commuting is greater than that of non-commuting, but the influence of built environment features of the neighborhood on the average travel time of non-commuting is greater than that of commuting. Additionally, in the case of commuting travel, the effect of transit accessibility and degree of mixed-use of a neighborhood and workplace was the greatest in the average travel time of the 40-60 minutes time interval. However, a neighborhood's residential density and workplace's business density had no effect in any time span. On the other hand, in the case of non-commuting travel, the lower the degree of mixed-use in a neighborhood, especially the lower the commercial proportion, the larger the average travel time, and the higher the transit accessibility associated, the smaller the average travel time.

With a better understanding of millennial mobility needs, metropolitan city space structures and infrastructure networks can respond to these demands. This will help build a more efficient and sustainable city network.

Citations

- Deka, D. (2018). Are millennials moving to more urbanized and transit-oriented counties?. *Journal of Transport and Land Use*, 11(1), 443-461.
- Ding, C., Liu, C., Zhang, Y., Yang, J., & Wang, Y. (2017). Investigating the impacts of built environment on vehicle miles traveled and energy consumption: Differences between commuting and non-commuting trips. *Cities*, 68, 25-36.
- Garikapati, Venu M., Ram M. Pendyala, Eric A. Morris, Patricia L. Mokhtarian, and Noreen McDonald. "Activity patterns, time use, and travel of millennials: a generation in transition?." *Transport Reviews* 36, no. 5 (2016): 558-584.
- Jun, M. J., Choi, S., Wen, F., & Kwon, K. H. (2018). Effects of urban spatial structure on level of excess commutes: A comparison between Seoul and Los Angeles. *Urban studies*, 55(1), 195-211.
- Ralph, K., Voulgaris, C. T., Taylor, B. D., Blumenberg, E., & Brown, A. E. (2016). Millennials, built form, and travel insights from a nationwide typology of US neighborhoods. *Journal of transport geography*, 57, 218-226.

Key Words: Daily Travel Pattern, Location-based Big Data, Millennials, Commuting Trip, Non-commuting Trip

HOW THE SENSE OF PLACE FORMED BY CONSUMER TYPE BASED ON SOCIAL MEDIA

Abstract ID: 1994

Individual Paper Submission

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The sense of place (or placeness) changes with the flow of the times because the various factors that form the place and the experiences of people are interconnected. Therefore, in order to understand the sense of place of modern city that accommodates and mediates various types of information and changes, it is necessary to understand the characteristics of people who are the subjects of change. This study focused on the emergence of social media as a representative influencing factor of changes in consumption behavior. Unlike the era when media did not affect places, in the present era, media information has become very important in enjoying a place.

Therefore, this study aims to reflect the influence of social media, a representative characteristic of changes in consumption behavior in modern society, in understanding the factors and cognitive processes of forming urban consumption spaces. To this end, based on the theoretical model of the relationship between the formation process of placeness and behavioral intention, an analysis was conducted on the characteristics of the consumption behavior of people based on social media.

The research consists of the following steps. In step 1, the consumption group is classified and the characteristics of each group are confirmed through consumer segmentation including social media use characteristics, individuals, and place selection tendencies. Step 2, the recognition of the place components according to the difference between groups and its effect on the formation of a socially empathized image, that is, sense of place. In addition, the behavioral intention according to the formation of sense of place is grasped from a comprehensive perspective. Step 3, analyze the behavior of consumers who are influenced by social media consuming places and identify the mechanisms for the formation process of sense of place they are paying attention to. Through this, we propose the direction of a fundamental strategy that can continuously preserve the spatial value of urban space.

A survey was conducted to collect analysis data. The subjects of the questionnaire were set as people who visited a specific consumption space. After asking them about the characteristics of media use and place selection, the cognitive characteristics and behavioral intentions of place in the situation of place consumption were questioned. A total of three analyses were conducted based on the collected survey data. First, the consumer groups were segmented through cluster analysis. Next, spatial recognition path analysis was conducted for each consumer type, and finally, differences by group were confirmed.

The results of this study can be helpful in understanding urban space and the people living in it as follows. First, in the study of sense of place, the characteristics of the current generation exposed to social media were reflected. Second, in-depth analysis of the characteristics of the current generation from the point of view of place consumption revealed the weaknesses and strengths of each group. This suggests that if the propensity of major consumers in a specific place is identified in advance, it is possible to more effectively prepare strategies for managing and promoting the value of the place that consumers pay attention to. Third, the results of this study point out that it is necessary to find information that is not revealed in public space through social media, and to go beyond simple physical space improvement, and to have a practical plan to preserve and sustain the content value of the place.

Citations

- Lynch, K. (1972). *What time is this place?*. Mit Press.
- Jorgensen, B. S., & Stedman, R. C. (2001). Sense of place as an attitude: Lakeshore owners attitudes toward their properties. *Journal of environmental psychology*, 21(3), 233-248.
- Sevin, E. (2013). Places going viral: Twitter usage patterns in destination marketing and place branding. *Journal of Place Management and development*.
- Schwartz, R., & Halegoua, G. R. (2015). The spatial self: Location-based identity performance on social media. *New media & society*, 17(10), 1643-1660.
- Seo, E. J., et al., (2020). The effect of social media usage characteristics on e-WOM, trust, and brand equity: Focusing on users of airline social media. *Sustainability*, 12(4), 1691.

Key Words: Sense of Place, Behavioral intention, Market segmentation, Social Media, Commercial district management

DOES DELIVERY METHOD OF VIRTUAL REALITY TECHNOLOGY AFFECT PEOPLE'S VISUAL PERCEPTIONS OF URBAN STREET DESIGN?

Abstract ID: 2014

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Background

Since Complete Streets movement started in 2005 in United States, urban streets are getting more attention as an essential component of urban environments. However, traditionally the street design is mostly an engineering domain where the perceptions of different road users are not included (Mccann, 2013). The Virtual Reality (VR) technology generates visual environments that have the potential to assess the perception of built environments during the design phase. VR can be delivered in a traditional flat screen as an interactive 360-video or panorama (referred here as 360-web) and in a fully immersive experience delivered by Head-mounted Display (referred here as Headset) (Yeo et al., 2020).

Purpose

The purpose of this research is to evaluate the performance of these two VR delivery methods - 360-web and Headset - in measuring people's visual perception of street design. The variables measured include safety, comfort, place recognition, density, and enclosure. The measurements are conducted using two designed street scenarios which feature urban center and general urban characteristics. Specific research questions include: (1) Are there differences between Headset and 360-web in eliciting participants' perceptions of the 3D street design environments? (2) How do participants' backgrounds affect their preferences between Headset and 360-web?

Methodology

We conducted a two-phase survey using a sample of 42 subjects (participants). First, the subjects are presented with the two design scenarios, first using a Headset, and six days later using the 360-web visualization method. They fill out a questionnaire that allow us to measure the selected variables. The results are analyzed using Wilcoxon signed-rank test and Goodman-Kruskal gamma tests of the subjects' responses about the perception. We also analyzed the relationship between individuals' backgrounds and their perception scores. The background factors include demographics (i.e., gender and age) and experience (i.e., education level, any design background, living density, and prior VR/video game experience).

Results

The results show differences between Headset and 360-web. First, participants largely prefer Headset (63.0%) over the 360-web (37.0%). However, in the assessment of perception itself over half of the participants' scores are similar. Second, when assessing realistic visualization capabilities, Headset show higher scores than the 360-web. Finally, we find that only the perception of "biking comfort" and "driving safety" in the urban general setting, show statistically significant higher score for the Headset than the 360-web.

Personal backgrounds greatly affect the participants' preferences. The preference rate for Headset decreases with age increasing. Participants with design background prefer Headset (65.2%) to 360-web (34.7%), while those without show equal preference. Participants with prior VR/video game experience prefer Headset compared to those without such experiences. The preference rate for Headset decreases when participants' living density increases. The participants' living density show a weak negative correlation with perception of density – people living in denser areas are more likely to give lower score to "density". This result is stronger for urban general setting (lower density design), where more participants give higher perception scores using Headset than 360-web. However, in the urban center scenario (higher density design), fewer participants give higher perception scores.

Contribution

This research contributes to filling the gap in the literature about the lack of evaluation of visualization tools for urban design. Specifically, this research finds that the immersive VR provides a more realistic visualization for assessment of urban street design. This can support the benefit for the extra effort that is typically necessary to use an immersive VR compared to a non-immersive 360-web approach to assess the urban street design scenarios.

Citations

- Batty, M., Chapman, D., Evans, S., Haklay, M., Kueppers, S., Shiode, N., Smith, A., & Torrens, P. M. (2000). Visualizing the city: communicating urban design to planners and decision-makers.

- Mccann, B. (2013). Completing our streets?: the transition to safe and inclusive transportation networks. Island Press.
- Merino, L., Ghafari, M., Anslow, C., & Nierstrasz, O. (2018). A systematic literature review of software visualization evaluation. *Journal of Systems and Software*, 144(October 2017), 165–180. <https://doi.org/10.1016/j.jss.2018.06.027>
- Yeo, N. L., White, M. P., Alcock, I., Garside, R., Dean, S. G., Smalley, A. J., & Gatersleben, B. (2020). What is the best way of delivering virtual nature for improving mood? An experimental comparison of high definition TV, 360° video, and computer generated virtual reality. *Journal of Environmental Psychology*, 72, 101500. <https://doi.org/10.1016/j.jenvp.2020.101500>

Key Words: Urban Design, Complete Streets, Virtual Reality, Perception, 3D visualization

LINKING LANDSCAPE SPATIAL HETEROGENEITY TO OUTDOOR HUMAN THERMAL COMFORT IN TOKYO METROPOLITAN CITY: APPLICATION OF THE COMFA ENERGY BUDGET MODEL

Abstract ID: 2026

Individual Paper Submission

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Rapid urbanization and high-density development have been major drivers of urban warming. The effects of spatial landscape patterns on the urban thermal environment, specifically for urban heat island (UHI) and land surface temperature (LST), have been well investigated (Mahyar et al., 2019; Lu et al., 2020). The spatial landscape metrics measuring the composition, shape, aggregation, fragmentation, and proximity of greeneries have frequently been linked to urban cooling capacities as they account for the joint effects of land use, land cover, and geographical features (Jane et al., 2019; Zheng et al., 2021). However, few studies have explored the relationship between spatial heterogeneity of landscape patterns to the outdoor human thermal comfort of urban residents. Despite the fact that the UHI and LST are indirect and secondary proxies representing the impact on human heat stress, quantifying the direct cooling effects of spatial landscape patterns on human level thermal comfort has been less considered in previous studies.

Accordingly, this study investigates the relationship between the spatial heterogeneity of landscape patterns and outdoor human thermal comfort. The greenery's cooling effects on the physiological thermal loading of people in various urban settings are explored. Particular attention is given to revealing what spatial patterns of urban greenery – configurations and compositions – have a significant relationship with outdoor thermal comfort. In addition, interaction effects of landscape patterns with proximity to water bodies and urban densities are further analyzed to identify their synergies and mitigations on greenery's cooling effects.

For this longitudinal study, spatial regression models were adopted to quantify the impact of landscape metrics on outdoor human thermal comfort. Tokyo in Japan was selected as a study site since it is a coastal metropolis suffering from high heat-related mortality and morbidity due to the extreme urban heat conditions (Ohashi et al., 2014). The meteorological datasets are obtained from Japan's Ministry of Land, Institute, Transport, and Tourism (MLIT). Landsat 8 and sentinel 2 remote sensing images are collected to measure the land surface temperature and normalized vegetation index (NDVI), respectively. Fragstats is employed to generate landscape metrics using NDVI. COMFA energy budget model is applied to estimate human outdoor thermal comfort using meteorological variables and Sky View Factor (SVF). The SVF is an urban morphological indicator of solar access reaching to the ground and quantified using AI algorithm-driven Google Street View Images Analysis.

The preliminary study results indicated that landscape spatial patterns significantly affect outdoor thermal comfort. We found that the cooling effects of greenery would be increased when they are in a more aggregated, less fragmented, and more complex shape. Furthermore, the cooling efficiency of the landscape pattern can be further boosted when they are nearer to the water body and located in a lower density development area. Our study findings would provide microclimatic urban planning and design implications of how to spatially configure and arrange the urban greenery to improve outdoor thermal comfort at the city scale.

Citations

- Jane Wesley, E. J. and N. A. A. Brunsell (2019). "Greenspace Pattern and the Surface Urban Heat Island: A Biophysically-Based Approach to Investigating the Effects of Urban Landscape Configuration." *Remote Sensing* 11(19).

- Lu, L., et al. (2020). "Spatiotemporal Variation of Surface Urban Heat Islands in Relation to Land Cover Composition and Configuration: A Multi-Scale Case Study of Xi'an, China." *Remote Sensing* 12(17).
- Mahyar, M. and T. Puay Yok (2019). "Multi-year comparison of the effects of spatial pattern of urban green spaces on urban land surface temperature." *Landscape and Urban Planning*.
- Ohashi, Y., Kikegawa, Y., Ihara, T., & Sugiyama, N. (2014). "Numerical simulations of outdoor heat stress index and heat disorder risk in the 23 wards of Tokyo". *Journal of Applied Meteorology and Climatology*, 53(3), 583-597.
- Zheng, Y., et al. (2021). "Quantifying the Cooling Effect and Scale of Large Inner-City Lakes Based on Landscape Patterns: A Case Study of Hangzhou and Nanjing." *Remote Sensing* 13(8).

Key Words: Outdoor human thermal comfort, Landscape spatial pattern, Surface urban heat island, Coastal megacity of Tokyo, COMFA model

HELPING COMMUNITIES TRACK AND MEASURE RACIALIZED ENDURING DIVERGENCE: KEY INDICATORS FOR ADDRESSING ROOT CAUSES OF NEIGHBORHOOD INEQUALITY

Abstract ID: 2032

Individual Paper Submission

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According to the 2020 Census data released in August 2021, only 4 of the 40 cities with population greater than 400,000 in 2010 lost any population at all. Baltimore City was in the minority, experiencing a -5.7% population loss between 2010 and 2020. However, many communities actually gained population in close proximity to communities that lost more than 4 times the citywide average.

The pattern of uneven and disparate growth was nearly the same in the preceding decade 2000 to 2010. Urban sociologist Robert Sampson [12] argues that neighborhoods have enduring properties based on the social, cultural, and physical realities that define places. Although people and individuals help shape neighborhoods, their actions occur within the structural construct of race, history, planning and geography.

This "pulling apart" of communities into those that gain all kinds of resources beyond population and those that do not is described by economist Enrico Moretti [2] as divergence, where inequalities along economic opportunities, socioeconomic class and even cultural amenities separate into different geographic areas. While Moretti developed his theory of divergence based on geographical sorting between cities in the nation, the experience in Baltimore suggests that divergence is occurring among neighborhoods within a city and might be true within other cities as well.

This paper aims to show that intracity growth is subject to "enduring divergence" rooted in structural racism which means that planners need to understand and track the forces that contribute to continued divergence in order to reverse these trends. Moretti points to 3 advantages of attraction for the communities that seem to keep growing despite the diverging experiences of neighboring areas.

1) Size Matters—the supply of services and infrastructure in a community needs to meet the demands of the residents and businesses located there. Once a community starts to lose population, regardless of the absolute size, there is an imbalance between all kinds of relationships such as buyers and sellers, homeowners and houses, or school children and school capacity.

2) Ecosystems Matter—no one in a community (no household, no business, no community organization) does anything alone. They each exist in a symbiotic relationship with the services they may use and/or provide.

3) Spillover Effects Matter—this refers to the unintended consequences that can occur from our interactions. Sometimes interactions can have both negative and positive effects, such as when someone moves in next door at a high market prices that might increase the value of adjacent homes, but then also increase the tax burden. Beyond prices, there are intangible human interactions that help build human and social capital, largely due to the knowledge we gain by interacting with each other.

None of these "advantages" that Moretti identifies are ahistorical or devoid of racial biases therefore we must add [3]

4) Black Neighborhoods Matter—the cumulative lack of attraction advantages that Moretti points to disproportionately impact communities of color. And not just due to historically racist policies that promoted segregation and devaluation in the past, but modern practices impacting Black neighborhoods today.

Based on findings from the Baltimore Community Change Project, using more than 100 community based indicators collected annually between 2010 and 2020, this paper shows empirical evidence of key indicators that can help planners measure the disparity between diverging neighborhoods. While race was certainly one distinct factor, others

included indicators of isolation in terms of market access (no new construction activity), physical mobility (high commute times), digital connectivity (low internet access at home), and civic participation (low voter turnout). These measures can help planners address the missing forces of attraction from within declining neighborhoods.

Citations

- Moretti, Enrico. *The New Geography of Jobs*. 1st Mariner Books ed., Mariner Books/Houghton Mifflin Harcourt, 2013. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=cato4151a&AN=balt.004513331&site=eds-live .
- Brown, Lawrence (2021) *The Black Butterfly: The Harmful Politics of Race and Space in America*. Johns Hopkins University Press.
- Sampson, Robert J., *Great American City?: Chicago and the Enduring Neighborhood Effect*. University of Chicago Press, 2012. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=cato4151a&AN=balt.004348981&site=eds-live.
- Randolph, G. F., & Currid-Halkett, E. (2022). Planning in the Era of Regional Divergence: Place, Scale, and Development in Confronting Spatial Inequalities. *Journal of the American Planning Association*, 88(2), 245–252. <https://doi-org.proxy-ub.researchport.umd.edu/10.1080/01944363.2021.1935302>

Key Words: divergence, neighborhood, indicators, structural racism

DIFFERENCES AND SIMILARITIES IN PERCEPTIONS OF AUTONOMOUS VEHICLES BETWEEN PEOPLE WITH DISABILITIES AND PEOPLE WITHOUT DISABILITIES

Abstract ID: 2033

Individual Paper Submission

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The Autonomous Vehicles (AV), often viewed as the next revolution in transportation, will have a great impact on all aspects of our society, especially on mobility. Most research (Claypool, Bin-Nun and Gerlach 2017) show that AV has the potential to increase mobility for those who are unable or unwilling to drive, such as people with disability (PwD) and elderly. The benefits for these groups include independence, reduction in social isolation, and access to essential services. Some of their mobility services are currently provided by public transit, paratransit, or ridesharing companies. But each of these alternatives has significant challenges. Public transit remains hard to utilize due mainly to accessibility-related equipment and attitudinal issues from drivers (Bezyak, Sabella and Gattis 2017). Paratransit services in the United States are being stressed from high demand and low funding (United States Government Accountability Office 2012). Besides of lack of accessible devices, ridesharing services can be expensive for PwD who in general have lower income than People without Disabilities (PwtD) due to decreased accessibility to employment and the corresponding additional challenges (Clewlow and Mishra 2017).

To realize the potential of AV for PwD, it is essential to understand the special needs and understandings from the community. However, there has been little research comparing the differences and similarities between PwD and PwtD in their perceptions of AV. How comfortable and safe that PwD think about AV? How much PwD is willing to pay for the AV technology given their affordability? What are some social factors of AV would make it more likely for PwD to utilize it? These are the questions this study seeks to answer. Additionally, this study asks how these generalities and differences translate into technical requirements and policy recommendations for autonomous vehicles.

Two surveys were used to examine the perceptions of PwD and PwtD about AV and to understand the factors influencing their perceptions. One statewide survey targeted entire Michigan population and the other areawide survey focused on PwD. Multinomial Logistic Regression models were used to analyze the survey results.

The study shows that females were more concerned about the safety of AV whether with disabilities or not. Employment status and ethnicity had no influence on the perception of AV safety for PwD and PwtD. In addition, PwtD who regularly use public transportation were more likely to feel safe and ride AV than those who do not use public transportation. Those with higher levels of education were more likely to feel safe with AV. PwD were not willing to pay more for AV rides than Uber/Lyft rides. Contrary to some of the previous findings, there is strong receptivity to AV among PwD. Despite their social isolation concerns, PwD favored personal AV over shared form AV. This finding indicates that PwD prioritize mobility over social functions in AV technology.

Citations

- Claypool, Henry, Amitai Bin-Nun, and Jeffrey Gerlach. 2017. Self-Driving Cars: The Impact on People with Disabilities. Ruderman Family Foundation; Securing America's Future Energy.
- Kadylak, Travis, Shelia R. Cotton, and Chris Fennell. 2021. Willingness to Use Automated Vehicles: Results From a Large and Diverse Sample of U.S. Older Adults. *Gerontology & Geriatric Medicine*.
- Bezyak, Jill, Scott Sabella, and Robert Gattis. 2017. Public Transportation: An Investigation of Barriers for People With Disabilities. *Journal of Disability Policy Studies*.
- United States Government Accountability Office. 2012. ADA PARATRANSIT SERVICES Demand Has Increased, but Little is Known about Compliance.
- Clewlow, Regina R, and Gouri Shankar Mishra. 2017. Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. UC Davis Institute of Transportation Studies.

Key Words: Inclusive mobility, Mobility for People with Disabilities, Autonomous Vehicles, Disruptive technology, Social

WHERE DID REDLINING MATTER? REGIONAL HETEROGENEITY AND THE UNEVEN DISTRIBUTION OF ADVANTAGE

Abstract ID: 2057

Individual Paper Submission

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This paper studies the regional variation in outcomes of federal home mortgage insurance grading to highlight the contingent discriminatory and economic conditions that mediated housing outcomes. Given these contingencies, this study aims to clarify how the influence of a seemingly standardized federal neighborhood valuation principle nevertheless had heterogeneous outcomes across the United States. What were the city and regional economic and population growth patterns pre-FHA and how may this have shaped loan guarantee patterns? Between 1940 and 1970, was the degree of the FHA's influence, as proxied by the HOLC maps, on A or B ("AB" from here) graded neighborhoods versus C graded neighborhoods in different cities and how did this influence change or persist over time? Is there regional variation in the influence of these grades? What are the longitudinal socioeconomic patterns that may explain the persistence or decline of the AB effect over time? In part 1, I measure the regional variation of central city changes pre-FHA and relate this to the FHA's insurance activities between 1934 and 1940. Part 2 analyzes two outcomes of interest – home value and homeownership – and compares fixed effects of an AB grade to a C grade for cities between 1940 and 1970. It uses a Bayesian hierarchical framework in which AB effects vary across cities, while allowing information about these effects to be shared between cities. Part 3 estimates the persistence of the longitudinal city-level AB fixed effects from Part 2 as explained by regional differences as well as socioeconomic trends. I find that the Pacific and Sunbelt cities that saw the most housing construction also had the highest proportions of FHA loans to overall dwelling units. There is also a distinctive consistency and persistence of benefit on home value and homeownership to AB graded neighborhoods in West coast and Mountain Divisions.

Citations

- Goetz EG, Williams RA, Damiano A. 2020. Whiteness and urban planning. *Journal of the American Planning Association* 86:142–156.
- Kasarda JD, Redfearn GV. 1975. Differential Patterns of City and Suburban Growth in the United States. *Journal of Urban History* 2:43–66. DOI: 10.1177/009614427500200102.
- Xu W. 2021. Legacies of Institutionalized Redlining: A Comparison Between Speculative and Implemented Mortgage Risk Maps in Chicago, Illinois. *Housing Policy Debate* 0:1–26. DOI: 10.1080/10511482.2020.1858924.

Key Words: historical redlining, housing discrimination, Bayesian methods, mortgages

ASOCIAL SOCIETY AND FORM

Abstract ID: 2061

Individual Paper Submission

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Abstract ACSP Conference 2022 - Asocial Society and Form

Along with the evolution of Canadian society in the last five decades from predominantly rural to being 80% urban, urban form and neighbourhood configurations have also evolved. This legacy of urban form, that Hillier (Hillier, 1996) would argue has been a “rather disorderly outcome of a long history of small-scale, incremental changes, which accumulate over time to produce patterns with neither geometrical nor functional simplicity” provides a backdrop a society that is increasingly disengaged. This lack of engagement – our disconnection from each other, our isolation, the pandemic of loneliness – is escalating. While it would be simple to lay blame on virtual lives replacing social lives, this assumes that the environments we build have no agency or impact on social interaction and people’s connection to society.

Beyond this very new and pressing social issue of the global pandemic, there are longer brewing topics such as an ongoing undermining of democratic systems and processes internationally. The MeToo movement calling out the widespread prevalence of sexual harassment, the Black Lives Matter movement bringing attention to systemic biases towards minorities, and of course, global warming and sustainability putting into question long held expectations about quality of life based on amenities and luxuries.

All these are expressions of social shifts creating rifts that have their expression in built form. Segregated urbanism as an example in South Africa under apartheid urbanism (Turok, 1994) or building walls to protect arbitrary political and religious boundaries such as in Israel (Shoshan, 2010). Also mundane aspects such as suburbia with its individualized and isolating structure (Keil, 2013) was promoted by, and is by itself, promoting an exclusive lifestyle built around the individualization of space. Access to the city is governed by finance and economic power mapping out segregation. Every attempt to revitalize and invest is accompanied by stronger waves of gentrification (Murdie & Teixeira, 2011; Walks et al., 2021).

We cannot separate our asociality from urban form and so this research involves marrying social movements to urban morphology (for example, Modernism, Situationists). We propose four avenues of investigation: 1) Urban Form - There is an abundance of academic research exploring the relationship between urban form/morphology and physical and mental health, environmental outcome and social connectivity, among many others, 2) Policy - These range from social housing policies to land use policies affecting zoning and densification, 3) Action - Citizen-led initiatives provide insight into the psyche of a population, and 4) Examples - A systematic review of large-scale, state-led and privately funded urban renewal projects to uncover their evolution, approach, resident profiles, motivations behind their creation.

We are working with two extensive scoping studies using a methodology based on (Arksey & O’Malley, 2005). Scoping Study 1 focuses on Urban Research and Scoping Study 2 on Municipal Policy.

Comparative analysis of methodologies provides insight on future research strategies, tracking overlapping content, and an understanding of research best-practice.

Citations

- Arksey, H., & O’Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology: Theory and Practice*, 8(1), 19–32.
- Hillier, B. (1996). *Space is the machine*. Press Syndicate.
- Keil, R. (Ed.). (2013). *Suburban Constellations. Governance, Land and Infrastructure in the 21st Century*. Jovis Verlag.
- Murdie, R., & Teixeira, C. (2011). The Impact of Gentrification on Ethnic Neighbourhoods in Toronto: A Case Study of Little Portugal. *Urban Studies*, 48(1), 61–83.
- Shoshan, M. (2010). *Atlas of the Conflict—Israel-Palestine*. O10 Publishers.

Key Words: asocial society, urban form, agency

HOUSING PRICE INDICES FROM BIG DATA: ADDRESSING THE SPATIAL BIAS WITH SAMPLING WEIGHTS

Abstract ID: 2069

Individual Paper Submission

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This paper proposes a method to reduce the inherent sampling bias when estimating housing price indices using big data sources. Producing more accurate and representative metrics is important as new sources of data emerge with higher frequency, detail, and volume, providing more information for policymaking, but usually come with strong sampling biases that are often overlooked. In the case of housing price indices, although the literature around its

estimation is abundant, it has concentrated only in traditional and formal sources of housing data, which is normally not available in some markets (i.e., renting) and locations (developing countries). In this paper I propose a method to create a housing price index (HPI) that is comparable in quality to the industry-standard Case-Shiller HPI but using online listing data. Using online listing data from a developing economy (Chile), this paper shows that large biases present when using raw unweighted data, how these biases can be minimized using sampling weights, and how new and relevant information can be obtained from adjusted HPIs that can lead better policymaking.

Citations

- Boeing, G. and Waddell, P. (2017). New insights into rental housing markets across the United States: Web scraping and analyzing Craigslist rental listings. *Journal of Planning Education and Research* 37(4): 457–476.
- Boeing, G. (2019). Online rental housing market representation and the digital reproduction of urban inequality. *Environment and Planning A: Economy and Space*, 52(2), 449–468.
<https://doi.org/10.1177/0308518X19869678>
- Lopez, E.; Hewings, G.J. Housing price indices for small spatial units. *Regional Science and Urban Economics* 2018, 70, 57–71.

Key Words: Big data, Housing Price Indices

Track 1 Posters

THE IMPACT OF AFFORDABLE, HISTORIC, AND SUSTAINABLE DESIGNATIONS ON PUBLIC EVALUATIONS OF PROPOSED HOUSING DEVELOPMENTS

Abstract ID: 1196

Poster

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An important objective in both research and practice relating to urban planning is striving to understand the public's opinions on the design of the built environment, especially around high-profile topics like densification, affordability, preservation, and sustainability. Recent studies have examined how public opinions around densification could be altered with various framing approaches. A positive framing approach, such as emphasizing various public benefits (Doberstein, Hickey, and Li 2016), and a negative framing approach, such as emphasizing developers' potential profits (Monkkonen and Manville 2019), respectively had positive and negative impacts on acceptance of proposed projects. Even a frame shift as subtle as changing one term has been shown to have a significant impact. In a between-subjects survey, 61% of respondents supported or strongly supported the term "lifecycle housing" while only 45% supported or strongly supported the term "affordable housing" both of which were presented with an identical definition (Goetz 2008).

While all these experiments used written framing, given the technical nature of project documentation (e.g., plans, permits, codes) and the scale of the final built form, photos and renderings are also often used to convey information to the public. To efficiently provide context to their study, Whittemore and BenDor (2019) first showed participants an aerial photograph of a development and then presented a series of written supportive frames. While Whittemore and BenDor focused on the impact of the written frames, it is worthwhile to consider the impact of the visual depiction that was included. The use of visual representations in research introduces opportunities for understanding viewer perceptions but also challenges, such as teasing out visual confounds. An emerging methodology that allows research to unobtrusively understand how participants are interacting with visual imagery of the built environment is eye tracking. While scholars have used eye tracking to better understand how people absorb architectural features (Hollander et al. 2020), no research known to the authors has examined how the written designations of buildings and their visual depictions interact to influence public opinion of a proposed building project.

To address this gap, our research seeks to answer: How does the general public interpret and react to photos of buildings? Specifically, how does the context (usage and designation) of a building interact with its visual depiction to impact viewers' initial assessments (such as attractiveness and acceptance)? Two sequential studies will be conducted utilizing a between-subjects design where each participant is shown a series of affordable housing developments and asked to provide their perceptions of attractiveness and acceptance on each. One of five possible building designation labels (affordable, historic, sustainable, affordable and historic, and affordable and sustainable) will be presented as

part of an accompanying framing text introducing the developments. An unlabeled version will be run to act as a baseline. The two independent variables (IV) are the physical building design captured through images and the building designation label captured through the framing text. The second online study will have the same self-report measures as the first and, additionally, incorporate web camera eye tracking to examine how the IVs impact participants' engagement with visual stimuli captured through area-of-interest (AOI) metrics (namely time to first fixation, fixation time, fixation count).

The results of this research will provide insights into how the underlying public connotations (positive or negative) of building designations impact the evaluation and acceptance of a proposed project. Understanding the interactions of these designations with the physical building design and neighborhood context can ultimately inform strategies to more successfully address public opposition that delays or blocks proposed affordable housing projects.

Citations

- Doberstein, Carey, Ross Hickey, and Eric Li. 2016. "Nudging NIMBY: Do Positive Messages Regarding the Benefits of Increased Housing Density Influence Resident Stated Housing Development Preferences?" *Land Use Policy* 54 (July): 276–89. <https://doi.org/10.1016/j.landusepol.2016.02.025>.
- Goetz, Edward G. 2008. "Words Matter: The Importance of Issue Framing and the Case of Affordable Housing." *Journal of the American Planning Association*. American Planning Association 74 (2): 222–29. <https://doi.org/10.1080/01944360802010251>.
- Hollander, Justin B., Ann Sussman, Alex Purdy Levering, and Cara Foster-Karim. 2020. "Using Eye-Tracking to Understand Human Responses to Traditional Neighborhood Designs." *Planning Practice & Research* 35 (5): 485–509. <https://doi.org/10.1080/02697459.2020.1768332>.
- Monkkonen, Paavo, and Michael Manville. 2019. "Opposition to Development or Opposition to Developers? Experimental Evidence on Attitudes toward New Housing." *Journal of Urban Affairs* 41 (8): 1123–41.
- Whittemore, Andrew H., and Todd K. BenDor. 2019. "Exploring the Acceptability of Densification: How Positive Framing and Source Credibility Can Change Attitudes." *Urban Affairs Review* 55 (5): 1339–69. <https://doi.org/10.1177/1078087418754725>.

Key Words: Framing, Eye tracking, Affordable housing, Historic, Sustainable

CITIZEN ENGAGEMENT THROUGH E-GOVERNMENT SYSTEM AS CLIMATE ACTION

Abstract ID: 1368

Poster

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As an older coastal city, New York faces imminent threats from climate change including flooding from sea level rise and storms, increasing heat vulnerability, and deteriorating air quality. Simultaneously, many citizens of New York experience threats unequally - often those at highest risk are low income, immigrant populations with fewer resources to advocate for needed policy and infrastructure interventions. NYC311 is the City's platform allowing the government to respond to requests for non-emergency services, which provides New Yorkers an avenue to request action ranging from pest control to maintenance of city infrastructure. As climate change continues to accelerate, it is likely that the scope of complaints 311 oversees will increasingly expand to include those relating to environmental risks. Concurrently, there is an increasing interest in e-governance and civic engagement platforms to promote equitable inclusive policy making. This research will investigate the usage of 311 as a civic engagement platform to advocate for policy and infrastructure changes in light of climate change. Specifically, this study will investigate how equitably New York's 311 services has served its citizens by determining how reporting rates in neighborhoods with higher environmental risks differ from those in lower risk neighborhoods. Using big data and machine learning techniques, this research will investigate 311 complaints, flood maps, air quality information, and building information to inform policy recommendations. The goal is to promote a more equitable implementation of citizen engagement in light of climate change.

Citations

- Kontokosta, C. E., & Hong, B. (2021). Bias in smart city governance: How socio-spatial disparities in 311 complaint behavior impact the fairness of data-driven decisions. *Sustainable Cities and Society*, 64, 102503.
- Minkoff, S. L. (2016). NYC 311: A tract-level analysis of citizen–government contacting in New York City. *Urban Affairs Review*, 52(2), 211–246.
- Hartmann, S., Mainka, A., & Stock, W. G. (2017). Citizen relationship management in local governments: The potential of 311 for public service delivery. In *Beyond bureaucracy* (pp. 337–353). Springer, Cham.

- Pina, V., Torres, L., & Royo, S. (2017). Comparing online with offline citizen engagement for climate change: Findings from Austria, Germany and Spain. *Government Information Quarterly*, 34(1), 26-36.

Key Words: e-government, citizen engagement, climate action, urban resilience

ANALYSIS OF SPATIO-TEMPORAL CHANGES IN HEATWAVE IN KOREA DUE TO CLIMATE CHANGE: USING DYNAMICS INDEX AND SPACE-TIME SCAN STATISTICS

Abstract ID: 1910

Poster

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Continuous climate changes have increased the intensity and frequency of extreme and adverse weather events, such as temperature rise, heavy rain, and heavy snow; consequently, damage and negative effects also have increased. This study analyzed the present and future impacts of climate change, and examined their temporal and spatial characteristics to cope with the negative impacts.

The study focused on analyzing and presenting changes in the occurrence of heatwaves due to climate change in Korea by using the Dynamics Index and Space-Time Scan Statistics. The Dynamics Index combined with a matrix allows for examination of changes in the impacts of climate change from the current time to the short-, mid-, and long-term future. Therefore, heatwaves associated with climate change were applied in the form of a matrix of the current status (Status) and future changes (Dynamics) so that the magnitude and urgency of the impacts are presented through the status index and the necessity and timing of response can be derived by using the future change (Dynamics Index). Space-Time Scan Statistics is a method for analyzing the complex correlations of time and space dimensions to identify spatial and temporal concentration patterns at the regional level. By exploring the distance and period of impacts from the target region to vicinity areas, it is possible to derive the areas where the spatiotemporal concentration pattern occurs and also examine changes in the short-, mid-, and long-term impacts of heatwaves.

The results of the Dynamics Index and Space-Time Scan Statistics varied depending on the climate change scenario, but similar risk clusters of future occurrence of heatwaves appeared. In both methods, the risk of heatwaves increased over time, and the largest risk cluster occurred in the Capital Seoul and Gyeongsang-do Province, which is in the southeastern part of the Korean Peninsula.

Accordingly, the results obtained through analysis of the Dynamics Index and Space-Time Scan Statistics provide insights into the timing and spatial distribution of risks; therefore, they are considered to be highly useful for decision-making or priority-setting in response to climate change. In addition, the methodological scalability for supporting decision-making on climate change is pronounced.

Citations

- Jörg Pohlen & Jenni Strote. (2017). Cities under observation: Social monitoring in integrated neighbourhood development in Hamburg. *Procedia Computer Science*, 112, 2426-2434.
- Yu, I.S., Jung, H.C., Rubio, C.J., Kim, H.Y. and Jeong, S.M. (2019). Assessment of a Grid-Based Wind Disaster Risk for Climate Change Adaptation. *Assessment of a Grid-Based Wind Disaster Risk for Climate Change Adaptation*, 19(2), 209-219.
- Kim, Do-Woo & Deo, Ravinesh & Lee, Jong-Seol & Yeom, Jong-Min. (2017). Mapping heatwave vulnerability in Korea. *Natural Hazards*. 89. 1-21.

Key Words: Climate Change, Heatwave, Spatio-temporal assessment, Dynamics index

Track 2 - Community Development

Track 2 Pre-Organized Session Summaries and Abstracts for the Sessions

ASIAN AMERICAN AND PACIFIC ISLANDER ACTIVISM AND PLACE-MAKING

Pre-Organized Session 31 - Summary

Session Includes 1182, 1183, 1184, 1185, 1186

LEE, Aujean C. [University of Oklahoma] aujean@ou.edu, organizer

Planning and policymaking have been used to preserve white wealth and exclusion. Asian Americans and Pacific Islanders (AAPIs) have also been excluded from planning processes and places in part because they are understudied and devalued in planning. Yet, their diversity is key to understanding nuances of intra- and inter-community-led activism and placemaking. This preorganized session includes studies of how AAPIs fight for visibility and community development issues in varying political and geographical contexts. With the immense diversity among AAPIs, they also contend with intracommunity tensions that impact their ability to create panethnic coalitions, from the local to federal level. The papers cover a range of community development and methodological issues, including data disaggregation, historic preservation, suburbanization, faith-based services, and anti-immigrant legislation. The papers also provide recommendations for understanding the impacts of racism and how to engage other racial groups that remain understudied in the planning field for educators and practitioners.

Objectives:

- community development
- race/ethnicity
- planning with diversity

GEORGIA'S IMMIGRANT SUBURBS: INTEGRATION, SEGREGATION AND SPRAWL IN SMALL SOUTHERN TOWNS

Abstract ID: 1182

Abstract within Pre-Organized Session 31

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Suburbs of Atlanta like Doraville, partially inside, and partially outside “the perimeter”, and Norcross, are both inner-ring suburban cities that once boomed with industry, and then subsequently suffered from white flight. The advent of the General Motors Assembly plant in the 1950s led to the development of two waves of housing: 1) planned subdivisions like Northwoods subject to restricted covenants (whites only) and composed of single-family homes, converted from largely agricultural plots of land (1950-1960), and 2) zoning changes, expansion of roads and highways, and apartment buildings all along Buford Highway – colloquially known as an immigrant highway of cheap rents, good food, and everybody from everywhere in close proximity. The mobility of refugees and immigrants movement has replicated the old pattern of white flight, with the majority of immigrants moving further and further northeast, and thereby slowly but surely converting previously majority white cities along Buford Highway into the “new immigrant cities” of Georgia.

Georgia is at a new nexus of immigration and refugee resettlement, particularly in the South, and from this recent growth of foreign-born residents, a number of “Welcoming Cities” have emerged. This paper examines immigrant settlement patterns in the Atlanta metropolitan area, segregation between immigrant and non-immigrant groups, and the emergence of non-traditional “majority-minority” towns. The state of Georgia attempts regularly to pass three types of anti-immigrant acts through its annual legislative sessions (English-only laws, civic engagement bans and/or restrictive voting measures, and driver’s license limits). How do immigrants in Norcross, Georgia, communicate with local officials and city representatives who as yet are not representative of their constituencies? Do some immigrants feel more welcomed than others? How does a distinctly southern immigrant suburb adapt to waves in federal and state policy that can shift local attitudes of welcoming, and vice versa?

Citations

- Carpio, G. C. Irazabal, and L. Pulido. (2011). "Right to the suburb? Rethinking Lefebvre and immigrant activism." *Journal of Urban Affairs* 33.2: 185-208.
- Alba, R. D., Logan, J. R., Stults, B. J., Marzan, G., & Zhang, W. (1999). Immigrant groups in the suburbs: A reexamination of suburbanization and spatial assimilation. *American sociological review*, 446-460.
- Friedmann, John, and Ute Angelika Lehrer. 1998. "Urban Policy Responses to Foreign In-Migration: The Case of Frankfurt-am-Main". *Journal of the American Planning Association*. 63 (1): 61-78.
- Harwood, Stacey Anne, and Dowell Myers. 2002. "The Dynamics of Immigration and Local Governance in Santa Ana: Neighborhood Activism, Overcrowding, and Land-Use Policy". *Policy Studies Journal*. 30: 70-91.
- Vitiello, Domenic. 2009. "The Migrant Metropolis and American Planning". *Journal of the American Planning Association*. 75 (2): 245-255.

Key Words: immigrant integration, suburbs, sanctuary cities, community development, segregation

DISMANTLING WHITE SUPREMACY IN HISTORIC PRESERVATION: ASIAN AMERICAN AND PACIFIC ISLANDER COMMUNITY-DRIVEN EFFORTS AND CONTEXT STUDIES

Abstract ID: 1183

Abstract within Pre-Organized Session 31

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The field of historic preservation has focused on commemorating and preserving places of architectural mastery associated with master narratives of exceptional people, places, and historical events. Given these standards, less than 8% of listings on the National Register of Historic Places are associated with minoritized groups (including African Americans, Asian Americans, Latinos, Native Americans, Native Hawaiians, Pacific Islanders, women, LGBTQ, the disabled). Historic preservation upholds standards that fail to understand histories of dispossession, displacement, discrimination, and trauma (and the places associated) for minoritized communities. While practitioners, researchers, and policymakers have more recently started to address the historical legacies of systematic discrimination as embedded in historic preservation practice and policy, it is imperative to explore the importance of community-driven engagement in preserving historic sites and cultural resources associated with minoritized groups. This chapter will explore a framework of community-driven historic preservation efforts through context studies, particularly on the creation and implementation of a federal initiative (National Park Service Asian American Pacific Islander Theme Study) and subsequent state and local context statements (City of Los Angeles, State of California, Washington, DC, State of Maryland) that have expanded approaches of community engagement in historic preservation, particularly given the lack of knowledge of Asian Americans in terms of immigration, settlement, and community formation patterns and implicit bias demonstrated by preservation planning staff that calls for the need for community driven efforts in preservation efforts. This presentation will examine the opportunities and benefits of these context studies, as well as limitations and consequences, in terms of processes and outcomes. Do context studies on racialized groups, like Asian Americans and Pacific Islander, help dismantle white supremacy in historic preservation or perpetuate it?

Citations

- Magalong, M. G., & Mabalon, D. B. (2016). Cultural Preservation Policy and Asian Americans and Pacific Islanders: Reimagining Historic Preservation in Asian American and Pacific Islander Communities. *AAPI Nexus: Policy, Practice and Community*, 14(2), 105-116.
- Magalong, Michelle. "Equity and Social Inclusion in Historic Preservation in Asian American and Pacific Islander Communities from the Ground Up" in *Preservation and Social Inclusion*, ed. Erica Avrami. New York: Columbia Books on Architecture and the City (2020).
- Roberts, A. R. (2020). Preservation without Representation: Making CLG Programs Vehicles for Inclusive Leadership, *Historic Preservation, and Engagement*. *Societies*, 10(3), 60.

Key Words: historic preservation, Asian Americans, Pacific Islanders, Community engagement

WHO COUNTS? THE POLITICS OF ASIAN PACIFIC AMERICAN DATA DISAGGREGATION IN NEW YORK CITY

Abstract ID: 1184

Abstract within Pre-Organized Session 31

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Nonprofits are crucial to the well-being of communities across the US. Immigrant-serving nonprofits, in particular, fulfill many necessary functions to support immigrant communities in an increasingly diversifying country. For

example, immigrant-serving nonprofits may offer services tailored to the needs of different immigrant communities (Cordero-Guzmán 2005), play a mediating role to bridge “multiple publics” (Hum 2010), and represent and/or mobilize immigrant groups around planning and/or policy issues (de Graauw 2016) – a necessary role as inclusive and meaningful forms of public participation may not always occur during the planning process, particularly for many non-citizens (Lee 2019).

However, there is little in the planning literature that demonstrates how immigrant-serving organizations construct and/or problematize racial identities in planning and policy contexts, and how these processes relate to planning and policy outcomes. In other words, while it is widely accepted that racial identities are socially constructed (Omi and Winant 2014), it is less clear what this “looks like” in practice in organizations that claim to represent specific ethnic and racial groups.

I fill this gap by investigating how a coalition representing 40+ nonprofit organizations serving and/or representing Asian Pacific Americans (APAs) in New York City attempted to push for the data disaggregation of group members. Ideally, disaggregated data on APAs would draw more attention and resources to the needs of disadvantaged subgroups and equip nonprofit advocates with more data to facilitate their advocacy and service efforts.

The study identifies three key factors (capacity constraints, intragroup tensions, and intergroup tensions) that contributed to the coalition’s challenges during the legislative process. Specifically, I trace how a City Council bill that originally focused on the data disaggregation of APAs was eventually transformed into one focusing on the identification of the top 30 ethnic groups and languages in New York City, effectively undermining the coalition’s attempts to bring attention to underserved APA groups. I demonstrate how these three factors are associated with issues that relate to racial identity construction and representation within the coalition.

This research is a part of a larger qualitative comparative case study of APA advocacy and social services organizations in New York City; this presentation features findings based on 10 semi-structured interviews, participant observation, and document analysis from my fieldwork in 2018. I focus on APAs for several reasons. While APAs are the fastest growing racial group in the US, group members represent over 20 different countries and the majority of individuals are foreign-born. Further, compared to other racial groups in the US, income disparities are greatest among APAs. These dynamics facilitate an exploration of how advocates and activists grapple with issues of identity and constituency within organizational contexts.

Ultimately, this work helps to advance planning scholarship by moving beyond monolithic depictions of immigrant-serving organizations and drawing attention to the kinds of complexities inherent to planning for an equitable and inclusive city.

Citations

- Cordero-Guzmán, H. R. (2005). “Community-based organisations and migration in New York City.” *Journal of Ethnic and Migration Studies* 31(5): 889–909.
- de Graauw, E. (2016). *Making immigrant rights real: Nonprofits and the politics of integration in San Francisco*. Ithaca, NY: Cornell University Press.
- Hum, T. (2010). “Planning in Neighborhoods with Multiple Publics: Opportunities and Challenges for Community-Based Nonprofit Organizations.” *Journal of Planning Education and Research* 29(4): 461–477.
- Lee, Aujean C. 2019. “Engaging Non-Citizens in an Age of Uncertainty: Lessons From Immigrant-Serving Nonprofits in Los Angeles County.” *Journal of the American Planning Association* 85(3): 271-286.
- Omi, Michael and Howard Winant. 2014. *Racial Formation in the United States*, third edition. New York: Routledge.

Key Words: nonprofits, community development, immigration, race

CHANGING THE SUBURBAN LANDSCAPE: ASIAN AMERICANS, CIVIC ENGAGEMENT, AND COMMUNITY MAKING IN CERRITOS, CA

Abstract ID: 1185

Abstract within Pre-Organized Session 31

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People of color and immigrants have challenged and reshaped traditional models of residential assimilation and segregation in the U.S. in recent decades. Suburbs, long viewed as a homogeneous white, middle-class spaces of exclusion, are increasingly racially, ethnically, and socioeconomically diverse places; the 2010 census showed that increasing numbers of Black, Latino, and Asian Americans lived in suburbs (Frey 2011). Much of the literature on Asian American suburbs has focused on Chinese immigrants in San Gabriel Valley and the interracial tensions and/or

solidarity with other racial groups, particularly Latinos (Li, 1998; Saito, 1998; Cheng, 2013). However, very few, if any, examine the nexus of multiple Asian American groups living in a community with transnationalism and that is multigenerational. But what are the effects of the changing demographics in suburban communities? How might Asian Americans complicate or change notions of suburbanization? How might residents of Asian American suburbs disrupt exclusion, assert belonging, and redefine community-making through their planning and civic engagement?

We use a case study approach to examine civic engagement in Cerritos, CA, a suburb in Los Angeles which is majority Asian American. It is not dominated by one Asian ethnic group and contains a mix of foreign-born and native-born Asian Americans unlike the focus of the prior literature (Li, 1998; Lung-Amam, 2017). It is a typical middle-class suburb with single family homes, an abundance of renovated shopping plazas, well-regarded schools, and plentiful parks. Yet as a racial group with great ethnic and socioeconomic differentiation and disparities in values and interests, and thus, policy and planning preferences can be complicated and conflicting.

Using interviews, participant observation, and content analysis of news media we examine how race, ethnicity, and class have shaped planning issues in the city and the approaches Asian Americans are using to shape suburban communities and a sense of belonging. In doing so, we see the challenges and strengths in organizing across racial and cultural differences, generations, and the political spectrum among Asian Americans. Simultaneously, we examine how Blacks, Latinx, and White residents adapt to and negotiate with the heterogeneous Asian American residents.

Ultimately, this research will provide much for planners to consider regarding how planning processes and participatory planning occurs in such diverse contexts. This study will expand our understanding of majority ethnic places as homogenous even in suburbs where presumably class would prevail in bringing people together and creating a shared identity. As the U.S. population continues to grow in racial, ethnic, and socioeconomic heterogeneity, studies of neighborhoods such as Cerritos urge scholars and planners to reimagine concepts

Citations

- Cheng, W. (2013). *The Changs next door to the Di'azes?: remapping race in suburban California*. University of Minnesota Press.
- Frey, W. H. (2011). *Melting Pot Cities and Suburbs: Racial and Ethnic Change in Metro America in the 2000s*. Brookings Institution.
- Li, W. (1998). Anatomy of a New Ethnic Settlement: The Chinese Ethnoburb in Los Angeles. *Urban Studies*, 35(3), 479–501. <https://doi.org/10.1080/0042098984871>
- Lung-Amam, W. (2017). *Trespassers??: Asian Americans and the battle for suburbia*. University of California Press. <https://doi.org/10.1525/9780520967229>
- Saito, L. (1998). *Race and politics?: Asian Americans, Latinos, and whites in a Los Angeles suburb*. University of Illinois Press.

Key Words: Ethnic suburbs, Asian Americans, Civic Engagement

NURTURING THE VA (SPACE): ACTIVISM AND CIVIC ENGAGEMENT AMONG INDIGENOUS TONGAN PACIFIC ISLANDER LATTER-DAY SAINT COMMUNITIES IN THE UNITED STATES

Abstract ID: 1186

Abstract within Pre-Organized Session 31

SOAKAI, Sarah [Urban Planning PhD Program, UCLA] sarahsoakai@ucla.edu, presenting author

Third sector civil society that include faith-based organizations (FBOs) and institutions fill the gaps not provided by the state or the market. Churches, mosques, synagogues, and other faith-based religious organizations and institutions are uniquely positioned and often the most trusted local neighborhood frontline contact among indigenous, immigrant, low-income communities of color. Indigenous Pacific Islanders in the U.S. diaspora are no exception. Catholic churches, Evangelical churches, Jesuit churches, Latter-day Saint (LDS) Mormon churches, Methodist churches, Protestant churches, and Seventh Day Adventist churches are prominent indigenous faith-based organizations and institutions among Pacific Islander populations. Churches are the central anchor institutions among Pacific Islander communities in the United States. Asian American Pacific Islanders are dedicating their time and resources to local structures and institutions outside of the mainstream, such as churches, where their volunteerism and participation go unmeasured (AAPI Civic Engagement Fund 2020). Of the many, many organizations and institutions that encompass third sector civil society, significant civic engagement with family and neighbor occurs within Pacific Islander churches.

This study focuses on Tongan Latter-day Saint ward congregations in the United States – in particular California, Hawaii and Utah, where a critical contingency currently exists – and how this Pacific Islander population actively

navigates and negotiates an indigenous place within a faith still largely seen as White American. Tongan LDS congregational communities in the United States encompass a critical indigenous margin, willingly participating within a space that has been indigenized in particular ways through language, song, and dance, for instance, to provide tauhi vā (economic, social, and spiritual well-being) to its members. Within these faith congregational spaces, Tongan Pacific Islanders actively participate in sharing economic, mental, and social services and support among its community. While such services and support can be useful in improving lives and the community, resources and capacity are often limited. Questions of if and how the indigenous Tongan LDS faith community can align and connect to state and other sources outside the faith are examined. Interviews, field participatory observations, and archival document analysis were used in the study.

Citations

- Ka'ili, Tevita O. (2017). *Marking Indigeneity: The Tongan Art of Sociospatial Relations*. University of Arizona Press.
- Romero, Robert Chao. (2020). *Brown Church: Five Centuries of Latina/o Social Justice, Theology, and Identity*. Downers Grove, Illinois: InterVarsity Press.
- Sandercock, Leonie. "Spirituality and the Urban Professions: The Paradox at the Heart of Planning." *Planning Theory & Practice* 7, no. 1 (March 1, 2006): 65–97. <https://doi.org/10.1080/14649350500497471>.
- Owens, Michael. (2012). "Capacity Building: The Case of Faith-based Organizations." In *The Community Development Reader*, edited by DeFlippis and Saegert. New York: Routledge.
- Umemoto, Karen. "Walking in Another's Shoes: Epistemological Challenges in Participatory Planning." *Journal of Planning Education and Research* 21, no. 1 (September 1, 2001): 17–31. <https://doi.org/10.1177/0739456X0102100102>.

Key Words: faith-based organization, Tongan Pacific Islander race and ethnicity, community development

EQUITABLE DEVELOPMENTS: EXPLORING THE POSSIBILITIES AND LIMITATIONS

Pre-Organized Session 37 - Summary

Session Includes 1333, 1334, 1335, 1336

KIM, Minjee [Florida State University] m.kim@fsu.edu, organizer

Growth is a double-edged sword. Urban elites, consisting of policymakers and business interests, have long embraced and promoted the idea that absolute increases in material wealth is a gain for the city regardless of who benefits from such increases. Nevertheless, ample evidence from planning practice and research suggests that this "raw" or "value-free" growth is uneven and reinforces and exacerbates socioeconomic inequality. In response, urban scholars have advocated for the need to distinguish raw growth from growth that is redistributive, reduces inequality, and promotes the well-being of people and the environment. In this session, we use the term "equitable developments" to refer to economic development and real estate development initiatives where the benefit from growth can also be distributed to disadvantaged communities, households, and individuals. We question whether such equitable development is possible and, if so, what it may look like in practice. We also explore the degree to which developments can be made equitable and identify the conditions that can push them towards more or less equity.

Objectives:

- identify the political and regulatory contexts under which growth can be made more equitable
- define what is equitable development and distinguish it from growth that simply means absolute increases in material wealth

DIVERSITY, EQUITY, AND INCLUSION IN MASTER PLANNED COMMUNITIES? AN INVESTIGATION INTO CONTEMPORARY PLANNED COMMUNITY DEVELOPMENT PRACTICES

Abstract ID: 1333

Abstract within Pre-Organized Session 37

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The evolution of the urban planning profession has long been intimately connected with the real estate development industry. Specifically, a particular breed of real estate developers, the "community builders," has been instrumental in shaping zoning and subdivision regulations in the 1920s and 30s (Weiss, 1987) and the communities built by these

developers have set the standards for suburban and exurban development (Jackson, 1987). Nevertheless, the impacts of the community developers' practice on the planning profession is largely understudied, and developers have largely been oversimplified and stereotyped. In the planning field, for instance, developers are often characterized as a homogenous group profiteering from land commodification, standing at odds with planners' pursuit of equitable growth (Kim et al., 2020).

In-depth research into exceptional planned communities suggests that large-scale master planned communities may be different from conventional property developments. The new town research, for example, suggests that the developer's vision and business decisions can affect the racial and socioeconomic diversities of planned communities, as some developers have deliberately strived to create racially and socially integrated communities (Forsyth, 2006). Industry proceedings published by the community developers in recent years further indicate that planned communities of the 2000s are built with heightened sensitivity towards enhancing diversity, equity, and inclusion (Davis et al., 2020). Accordingly, this paper examines contemporary planned community development practices to identify if and how the developers' strategy, vision, and financial interests, among other factors, may explain the racial and socioeconomic diversity, housing affordability, and inclusiveness in their planned communities. We compile a database of the nation's largest master planned communities, including both quantitative and qualitative data. We then use regression models to identify the factors that may lead to more equitable development outcomes. Our ultimate goal is to offer guidance to planners as they work and negotiate with the community developers, so that these large-scale master planned communities can be pushed towards greater equity outcomes.

Citations

- Marc A Weiss, *The Rise of the Community Builders: The American Real Estate Industry and Urban Land Planning* (Washington, D.C.: Beard Books, 2002).
- Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York Oxford: Oxford university press, 1987).
- Minjee Kim et al., "Real Estate Development and Economic Development Planning Education: Pragmatic Turn or Trojan Horse?," *Journal of Planning Education and Research*, October 13, 2020, 0739456X2096356, <https://doi.org/10.1177/0739456X20963568>.
- Ann Forsyth, *Reforming Suburbia The Planned Communities of Irvine, Columbia, and The Woodlands* (Berkeley: University of California Press, 2005).
- Vicki Davis, Daryl J. Carter, and Rosemarie Hepner, "What Works for Building and Sustaining Mixed-Income Communities: A Perspective from the Development Community," *ULI Americas*, April 24, 2020, <https://americas.uli.org/whatworksessay/>.

Key Words: Planned Communities, Equitable Developments, Master Planned Communities, New Towns, New Community Development

WHAT CAN COMMUNITY BENEFITS AGREEMENTS LEARN FROM ALLIED POLICIES?

Abstract ID: 1334

Abstract within Pre-Organized Session 37

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Community Benefits Agreements (CBAs) have risen in popularity and usage in the twenty first century. The approach offers an intuitive appeal, involving community members in the process of articulating community needs while facilitating private investment. Much has been written about their legal basis, goals, and challenges, and many CBA cases have been profiled either individually or in groups. A majority of the benefits, challenges, loopholes, and opportunities identified in the CBA literature are well-summarized. Since the advent of CBAs, many similar (and seemingly similar) policy approaches have been developed, including Community Benefits Ordinances, REDD programs, Development Agreements, Impact Benefit Agreements, and others. These allied policies and practices have effectively operated in silos. Via a systematic literature review, this paper catalogs and analyzes those allied policies, and asks what those policies offer in the way of practices and innovations that could be used to productively improve CBA policy in the US.

Our review begins with a level-setting background section outlining the context and boundaries of CBAs in contemporary usage and identifying allied approaches that operate under different names. In this research, "allied" means that policy approaches involve the public in the negotiation process, or are negotiated entirely between the government and private actors where government promotes the same benefits CBAs are designed to achieve. We do not include literature describing the public benefits of economic development generally, economic impact studies, community engagement in economic development, or research on cooperative agreements that exist primarily for financing purposes, such as most public private partnerships. We conduct an Extending Review within the broader category of a Thematic Synthesis literature review around these policies, extracting and synthesizing themes from the

literature.

We identify more than 600 related articles, which we narrow to 140 for data extraction. Based on a systematic data extraction and synthesis, the paper presents lessons pertaining to the central criteria of CBAs: place-based development, community engaged, physical development orientation, community benefit goals.

Citations

- Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93-112.
- Wolf-Powers, L. (2010). Community benefits agreements and local government: A review of recent evidence. *Journal of the American Planning Association*, 76(2), 141-159.
- Loutit, J., Mandelbaum, J., & Szoke-Burke, S. (2016). Emerging practices in community development agreements. *Journal of Sustainable Development Law and Policy (The)*, 7(1), 64-96.

Key Words: Community Benefits Agreements, economic development, equity, community development

DESPERATE FOR DEVELOPMENT: THE TENUOUS NATURE OF EQUITY IN RICHMOND, VA

Abstract ID: 1335

Abstract within Pre-Organized Session 37

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On November 9, 2017, the City of Richmond released a request for proposals for the redevelopment of a 12-block area of downtown. With only 90 days over Thanksgiving and the winter holidays, the proposal required community engagement, plan creation, and technical work. Unsurprisingly only one group responded and were subsequently selected by the mayor. Initially referred to as either the North of Broad or Downtown Neighborhood Redevelopment Project, the new developers rebranded the redevelopment as Navy Hill, which was the name of the Black neighborhood destroyed by the previous development of the area. The rebranding of the development, the minimal community benefits and the lack of meaningful community engagement set off a community mobilization effort that forced critical questions about the purpose, need and beneficiaries of development. It failed in a final vote before the Richmond City Council in 2020.

Throughout the history of Richmond's downtown development in the 20th and 21st century, the city, like many across the country, argued for a need for development to expand the tax base, create jobs, build affordable housing and attract new, typically young and affluent workers to the city. This has been particularly relevant in southern cities where resistance to organizing has been high and the drive to appear as a "new" south is critical to urban identities (Stone 1989, Silver 1984). In the 1950s, city residents voted down highway construction twice before the state overrode the vote and created an independent highway authority to take land, which ultimately destroyed nearly all of Richmond's historically Black neighborhoods, including Navy Hill. In the early 2000s, the city created the first of two - ultimately failed - proposals for the redevelopment of Shockoe Bottom, the site of the second largest sale of enslaved people from 1845-1865. Like Navy Hill, Richmonders showed up at hearings, called their council members and ultimately defeated the development. However, rather than try again with a new community-centered approach, city leaders returned with a similar slate of community benefits in a new location, rather than developing community-based partnerships.

Arguing that the only way to make the city viable is through profit-centered planning belies a desperation for development that puts equity as an add-on or negotiated benefit to development, rather than its central goal (Howell 2016). Further, this framing, which suggests a city in economic and livability crisis, creates a necessary rationality of development at any cost (Summers 2019). Though community benefits such as public space, affordable housing or hiring can be a useful tool for ensuring that community is not completely forgotten, they are often poorly enforced, limited in scope and insufficient to address the impact of development (Wolf-Powers 2010; De Barbieri 2016). They further require an organized community entity and power that is listening to the community demands. Moreover, they still place equity as an afterthought to the larger rationality of development and undermine the possibility of a community-driven (Roberts and Kelly 2019) or inclusive (Quick and Feldman 2011) process.

Using interviews of participants in the Navy Hill process, content analysis of documents and direct observation of meetings, we investigate the roots of Richmond's drive for development, the implications for equity and the barriers to resistance or reimagining of space in southern cities. We further explore the patterns of governance in Richmond that enable these patterns of development proposals over time. We argue that the historic and racialized resistance to organizing and community voice by white leaders stymie power development in southern cities. Further, the desperation for development frame creates a false binary where development at any cost is contrasted against doing no development, and subsequently, seeing new benefits for equity.

Citations

- Silver, Christopher. 1984. *Twentieth-Century Richmond: Planning, Politics, and Race*. Twentieth-Century America Series. Knoxville: University of Tennessee Press.
- Stone, Clarence. 1989. *Regime Politics Governing Atlanta, 1946-1988*. Lawrence, Kansas: University of Kansas Press.
- Wolf-Powers, Laura. 2010. "Community Benefits Agreements and Local Government: A Review of Recent Evidence." *American Planning Association. Journal of the American Planning Association* 76 (2): 141–59.
- Roberts, Andrea, and Grace Kelly. 2019. "Remixing as Praxis: Arnstein's Ladder Through the Grassroots Preservationist's Lens." *Journal of the American Planning Association* 85 (3): 301–20. <https://doi.org/10.1080/01944363.2019.1622439>.
- Summers, Brandi Thompson. 2019. *Black in Place: The Spatial Aesthetics of Race in a Post-Chocolate City*. Chapel Hill: University of North Carolina Press.

Key Words: Equity, Development, Power, Process

THE PURPLE LINE CORRIDOR COALITION: BUILDING A SUSTAINABLE AND EQUITABLE LIGHT RAIL CORRIDOR

Abstract ID: 1336

Abstract within Pre-Organized Session 37

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The State of Maryland is building a new light rail system due to open in 2026 called the Purple Line. It will span the inner suburbs of two suburban Maryland counties just outside Washington DC and connect major activity centers and existing Metro subway stops along its 16-mile route. The Purple Line will greatly increase transit accessibility to jobs and other points of interest along its path, potentially increasing land values in neighborhoods where many minority, low-income residents and small businesses are vulnerable to displacement (Lung-Amam and Dawkins, 2020; Peng et al. 2022).

To prevent such displacement, the Purple Line Corridor Coalition (PLCC) was established in 2013. Led by the National Center for Smart Growth at the University of Maryland, the PLCC includes representatives of Montgomery and Prince George County executives and planning departments, Enterprise Community Partners, CASA de Maryland, and many other nonprofit organizations and municipal governments. In 2016, the PLCC crafted the Purple Line Community Development Agreement (CDA) signed by the executives and council members of both Counties, the President of the University of Maryland, and the leaders of many other community organizations. The CDA includes four major goals—preserving small business and fostering economic development, providing housing opportunities for residents of all income levels, promoting workforce development, and maintaining vibrant and culturally rich neighborhoods. Since then, the PLCC has worked collaboratively to advance these goals and secured millions of dollars in funding from public and private sources.

Previous research has shown that without concerted efforts to prevent gentrification and displacement, new investments in light rail transit have to potential to have major adverse social impacts (Zuk et al. 2017). Research has also shown that preventing such adverse impacts requires the persistent and coordinated efforts of multiple public, private, and community-based organizations (Sandoval and Herrera 2015). This is the reason the PLCC was established.

In this paper, we present the history and performance of the PLCC, identify its strengths and weaknesses, and offer lessons for other coalitions in transit corridors and other contexts. It builds on community and cross-section coalition theory (Butterfoss and Keger 2002) often applied in other contexts such as public health, environmental advocacy, and regional planning. Based on analyses of the work conducted by the PLCC, interviews with its leaders and members, and its accomplishments to date, the paper suggests the PLCC exhibits many of the characteristics identified as critical to the success of coalitions in other contexts. The analysis also suggests, however, that the sustenance of the PLCC will depend on its ability to overcome the many challenges that face multi-sector community coalitions. The paper concludes with lessons for the PLCC and other coalitions seeking to prevent gentrification in transit corridors.

Citations

- Butterfoss, F., & Kegler, M. (2002). Toward a comprehensive understanding of community coalitions: Moving from practice to theory. In R. J. DiClemente, R. A. Crosby, & M. C. Kegler (Eds.), *Emerging theories in health promotion practice and research: Strategies for improving public health* (pp. 194-227). San Francisco, CA: Jossey-Bass.
- Lung-Amam, Willow & Dawkins, Casey. 2020. The power of participatory story mapping: Advancing equitable development in disadvantaged neighborhoods. *Community Development Journal* vol. 55 (3), 473-495. <https://doi.org/10.1093/cdj/bsy064>
- Peng, Qiong and Gerri Knaap, 2022, When and Where Do Home Values Increase in Response to Planned Light Rail Construction? *Journal of Planning Education and Research*, in review
- Sandoval, G. F., & Herrera, R. (2015). Transit-Oriented Development and Equity in Latino Neighborhoods: A Comparative Case Study of MacArthur Park (Los Angeles) and Fruitvale (Oakland). TREC Final Reports. <https://doi.org/10.15760/trec.58>
- Zuk, Miriam, Bierbaum AH, Chapple K, Gorska K, Loukaitou-Sideris A. Gentrification, Displacement, and the Role of Public Investment. 2017. *Journal of Planning Literature* vol. 33 (1), 31-44. doi:10.1177/0885412217716439

Key Words: Community Coalition, Gentrification, transit corridor, social equity, public engagement

PLANNING, POLICING AND ABOLITION 2

Pre-Organized Session 97 - Summary

Session Includes 1560, 1561, 1562, 1563, 1634

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This session brings together planning scholarship to address three interrelated themes: 1) the relationships between planning and policing (broadly including courts jails, prisons, immigration detention, reentry, state violence, parole etc); 2) using planning methods and theories to examine the inequitable impacts of policing (including questions around, budgets and financialization, transportation, disaster planning, housing etc); 3) thinking about the possibility for planning to support abolitionist futures (thinking about transformative justice, community safety, care ethics etc).

Objectives:

- relate to ideas and practices of carceral and abolition planning

BOMBA PLANNING: MOVING ACROSS INVITED AND INVENTED SPACES OF ACTION IN PURSUIT OF A JUST RECOVERY

Abstract ID: 1560

Abstract within Pre-Organized Session 97

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Disaster planning literature shows how grassroots groups play an important role in the face of disasters, filling critical gaps left by government recovery processes and helping those most vulnerable (Irazábal & Neville, 2007). Yet, there is little detailed knowledge about the grassroots planning practices used to advance a just recovery. As the grassroots move across what Mirafteb (2017) calls invited and invented spaces of action, they mobilize and combine a wide-range of socially transformative practices and meanings. Also, little research explores the evolving landscape of networks and coalitions of groups that give form to the grassroots as they maneuver across invited and invented spaces of action.

To better understand these underexplored dimensions in disaster recovery, this paper suggests that one must look at the dynamic, interactive relationships between grassroots movements and the communities they serve from an insurgent planning perspective. Applying an insurgent planning lens to look at post-disaster environments sheds light on the often occluded planning practices and meanings mobilized by the grassroots. Beyond participating in invited spaces, the paper will show how grassroots groups invent spaces and opportunities for a just recovery. Through protest, proposal, and direct action, they create innovative forms of communication and engagement. They use performance, music, design, social media, encampments to occupy, and other methods to create and defend their spaces of struggle.

This paper uses an insurgent planning framework to explore the grassroots movements in Puerto Rico post-María. Through the lens of insurgent planning, one can analyze three key factors: (1) the capacity of planning extended to community organizers, activists, and everyday citizens, (2) the spaces of direct action, which can be in collaboration with, in opposition to, or “completely beyond the purview of state-sanctioned, formal planning processes” (Beard

2002, p. 15), and (3) the practices and meanings mobilized by grassroots movements to advance their recovery agendas. Adopting a case study research method, the paper presents three key cases that illustrate how the grassroots maneuver across invited and invented spaces of action during disaster recovery to advance their decolonizing vision and anti-colonial praxis. To highlight the distinctive features of the Puerto Rican grassroots, the paper articulates the notion of bomba planning as transformative practices and meanings mobilized through invited and invented spaces of action based on a co-constitutive grassroots-community engagement.

Fieldwork research was done between October 2017 and August 2021, and included semi-structured, in-depth interviews with leaders of five organized groups in Puerto Rico, and open-ended interviews with residents, community leaders, and activists. The paper also draws from observations during community events, workshops, and meetings, both in situ and virtual, and from secondary sources of data, including organizational documents and publications, audio-visual materials, news reports, social media, and others.

Citations

- Beard, V. A. (2002). Covert planning for social transformation in Indonesia. *Journal of Planning Education and Research*, 22(1), 15-25.
- Huq, E. (2020). Seeing the Insurgent in Transformative Planning Practices. *Planning Theory* 19(4), 371-391.
- Irazábal, C., & Neville, J. (2007). Neighborhoods in the Lead: Grassroots planning for social transformation in post-Katrina New Orleans?. *Planning, Practice & Research*, 22(2), 131-153.
- Miraftab, F. (2017). Insurgent practices and decolonization of future(s). In A. Madanipour A and V. Watson (Eds.), *Routledge Handbook of Planning Theory* (pp. 276-288). Routledge.

Key Words: insurgent planning, bomba planning, disaster recovery, Puerto Rico

PRODUCING ABOLITION: INSIGHTS FROM SEATTLE’S CAPITOL HILL OCCUPIED PROTEST

Abstract ID: 1561

Abstract within Pre-Organized Session 97

BISSIRI, Tony [The University of Texas at Austin] bissiri@utexas.edu, presenting author

Academics in the spatially focused social sciences have relied on Henri Lefebvre's theory of the social production of space to understand how protest in urban public space is a practice which contests hegemonic and oppressive capitalist structures (Halvorsen, 2015). Lefebvre's focus on space makes his theories attractive to planning scholars, who have applied them to both theoretical and applied planning research (Carp, 2008). However, as observed over two decades ago by McCann (1999), a glaring gap in Lefebvre's theories is that they fail to acknowledge issues of race. Given the central roles race and white supremacy play in the struggle for justice in U.S. cities, is Lefebvrian theory at all useful in understanding contemporary social movements' impacts on urban politics and planning?

To investigate this theoretical question, I draw on empirical research conducted with individuals who participated in the Capitol Hill Occupied Protests (CHOP) in Seattle in 2020. Part of the global George Floyd protests, CHOP was established when protesters “occupied” the public space of six city blocks surrounding a Seattle Police Department precinct. During the following one-month period, the SPD drastically reduced their presence in the area, and demonstrators developed robust networks of mutual aid for those present in the space. To gather a recollection of the events of this case, I conducted informal interviews individuals who participated in the CHOP and/or the events directly leading to its establishment.

Within participants' responses, I identified three major themes: freedom of movement, radical re-imaginings, and vulnerability to violence, all three of which are only adequately understood when grounded in theories of race. Thus, by attempting to apply the theory of the social production of space to conversations had with interviewees, I find that by itself the theory fails as an analytical framework to appropriately address the dimension of race. However, I argue that when synthesized with the theories of DuBois' (1998) abolition democracy and Gilmore's (2018) abolition geography, the production of space can be reconceived as an effective framework through which to understand how protest in urban spaces contest the central hegemony of racial capitalism in the U.S.

I conclude with an argument that a theory of the abolitionist production of space is well-positioned as an option for applying ideas of abolition to planning theory and practice. Such a theory can empower justice-seeking planners to understand how spaces of white supremacy and racial capitalism are produced by even the most routine actions of the profession. Further, this theoretical framework can illuminate how seriously listening to the ideas and demands of abolitionist protest movements can serve as a community engagement strategy that is an effective way to pursue more just planning practices.

Citations

- Carp, J. (2008). "Ground-truthing" representations of social space: Using Lefebvre's conceptual triad. *Journal of Planning Education and Research*, 28(2), 129–142.
- Du Bois, W. E. B. (1998 [1935]). *Black reconstruction in America: Toward a history of the part which Black folk played in the attempt to reconstruct democracy in America, 1860-1880*. The Free Press
- Gilmore, R. W. (2018). Abolition geography and the problem of innocence. *Tabula Rasa*, 28, 57–77.
- Halvorsen, S. (2015). Taking space: Moments of rupture and everyday life in Occupy London. *Antipode*, 47(2), 401–417.
- McCann, E. J. (1999). Race, protest, and public space: Contextualizing Lefebvre in the US city. *Antipode*, 31(2), 163–184.

Key Words: race, protest, social movements, Seattle

REFUSING COP CITY AND SINGING OURSELVES BACK TOGETHER: MUSCOGEE FUTURITY IN ATLANTA'S WELAUNEE RIVER FOREST

Abstract ID: 1562

Abstract within Pre-Organized Session 97

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The South River Forest (also known as the Welaunee River to Muscogee people) is the site of violent settler practices: expropriation of Muscogee land, a plantation with enslaved people, and my a prison farm. The land has reverted to forest—growing back a decarceral world of human and more-than-human kin. However, a carceral disruption is impending because the former prison farm is the location for a police training facility that will contain a simulated city; Atlanta's city council passed an ordinance to set aside nearly 400 acres of forest land leased at \$10 per year to the Atlanta Police Foundation. In response Muscogee people are (re)membering, and emplacing their presence in their original homelands and singing themselves back together through Muscogee song and stompdance. They are entering relationality with other stakeholders of this site to reckon with pain, hope and conceiving of a spatial imaginary that rematriates the land. The paper will speculate what Black and Indigenous futures could look like on this landscape invoking an Indigenous feminist planning praxis.

Citations

- Dorries, H., Hugill, D., & Tomiak, J. (2019). Racial capitalism and the production of settler colonial cities. *Geoforum*.
- Bates, L. K., Towne, S. A., Jordan, C. P., Lelliott, K. L., Bates, L. K., Towne, S. A., ... & Roberts, A. R. (2018). Race and spatial imaginary: Planning otherwise/introduction: What shakes loose when we imagine otherwise/she made the vision true: A journey toward recognition and belonging/isha Black or isha White? Racial identity and spatial development in Warren County, NC/colonial city design lives here: Questioning planning education's dominant imaginaries/say its name—Planning is the White spatial imaginary, or reading McKittrick and Woods as planning text/Wakanda! Take the wheel! Visions of a Black green city/if *Planning Theory & Practice*, 19(2), 254-288.
- Dorries, H. (2022). What is planning without property? Relational practices of being and belonging. *Environment and Planning D: Society and Space*, 02637758211068505.
- Harjo, L. (2019). *Spiral to the stars: Mvskoke tools of futurity*. University of Arizona Press.
- Womack, C. S. (1999). *Red on red: Native American literary separatism*. U of Minnesota Press.

Key Words: Decarceral, Indigenous, Relationality, Futurity, Abolitionist

CARCERAL LOGICS IN PLANNING: IMPACTING AND POLICING MIGRANT WOMEN'S BODIES

Abstract ID: 1563

Abstract within Pre-Organized Session 97

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Carceral logics drives much policy-making and practice at multiple levels of governance. Biden's proposal at the state of the union address in March of 2022 highlighted his commitment to more funding for police. Through State legislatures across the US, bills are being passed that criminalize women's health care and critical race theory. Despite the loud calls for defunding the police in response to the murder of George Floyd and many other people of color, the killing continues. In addition to more policing, the courts and prisons wield extreme power over how issues are "solved" (Massaro & Boyce 2021). The results include more mass incarceration in prisons, immigration detention centers, and squalid conditions at the Mexican border, where brown Central American immigrants are stalled (Boyce 2021), and white Ukrainian migrants are welcomed to cross. A combination of these sectors and the idea of

punishment and violence as solutions to problems and maintenance of the status quo constitute carceral logics.

State planners work in the contexts of carceral logics. In some cases, the work of planners enacts carceral logics; in other cases, it enables carceral logics, and in other cases, it is silent on carceral logics. Some policies have mirrored carceral logics for immigrants and those that would support them by renting to them, employing them, or providing any number of supports to migrants. However, in some cases, policymakers and planners have challenged the power of these logics concerning immigrants. The federal DACA program has had positive impacts on young immigrants. Some states have instituted policies that permit immigrants without documents to have drivers' licenses. A handful of cities have declared themselves to be sanctuary cities supporting the human rights of all residents. There have been obstacles for urban planners even if they desire to break with the carceral logics prevalent in physical, social, economic, and environmental planning.

Based on work in three communities of migrant women, Chicago, IL, Norristown, PA, and Salem, MA, I provide evidence of how municipal planning and policy has enacted the punishment and violence of carceral logics on the bodies of migrant women. Using data from these sites, I document the subtle and not-so-subtle practices planners use that impact and police migrant women's bodies. For example, in Salem, MA., the acute disrepair of city streets in the Point, a predominantly Dominican immigrant community, has been emotionally and physically impacted the bodies of the women in this neighborhood. Through body map storytelling in the spring of 2022 in Salem, the participants documented the visceral experiences with the city's infrastructure, housing options, and services. One woman drew her right cheek red and bloody and the ongoing pain in her right hand from a fall over a treacherously uneven sidewalk. The city's infrastructure enforced and maintained an order of disorder, a status quo of inequality, or a system of power imbalances. The practices of planning have abandoned this neighborhood relative to the other much more touristy areas of the city, famous for its history of witches and the home of the Peabody Essex Museum.

My goal with this paper is to document how planners' work is linked to carceral logics, specifically in the case of women migrants, rendering their bodies subservient to municipal policing practices. Then I will suggest how a combination of community accountability and cultural humility could combine to reset relations, space, and time for more equity planning. This type of planning would move away from carceral logics of policing and punishment to spaces of respect, reciprocity, and repair (Dorries & Harjo 2020).

Citations

- Arenas, I., & Sweet, E. L. (2019). The organizing logics of predatory formations: Militarization and the spectacle of the (in) security state. In *Disassembled Cities* (pp. 73-82). Routledge.
- Boyce, G. (2021). Home, Interrupted. *ACME: An International Journal for Critical Geographies*, 20(6), 618-636.
- Dorries, H., & Harjo, L. (2020). Beyond safety: Refusing colonial violence through indigenous feminist planning. *Journal of planning education and research*, 40(2), 210-219.
- Massaro, V., & Boyce, G. (2021). Carceral Geographies, Police Geographies, and the Networked Continuum of State-Sanctioned Coercion and Control. *ACME: An International Journal for Critical Geographies*, 20(6), 569-578.
- Sweet, E. L. (2016). Carceral feminism: Linking the state, intersectional bodies, and the dichotomy of place. *Dialogues in Human Geography*, 6(2), 202-205

Key Words: carceral-logics, policing, migrant women, visceral methods, community accountability

CARCERAL URBANISM: POLICING THROUGH URBAN PLANNING FROM CHOLERA TO GENTRIFICATION

Abstract ID: 1634

Abstract within Pre-Organized Session 97

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In recent years, critical scholars have taken a fresh look at urban planning and its relationship to the carceral state (on the one hand) and prison-industrial-complex abolition (on the other hand). Aiming to contribute to this emerging literature, this paper explores the connections between urban planning and policing in three historical moments: (1) the reform or progressive era; (2) the urban renewal era; and (3) the gentrification era. Planning and policing, the paper shows, were intimately linked in these three moments. Planning and policing shared a common perspective on urban crime, its origins, and the means of combating it. Planning also operated as the police in many cases, using spatial interventions to address "criminal" issues. And planning collaborated with the police, often remaking spaces to facilitate police surveillance and other operations. Recognizing these links, the paper concludes, broadens the political terrain for abolitionists and underscores emerging political demands that planners discard their ideological and practical connections to policing and the broader prison industrial complex.

Citations

- SA Simpson, J Steil, A Mehta (2020). Planning beyond mass incarceration. *Journal of Planning Education and Research*.
- T Rutland (2021). Nowhere land: The evicted space of Black tenants' rights in Montreal. *Environment and Planning D: Society and Space*.
- S Sherman (2020). From Revanchism to Inclusion: Institutional Forms of Planning and Police in Hyde Park, Chicago. *Journal of Planning Education and Research*.

Key Words: abolition

PLANNING, POLICING AND ABOLITION

Pre-Organized Session 98 - Summary

Session Includes 1566, 1864, 1902

SERVON, Lisa [University of Pennsylvania] servon@design.upenn.edu, organizer

This session brings together planning scholarship to address three interrelated themes: 1) the relationships between planning and policing (broadly including courts jails, prisons, immigration detention, reentry, state violence, parole etc); 2) using planning methods and theories to examine the inequitable impacts of policing (including questions around, budgets and financialization, transportation, disaster planning, housing etc); 3) thinking about the possibility for planning to support abolitionist futures (thinking about transformative justice, community safety, care ethics etc).

Objectives:

- Familiarity with carceral planning and abolition planning

MAXIMUM FEASIBLE DISRUPTION: RECONSIDERING NEIGHBORHOOD PLANNING IN THE CONTEXT OF ABOLITIONIST PRINCIPLES

Abstract ID: 1566

Abstract within Pre-Organized Session 98

WAGNER, Jacob [University of Missouri-Kansas City] wagnerjaco@umkc.edu, presenting author

This paper reconsiders neighborhood planning in the context of abolitionist principles with attention to the work of legal scholar Cheryl Harris (1993) on whiteness as property. Applying abolitionist scholarship in planning raises deep and persistent questions about the function of racially segregated neighborhoods in the United States. This paper argues that planning systems have reinforced and reproduced racial inequality through a dynamic of “planning for permanence” and “maximum feasible disruption.” This dynamic remains a key feature of racialized neighborhood planning and real estate development in Kansas City, Missouri.

Goetz, Williams and Damiano (2020) argue that planning and urban studies have often focused on Black segregation, the so-called Black “Underclass” and “ghetto” research – as opposed to white privilege and white practices of racial exclusion. The failure to focus on whiteness in planning has often replicated a language of Black pathology and ignored racial inequality rooted in the production of white racial advantages.

Further, the underlying theories of neighborhood (in)stability in American sociology have normalized Black instability and obscured the role of white violence in the destabilization of stable and diverse neighborhoods. Narratives of Black pathology provide justifications for the over-policing of Black neighborhoods and the exposure of Black citizens to higher levels of state-sponsored violence and incarceration.

One of the guiding concepts in the spatial production of suburbia was the idea of “planning for permanence” promulgated by real estate developer J.C. Nichols in 1948. Permanence, Nichols argued, was a matter of national concern that should be addressed by the private real estate industry. With the increasing association between property values and the racial identities of residents, Nichols’ business model promoted a form of whiteness as property in neighborhood planning and development.

Much of early 20th century planning revolved around the management of neighborhood development in the context of industrialization and urbanization. Beyond the theory of the ideal neighborhood unit – city planning, and private real estate practices managed neighborhood (dis)investment with strikingly different outcomes for white and non-white neighborhoods. The flip side of planning for (white) permanence was the production of spaces of uncertainty – maximum feasible disruption - for Black neighborhoods subject to market and governmental interference rooted in a racialized (de)valuation of diverse urban spaces and Black property ownership.

Numerous planning strategies – racial zoning, redlining, racially-restrictive covenants, and urban renewal to name a few - sought to control the location of Black families in relationship to existing and planned residential neighborhoods. The “Black family” and Black neighborhoods have largely been treated as a “problem” in American sociology with significant influence on the treatment of neighborhoods within planning. As a result, the management of neighborhood (in)stability as a racialized process has been a central organizing principle of modern city planning and real estate in the United States. Betancur and Smith (2016, 31) argue that planning helped to create a “geography of reserve” - defined by racialized residents, de-valORIZED labor, and real estate disinvestment - for redevelopment and gentrification.

Neighborhoods are more than residential real estate submarkets (Bates 2006), they are political units where voters live, policies are applied, and public officials seek election. They are also parts of police patrol districts and the context for policing. Applying abolitionist thinking to neighborhood planning requires planners to raise attention to the disruption of Black neighborhoods and persistent role that racial segregation plays in state sponsored violence.

Citations

- Bates, L. K. 2006. Does Neighborhood Really Matter?: Comparing Historically Defined Neighborhood Boundaries with Housing Submarkets. *Journal of Planning Education and Research*, 26(1), 5–17. <https://doi.org/10.1177/0739456X05283254>
- Betancur, J. and J. Smith. 2016. *Claiming Neighborhood: New Ways of Understanding Urban Change*. Urbana: University of Illinois Press.
- Goetz, E., R. A. Williams and A. Damiano. 2020. Whiteness and Urban Planning, *Journal of the American Planning Association*, 86:2, 142-156, DOI: 10.1080/01944363.2019.1693907
- Harris, C. 1993. Whiteness as Property. *Harvard Law Review*. 106 (8): 1707-1791.
- Thomas, J. M. 2004. Neighborhood Planning: Uses of Oral History. *Journal of Planning History*, 3(1), 50–70. <https://doi.org/10.1177/1538513203262047>

Key Words: Abolition, Whiteness, Neighborhood Planning, Neighborhoods, Policing

POLICY ENFORCEMENT: THE RELATIONSHIP BETWEEN URBAN PLANNING AND POLICE

Abstract ID: 1864

Abstract within Pre-Organized Session 98

GREEN, Tiffany [UCLA] green.tiffanyd@gmail.com, presenting author

Local governments rely on police to enforce urban space, specifically within policies that promote urban security and safety, managing the urban form, and maintaining order. Doing so places bureaucratic, political, financial, and social pressures on policing institutions, which creates new forms and strategies of policing (Gordon, 2020). Research about how urban planning policy requires police enforcement is sparse, where existing research concentrates primarily on the violence of banishment, gentrification, and revanchism (Roy et al., 2020; Beck, 2020; Smith, 2005). Sherman (2019) discusses how urban plans create new forms of police through enforcement strategies, highlighting the need for urban planning scholarship to analyze the various police practices that emerge from plan recommendations.

Toward that end, this research explores how city general plans and city employees informing urban space discuss police, police enforcement, and mechanisms for monitoring the outcomes of police enforcement of plan policies. The project involves two tasks: text analysis of California general plans and interviews with California city government employees.

For the first task, I perform a topic modeling analysis of the text surrounding police and police-related mentions in California general plans to reveal how plans address policing. The analysis includes plans from all but the ten California cities who have yet to make their general plans accessible digitally. To deepen this analysis, I manually review and qualitatively categorize the mentions on a sample of the plans to uncover details unavailable through the model.

For the second task, I interview city government employees whose roles may involve enforcement of urban space or development in three cities with differing governance or policing structures: a Strong Mayor form of government with its own police department, a City Manager form of government also with a police department and finally a City Manager governance structure with contracted out policing. Employees involved in urban space, development, and enforcement could fall within Urban Planning, Transportation, City Mayor/Manager, Public Safety and Police Departments. I aim to discover how these urban policies that involve enforcement emerge, methods of monitoring their outcomes, communication between departments, and how decision makers regard their influential role in promoting police agency.

Of the plans that mention policing, the prominent topics refer to police as a service the city provides and has a duty to

resource as it grows. While enforcement is a notable topic, evaluation is seldom mentioned. In my conversations with government employees, policies that require police enforcement arise largely from citizen complaints, where success of the intervention is the absence of complaint. With such limited communication or evaluation of implementation, governmental departments and police agencies are unable to analyze a policy's holistic outcomes. By creating new evaluation structures, planners could more clearly see the outcomes of enforcement-related policy and create avenues for communities to envision the future of police involvement in urban space.

Citations

- Gordon, D. (2020). The Police as Place-Consolidators: The Organizational Amplification of Urban Inequality. *Law & Social Inquiry*, 45(1), 1–27. <https://doi.org/10.1017/lsi.2019.31>
- Sherman, S. A. (2020). From Revanchism to Inclusion: Institutional Forms of Planning and Police in Hyde Park, Chicago. *Journal of Planning Education and Research*, 40(2), 139–150. <https://doi.org/10.1177/0739456X19877683>
- Tulumello, S. (2017). Toward a Critical Understanding of Urban Security within the Institutional Practice of Urban Planning: The Case of the Lisbon Metropolitan Area. *Journal of Planning Education and Research*, 37(4), 397–410. <https://doi.org/10.1177/0739456X16664786>

Key Words: planning, policing, enforcement, evaluation, governance

THE FINANCIALIZATION OF THE CRIMINAL JUSTICE SYSTEM: EFFECTS ON WOMEN AND COMMUNITIES

Abstract ID: 1902

Abstract within Pre-Organized Session 98

SERVON, Lisa [University of Pennsylvania] servon@upenn.edu, presenting author

Between 1978 and 2015, the number of women in the U.S. correctional population rose by 834 percent, more than twice the rate of men. Two million women and girls return home every year; one million women currently live under probation, parole, and correctional supervision. During this same period, the criminal justice system became increasingly financialized, evidenced by growth in private prisons and widespread use of legal financial obligations (LFOs) such as fines and fees.

Most research on incarceration and reentry focuses on men or on the justice-involved population as a whole and ignores the unique circumstances of women, and how this increase in the incarceration of women impacts families and communities. This exploratory research begins to fill that gap. Specifically, the paper explores how women's reentry is complicated by their inferior economic status, their caregiving responsibilities, and the justice-related debt they have accumulated. We hypothesize that the financialization of the criminal justice system impacts justice-involved women differently than men.

Analysis of in-depth interviews with twenty justice-involved women, seven criminal law and reentry professionals, and courtroom observations in southeastern Pennsylvania reveals that fines, costs, and fees create intractable reentry barriers for women, contributing to a cycle of prolonged justice-involvement and financial instability.

Our findings demonstrate that the financialization of the criminal justice system contributes to women's greater likelihood of recidivism. Women, whose financial precarity increases with justice involvement, often return to criminal activity after their release out of necessity. Low-income women engage in criminal activity to cover basic expenses. They become incarcerated, a process that adds debt, stigma, and other barriers to their pre-incarceration financial instability. Lack of reentry services and treatment coupled with increased financial precarity contributes to recidivism. Participants expressed a shared sense of increasing financial and legal precarity, whether related to poverty, trauma, or lack of support from male partners. This cycle destabilizes families and communities.

Citations

- Harris, Alexes, Heather Evans, and Katherine Beckett. 2010. "Drawing Blood from Stones: Legal Debt and Social Inequality in the Contemporary United States." *American Journal of Sociology* 115 (6): 1753–99. <https://doi.org/10.1086/651940>.
- Richie, Beth E. 2001. "Challenges Incarcerated Women Face as They Return to Their Communities.Pdf." *Crime and Delinquency* 47 (3): 368–89.
- Heimer, Karen. 2000. "Changes in the Gender Gap in Crime and Women's Economic Marginalization." *Criminal Justice* 1: 427–83.
- Friedman, Brittany, and Mary Pattillo. 2019. "Statutory Inequality: The Logics of Monetary Sanctions in State Law." *Rsf* 5 (1): 173–96. <https://doi.org/10.7758/RSF.2019.5.1.08>.

- DeVuono-Powell, Saneta, Chris Schweidler, Alicia Walters, and Azadeh Zohrab. 2015. "Who Pays? The True Cost of Incarceration on Families." Oakland, California. <http://whopaysreport.org/wp-content/uploads/2015/09/Who-Pays-FINAL.pdf>.

Key Words: community development, mass incarceration, gender, families

PLANNING, POLICING AND ABOLITION - ROUNDTABLE

Pre-Organized Session 105 - Summary
Session Includes 1646, 1647, 1648, 1862

SERVON, Lisa [University of Pennsylvania] servon@design.upenn.edu, organizer

This session brings together planning scholarship to address three interrelated themes in an interactive roundtable: This session brings together planning scholarship to address three interrelated themes: 1) the relationships between planning and policing (broadly including courts jails, prisons, immigration detention, reentry, state violence, parole etc); 2) using planning methods and theories to examine the inequitable impacts of policing (including questions around, budgets and financialization, transportation, disaster planning, housing etc); 3) thinking about the possibility for planning to support abolitionist futures (thinking about transformative justice, community safety, care ethics etc)

Objectives:

- relate to ideas and practices around carceral and abolitionist planning

BLACK-ASIAN SOLIDARITY? PROMISES AND PITFALLS IN PLANNING FOR FRACTURED COMMUNITIES

Abstract ID: 1646
Abstract within Pre-Organized Session 105

KIM, AJ [San Diego State University] anna.kim@sdsu.edu, presenting author

In this paper I seek to conceptualize the discomfort through which planners avoid more nuanced understandings of "race" in America. Locating Asian Americans within a racial hierarchy that both otherizes and privileges the monolith of the "Asian" body results in both low and high inter-group and social costs, and a precursor to how racial violence is perpetuated through state and local institutions. The most recent context of increasing and escalating "Anti-Asian" violence from 2020 through today, will be juxtaposed with social movements both for and against increased calls for policing across major US cities.

"Viral" media messaging has focused on and created a dominant narrative that BIPOC violence against Asians and Asian Americans is on the rise. Structural and societal mechanisms for sustaining white violence against people of color benefit from this narrative, this re-donned disguise. Here again, Asian Americans occupy a tertiary position that fulfills a racial wedge, a path that is lined with future forms of racial violence, and ongoing formations of spatial and racial buffer zones. In particular Umemoto's framework around the concept of "buffer places" and "racial buffers" will be utilized here to further understandings of how racial violence is perpetuated through the form and function of complex urban racialization processes – as explored through the planner's and planning's role in it the maintenance and creation of racial violence and white supremacy.

I'll discuss how policy and media narratives stir both Anti-Black and Anti-Asian sentiment, simultaneously, and purposefully, creating and maintaining tensions between and outside of various racialized groups, and also how Black death (the pursuit and instigation of it) structures the logics of almost all institutional violence – within and also because of the planning profession. Planners need to be able to see these nuances and dynamics of racialization, racial buffering, and racial violence, in order to confront how we ourselves perpetuate and further violence in our own agencies and institutions, in communities, neighborhoods, and cities.

Citations

- Umemoto, K., & Mikami, C. K. (1999). A profile of race-bias hate crimes in Los Angeles County.
- Umemoto, K. (1994). Blacks and Koreans in Los Angeles: The case of Latasha Harlins and Soon Ja Du. Blacks, Latinos, and Asians in Urban America: Status and prospects for politics and activism, 95-117.
- Blee, K. M. (2005). Racial violence in the United States. *Ethnic and Racial Studies*, 28(4), 599-619.
- Heynen, N. (2016). Urban political ecology II: The abolitionist century. *Progress in Human Geography*, 40(6), 839-845.

- Roy, A. (2021). Undoing property: Feminist struggle in the time of abolition. *Society & Space*.

Key Words: anti asian violence, segregation, police violence, abolition, social justice

HOW SETTLER LAW CRIMINALIZES INDIGENOUS PLANNING: EXAMINING CAUSES AND PROPOSING ALTERNATIVES

Abstract ID: 1647

Abstract within Pre-Organized Session 105

DORRIES, Heather [University of Toronto] heather.dorries@utoronto.ca, presenting author

In this paper I examine the ways that planning is connected to regime of violence and carcerality. Drawing on scholarship from the field of Indigenous studies, argue that Indigenous legal orders provide a powerful alternative to the legal orders upon which planning practices in currently rely.

In Canada, Indigenous peoples are often excluded from planning processes because the affairs of Indigenous peoples are considered a federal responsibility, while planning is the domain of provincial governments. As a result, Indigenous peoples and interests are often rendered illegible within planning processes, leaving direct action or “protest” one of the few options available to Indigenous communities and in turn contributing to the criminalization of Indigenous expressions of territorial authority (Borrows 1997). From Oka to Caledonia, many major flashpoints between Indigenous and non-Indigenous peoples in Canada have been precipitated by planning decisions. Yet, these events are often portrayed as problems of law and order, masking the historical and political roots of these conflicts, and ignoring the profound effects local planning can have on Indigenous peoples. In her analysis of media coverage of the events at Caledonia, Métis scholar Jennifer Adese found that the Canadian media “actively crafted the image of indigenous peoples as internal terrorist threats” (Adese 2009). Narratives that position Indigenous peoples as criminals and terrorists invite heavy-handed responses and position police or even military intervention as desirable and rational. Moreover, as Indigenous peoples are construed as criminal the criminality of the settler state is masked while the theft of Indigenous land is justified (Stark 2019). These narratives reinforce the racism of settler colonialism and draws attention away from the historical and political contexts—including policy frameworks and planning processes—which created these situations in the first place.

The question of how planning might begin to take Indigenous political authority and legitimacy as its fundamental premise remains largely unanswered. Some of the difficulty of addressing this question may stem from the tendency to focus on the bureaucratic nature of law, and the regimes of hierarchy which it administers. However, Indigenous perspectives on law and legal orders provide some alternatives. Cree legal scholar Val Napoleon observes, law is about what “large groups of people do to manage themselves” and uses the term “Indigenous legal orders” to describe law as embedded in Indigenous social, political, economic, and spiritual institutions. She explains that Indigenous law is inherently linked to Indigenous self-determination and is part of how Indigenous peoples are “building citizenship, responsibility, and governance, challenging internal and external oppressions, safety and protections, lands and resources, and external political relations with other Indigenous peoples and the state” (Napoleon 2013, 47). Following Napoleon, I consider Indigenous planning as both an expression of Indigenous legal orders as well as the basis for the development of alternative approaches to planning relations between Indigenous peoples and the state.

Citations

- Adese, J. (2009). Constructing the Aboriginal terrorist: Depictions of Aboriginal protests, the Caledonia Reclamation, and Canadian neoliberalization. In *Engaging Terror*, Edited by Marianne Vardalos. Boca Raton: Brown Walker Press.
- Borrows, J. (1997). Living Between Water and Rocks: First Nations, Environmental Planning and Democracy. *The University of Toronto Law Journal* 47 (4), 417-468.
- Napoleon, V. (2013) Thinking about Indigenous Legal Orders. In *Dialogues on Human Rights and Legal Pluralism*, Edited by René Provost and Colleen Sheppard. Dordrecht, Germany: Springer.
- Stark, H. K. (2016). Criminal empire: The making of the savage in a lawless land. *Theory & Event*, 19(4).

Key Words: Indigenous planning, law enforcement, settler colonialism

IDENTIFYING OPPORTUNITIES TO BETTER ENGAGE AND SUPPORT COMMUNITY REENTRY STAKEHOLDERS IN LOCAL PLANNING DECISION-MAKING

Abstract ID: 1648

Abstract within Pre-Organized Session 105

KNAPP, Courtney [Pratt Institute] cknapp@pratt.edu, presenting author

The topics of the carceral state, decarceration, and abolitionist planning have gained momentum within local planning theory and practice over the past decade (Goldsmith 2015, Knapp 2020, Simpson, et al 2020). These preliminary discussions have led to lively debates about whether, and the extent to which, planning as a field of professional praxis is capable of being abolitionist or decarceral in nature or orientation, given the field's historical legacies of coordinated and racialized uneven geographic development (Dozier 2018).

My earlier survey (Knapp 2019) of local planning directors about the extent to which their everyday practice enabled or inhibited community reentry revealed significant gaps in the specific knowledge realms needed to support land use, housing policy, economic development, and community engagement decision-making which supports meaningful and substantive community reentry and integration. At the end of this study, I recommended that local public sector planners engage directly with advocacy and support groups involved with community reentry. These groups are often comprised of (formerly) incarcerated people and their families, social workers, housing, employment, and voting advocates, education and employment service providers, health specialists, clergy, and others reentry supporters. By engaging directly impacted and implicated stakeholder groups in conversations about how local planning practice can better support reentry— and in a broader sense, decarceral planning—our field can develop some practical strategies for engaging meaningfully in this emergent work. Toward this end, this paper asks:

What lessons can planners gain from perspectives within the community reentry arena about how to better respond to the unique and acute housing and economic development needs of formerly incarcerated people?

I present the results of a mixed method case study of the Connecticut Reentry Collaborative, an initiative which brings members of the multifaceted community reentry arena together in ten cities across the state. I summarize the socio-spatial contexts in which these collaborative chapters operate, and the structural inequities they respond to— particularly with respect to housing, education, employment, workforce, and economic development, community engagement in land use decision-making, and civic engagement. I describe the origins and evolution of the Collaborative, paying special attention to the micropolitics of stakeholdership, educational programming, and social networking within these place-based advocacy groups. I also include the preliminary results of an ongoing effort to engage Collaborative members in qualitative interviews and focus groups designed to better understand how, from their varied perspectives, local planning practice might better support the reentry and integration of formerly incarcerated people into society, including but not limited to emerging housing and economic opportunity structures.

Citations

- References Dozier, Deshonay. "A Response to Abolitionist Planning: There's No Room for 'Planners' in the Movement for Abolition." *Progressive City* 9 (2018).
- Goldsmith, William W. "The drug war, prisons, and police killings of black men." *Progressive Planning* 2 (2015): 25-28.
- Knapp, Courtney. "Local Planning in the Age of Mass Decarceration." *Journal of Planning Education and Research* 40, no. 2 (2020): 169-185.
- Simpson, Sheryl-Ann, Justin Steil, and Aditi Mehta. "Planning beyond mass incarceration." *Journal of Planning Education and Research* 40, no. 2 (2020): 130-138.

Key Words: Decarceration, Community Reentry, economic development planning, addressing barriers to housing

LEARNINGS FROM THE CLASSROOM AS LIBERATORY PRACTICE - AN ABOLITIONIST PEDAGOGY WORKSHOP SERIES

Abstract ID: 1862

Abstract within Pre-Organized Session 105

LIU, Jody [University of Southern California] jodyl@usc.edu, presenting author

We regard the classroom as a vital site not only for learning the harms of oppression but also for enacting ways of doing and being together that model the alternative world we hope to inhabit. Namely, we see in the classroom the potential for critical pedagogy and liberation.

Too often, we find prevailing teaching techniques and university structures complicit in reproducing the violence of white supremacy, anti-Blackness, neoliberal capitalism, and settler colonialism. We believe that, within the university, the space of the classroom provides a rare opportunity for all participants to experiment with and realize liberatory futures without the harms of our current institutions; in the classroom, everyone is both an educator and a student. There is much we can do together to explore how knowledge might be circulated to support curiosity, care, and collaboration while rejecting certainties, cruelty, and competition.

Our notion of liberation centers abolitionist futures in particular. We invited educators and community members to facilitate workshops that help us to realize pedagogical techniques towards abolition. The series offered methods that we, as members of the classroom, can adopt and augment to challenge normative classroom logics and to foreground the life-giving and socially-sustaining possibilities of education. Learnings from the workshop were also translated into a zine. For the roundtable, we will reflect on how these practices can be applied to planning education--including learning and organizing with unhoused communities, implementing collective visioning through VR, and integrating compassionate/healing-based communication into decision-making processes.

What we mean by “pedagogy”

We consider pedagogy to be both the knowledge that circulates between people as well as the methods through which that circulation happens. As argued by Paolo Freire in his writing on pedagogy and oppression, the classroom generally provides the normative model of the “teacher” who feeds information to the “student” within the site of the “school.” While Freire coined this the “banking method” of education and argued that it dehumanizes students, we, following scholars such as Bettina Love and David Stovall, understand this educational model as carceral, that it is co-constituted by white supremacy, capitalism, ableism, cisheteropatriarchy, and other systems that reproduce domination, objectification, and control. This carcerality can be seen in the emphasis on grades and credits over comprehension, the use of surveillant/punitive softwares, and the hierarchical organization of the classroom space. Thus, when we argue for an abolitionist pedagogy, we argue for a pedagogy committed to recognizing the full humanity of students, teachers, staff, and all other university community members. In other words, abolitionist pedagogy is that which works to resist oppression in the classroom and, instead, envisions new forms of knowledge to circulate and new modes of circulation that sustain all those who practice them.

What we mean by “abolition”

Abolition asks us to imagine a new and better world (or, in this case, classroom), and then work to create that world. Our definition is rooted in W. E. B. Du Bois’ notion of abolition democracy, where abolishing slavery included both the “negative” emancipation of Black people from bondage and the “positive” building of institutions, practices, and resources necessary for Black freedom”. Angela Davis expanded this concept into one that understands the prison-industrial-complex as “a result of the failure to enact abolition democracy”. For Davis, abolition democracy must be understood as still “to come” and requires the creation of “new institutions and resources” to eliminate prisons. It is “an ongoing, dialectical, and fugitive project of mutual liberation,” theorizing “what might become possible”. As abolitionist educators, we are invested in bringing these projects into the university and understand the classroom as one such site of potential fugitivity and liberation.

Citations

- Dilts, A. (2020) “Crisis, Critique, and Abolition” in Fassin, D., & Harcourt, B. In *A Time for Critique*. Columbia University Press. p, 232
- Davis. (2005). *Abolition democracy: beyond empire, prisons, and torture*. Seven Stories Press. p. 91
- Love, B. L. (2019). *We Want to Do More Than Survive: Abolitionist Teaching and the Pursuit of Educational Freedom*. Beacon Press.
- Stovall, D. O. (n.d.). *Born Out of Struggle*. SUNY Press. <https://sunypress.edu/Books/B/Born-Out-of-Struggle>

Key Words: critical pedagogy, abolition, liberation, education

Track 2 Roundtables

IMMIGRANT ACTIVISM AND THE URBAN IMAGINATION: CONTEXTS, INFLUENCES, CONSEQUENCES

Abstract ID: 1367

Roundtable

HERNANDEZ, Ashley [University of California Irvine] ashleych@uci.edu, moderator

GONICK, Sophie [New York University] sophie.gonick@nyu.edu, participant

DEVLIN, Ryan [Pratt Institute] rdevli25@pratt.edu, participant

NICHOLLS, Walter [University of California Irvine] wnicholl@uci.edu, participant

The study of social movements and their role in producing the city has been one important area of research within planning scholarship (Castells, 1983). Meanwhile, immigration has transformed many urban areas, and constitutes a core concern within research on cities, from the foundational work of the Chicago School to more recent inquiry on immigrant urbanism within planning and related disciplines (Miraftab, 2016; Sandoval-Strausz, 2019). Recently, urban scholarship has also looked to immigrant social movements as important sites for the articulation of alternative counterpublics and the claiming of rights and recognition (Nicholls & Uitermark, 2016). Little work, however, has examined immigrant social movements as key drivers of urban change and the city. Yet an emergent strand of research demonstrates that as cities across the North Atlantic become more diverse and unequal, immigrant-led grassroots collectives have been at the forefront of struggles over labor and employment, housing, gentrification, and the recent predations and ravages of the COVID-19 pandemic (Gonick, 2021; Theodore, 2014). In this roundtable discussion, we ask: How do these movements come to be? What kinds of challenges and opportunities do they face? How do they influence the production of the city and the urban? And how might they be productive sites of inquiry for planning scholarship?

In this roundtable discussion, we propose examining immigrant urban social movements and their role in challenging, transforming, and resisting dominant models of planning and policy. Moving beyond analyses of diverse social movements, we will instead explore how immigrant urban activism inflects and shapes modes of organizing and political horizons and prefigure struggles yet to come. Here we consider past activist and political struggles in countries of origin, experiences of racialization and othering, and movement and mobility in producing dissent.

The discussion emerges out of consideration for ACSP's 2022 theme; moving beyond an engagement with voices often absent from the planning discipline, we also seek to highlight immigrant influence within emergent struggles over the city and their repertoires of action. The discussion will bring together scholars working on a number of different fields of struggle within a diversity of sites. These include street vendor activism in New York City in the wake of the pandemic, Ecuadorian struggles against indebtedness in urban Spain, and immigrant activism against gentrification in Southern California. In bringing together a range of case studies and perspectives from planning and related disciplines, the panel seeks to open space to consider the role of immigrant publics within planning, politics, the production of more egalitarian urban imaginaries.

Citations

- Castells, M. (1983). *The city and the grassroots: A cross-cultural theory of urban social movements*. University of California Press.
- Gonick, S. L. (2021). *Dispossession and dissent: Immigrants and the struggle for housing in Madrid*.
- Miraftab, F. (2016). *Global heartland: Displaced labor, transnational lives, and local placemaking*. Indiana University Press.
- Nicholls, W. J., & Uitermark, J. (2016). *Cities and Social Movements: Immigrant Rights Activism in the US, France, and the Netherlands, 1970-2015*. John Wiley & Sons.
- Sandoval-Strausz, A. K. (2019). *Barrio America: How Latino Immigrants Saved the American City*. Basic Books.

Key Words: Immigration, Activism, Social Movements, Housing, Labor

TOWARD A RESEARCH AGENDA OF GENTRIFICATION

Abstract ID: 1426

Roundtable

HERNANDEZ, Ashley [University of California, Irvine] ashleych@uci.edu, moderator
 ZUÑIGA, Michelle [University of North Carolina, Charlotte] mzuniga@uncc.edu, participant
 LOWE, Jeffrey [Texas Southern University] Jeffrey.Lowe@tsu.edu, participant
 GONZALEZ, Erualdo [California State University, Fullerton] egonzalez@fullerton.edu, participant
 HOM, Lauren [California State Polytechnic University, Pomona] ldhom@cpp.edu, participant
 NEVAREZ MARTINEZ, Deyanira [Michigan State University] nevarez1@msu.edu, participant
 LOPEZ-MORALES, Ernesto [Universidad de Chile] elopez@uchilefau.cl, participant
 SAONA URMENETA, Maria Ignacia [Independent Cultural Consultant] ignacia.saona@mail.udp.cl, participant

Gentrification continues to be one of the most debilitating—and least understood— issues in American cities today. This roundtable includes scholars across the United States and the Global South to discuss current research trends in housing and commercial gentrification and displacement and share their own scholarship. Participants will discuss their areas of expertise, including activism, transit-oriented development, housing, and urban design. This work spans a range of contexts, such as the primarily African-American Historic Third Ward in Houston, Texas, Los Angeles Chinatown, Santiago Chile, and Mexican immigrant and Chicana communities in Southern California Santa Ana and Boyle Heights.

This proposed roundtable discussion will be useful to scholars who desire to learn about varied and common contemporary changes taking place in urban areas, particularly as the most marginalized and materially exploited grapple with the pandemic and inflation and threats of a recession. Our panelists will offer insights to the following questions: What have we learned? How might gentrification and urban inequality be different today versus a decade ago? What research directions should we consider to properly account for rising economic inequality, economic restructuring, and racialization?

Citations

- González Romero, E., Zuniga, M., Hernandez, A., & Torres, R. (2022). *Gentrification, Displacement, and Alternative Futures*. Routledge.
- Lees, L., & Phillips, M. (Eds.). (2018). *Handbook of gentrification studies*. Edward Elgar Publishing.
- Lees, L., Shin, H. B., & López-Morales, E. (2016). *Planetary gentrification*. John Wiley & Sons.
- Marcuse, P. (2012). Whose right (s) to what city? In N. Brenner, P. Marcuse, & M. Mayer (Eds.), *Cities for people, not for profit: Critical urban theory and the right to the city* (pp. 24–41). Routledge.
- Smith, N. (1979). Toward a theory of gentrification: A back to the city movement by capital, not people. *Journal of the American Planning Association*, 45(4), 538–548.

Key Words: Gentrification, Displacement, Research

AUTHOR ROUNDTABLE: LAURA WOLF-POWERS, “UNIVERSITY CITY: HISTORY, RACE, AND COMMUNITY IN THE ERA OF THE INNOVATION DISTRICT”

Abstract ID: 2067

Roundtable

ETIENNE, Harley [The Ohio State University] etienne.21@osu.edu, organizer, moderator
WOLF-POWERS, Anna Laura [Hunter College, City University of New York] aw2416@hunter.cuny.edu, participant
GEOTZ, Edward [University of Minnesota] egoetz@umn.edu, participant
DRAKE-RODRIGUEZ, Akira [University of Pennsylvania] akirad@design.upenn.edu, participant
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In twenty-first-century American cities, policy makers increasingly celebrate university-sponsored innovation districts as engines of inclusive growth. But the story is not so simple. Recent experience in University City, Philadelphia viewed in historical context illuminates how the dynamics of innovation district development in the present both depart from and connect to the politics of mid-twentieth-century urban renewal. Even as university and government leaders vow to develop without displacement, what existing residents value is imperiled when innovation-driven redevelopment remains accountable to the property market. In this author roundtable, scholars will discuss recent research on race, uneven development, and the knowledge economy.

Citations

- Wolf-Powers, Laura. *University City: History, Race, and Community in the Era of the Innovation District*. Philadelphia: University of Pennsylvania Press, 2022.
- Baldwin, Davarian L. *In the Shadow of the Ivory Tower: How Universities Are Plundering Our Cities*. Bold Type Books, 2021.
- Clark, Jennifer. *Uneven Innovation: The Work of Smart Cities*. Columbia University Press, 2020.
- Etienne, Harley F. *Pushing Back the Gates: Neighborhood Perspectives on University-Driven Revitalization*. Philadelphia: Temple University Press, 2012.
- Rodin, Judith. *The City and the University: Out of the Ivory Tower and Into the Streets*. Philadelphia: University of Pennsylvania Press, 2007.

Key Words: community revitalization, university-driven development, smart cities, innovation districts

EFFECTIVE ENFORCEMENT OF COMMUNITY BENEFITS AGREEMENTS (CBAS)

Abstract ID: 1011

Individual Paper Submission

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Materializing in the late 1990s, community benefits agreements (CBAs) have sought to reallocate the historically one-sided profits of development projects while mitigating disproportionate repercussions credited to their construction in marginalized communities (Parks & Warren, 2009; Baxamusa, 2008). CBAs aim to allow community members to push for accountable development and just compensation through formal negotiation, exchanging project endorsement for developer concessions. These concessions may include provisions for affordable housing, guaranteed living wage local employment, access to green space and amenities, environmental remediation, but are only limited to the public's needs and the developer's willingness to provide them (Wolf-Powers, 2010).

The imagery of democratic, grassroots coalitions of community organizations and individuals combating negative development consequences is promising at face value. However, across the growing body of academic literature, there is limited knowledge on CBA enforcement and the degree to which terms are ultimately fulfilled in the community (Gross, 2007). This gap also evokes disagreement as to whether either public or private agreements are better suited for the ultimate realization of benefits. To bridge this knowledge gap, this study uses case study analysis of six agreements to answer the following: What methods of enforcement have and are currently employed? What are the unique benefits and challenges of these methods? And how does the brokership (private or public) of CBAs influence its enforcement and ultimate realization? These questions will be answered through a content analysis of [list materials] for six public and private case studies. The private CBAs cases are Columbia West-Harlem, Peninsula Compost Company, and LA Live Sports and Entertainment District and the public CBAs are Gates-Cherokee, Yale-New Haven Hospital, and Digital Inclusion. To analyze this data for each case, I first identified the contextual community and development background, community organizations involved, negotiation process, community benefit terms, enforcement approach, and degree of ultimate fulfillment. I then compared the findings across the cases for potential insight into enforcement best practices or broader, characteristic observations.

The results from this study indicate that there may not be one clear, decisive best avenue for CBA enforcement. This data suggests that agreements without defined enforcement procedures or monitoring encountered the highest degree of implementation difficulty. However, incorporating enforcement terminology does not guarantee the satisfaction of terms. Moreover, the organizational capacities of both the community coalition and the developer are vital. For coalitions, remaining organized post-signature while continuing to push for agreed-upon benefits is an identified obstacle. Also, coalitions may encounter difficulty pushing back against disparities in financial resources and political pull held by developers. For developers, this research identifies that internal administrative policies may lack the knowledge and experience of delivering community benefits. Lastly, this research suggests that the private-public typology may not be a valuable analytical nuance as CBA success or failure is not loyal to any side of this divide. Further analysis using this typology may be clouded by the ambiguity arising from quasi-public agreements or at what point government involvement warrants a public classification. Findings such as these have been shown to can inform the ways that planners, educators, and practitioners incorporate knowledge of CBAs into curricula (Wolf-Powers, 2013) and can further mobilize CBA policies to position municipalities and community groups for accountable development.

Citations

- Baxamusa, M. (2008). Empowering communities through deliberation: The model of community benefits agreements. *Journal of Planning Education and Research*, 27(3), 261-276.
- Gross, J. (2007). Community benefits agreements: Definitions, values, and legal enforceability. *Journal of Affordable Housing & Community Development Law*, 17(1/2), 35-58.
- Parks, V., & Warren, D. (2009). The politics and practice of economic justice: Community benefits agreements as tactic of the new accountable development movement. *Journal of Community Practice*, 17(1-2), 88-106.
- Wolf-Powers, L. (2010). Community benefits agreements and local government. *Journal of the American Planning Association*, 76(2), 141-159.
- Wolf-Powers, L. (2013). Teaching planners to deal: the pedagogical value of a (simulated) economic development negotiation. *Journal of Planning Education and Research*, 33(3), 348-362.

POPUP CIVIC ACTIONS AND THE EVERYDAY POLITICS OF INDIGENOUS RESISTANCE: A CASE STUDY OF THE 2013 DISASTER IN GUERRERO

Abstract ID: 1037

Individual Paper Submission

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The 1985 earthquake that shook Mexico City is widely known as triggering a “social quake” (Esteva, 2015: xiv). An eruption of what we call popup civic actions by grassroots communities marked the birth of a ‘new’ civil society in Mexico (Baker, 2002), and the opening of the political space for renewed indigenous struggles for recognition and participation. The self-organized initiatives became the touchstone for subsequent social movements, notably the 1994 neo-Zapatista uprisings. Central to Zapatismo vision was the concept of ‘autonomy’ which emerged alongside “a renewed notion of civil society to designate a new semantic of social transformation” (Esteva, 2015: xi-xii).

In this paper, we unpack this renewed notion to argue that western liberal views of civil society as passive, apolitical networks of voluntary associations that merely play an instrumental role in disaster reliefs have limited utility for understanding the motivations and mobilizations of indigenous popup civic actions in Mexico. Their inadequacy is not simply because of the “cultural differences or differences in historical backgrounds” of indigenous peoples, but also because of their “differentiated positioning [...] vis-à-vis the state, the law and capital” (Dinerstein, 2016:11). Instead, we propose a radical democratic conceptualization of civil society as the capacity of a public to self-organize and play an active political role in the democratization of the public sphere.

We use this theoretical framework to critically examine the popup civic actions that were catalysed by the emotional and relational forces of the 2013 storm in Guerrero - Mexico’s second poorest state in the south with a large rural and indigenous population. The fieldwork for this case study (covering the municipalities of Acapulco and Coyuca) was undertaken during 2020-21. It involved: semi-structured interviews with affected residents and representatives from: formal civil society organizations, grassroots and indigenous communities and public officials; workshop discussions and site visits; and, content analysis of official reports and media coverage.

Based on the findings from the research, we firstly, call into question the conventional view of disasters as exceptional and temporary disruptions to the normal order, arguing that disasters are often the outcomes of this very order whose intersectional injustices cannot be brushed away by techno-managerial approaches to disaster planning and governance. Revealing “the slower-paced disaster of displacement, dispossession and marginalization which characterizes the colonial and post-colonial experiences of indigenous peoples” (Hsu, 2016:72), we show how these processes have been intensified in Mexico by commodification of indigenous lands (ejidos), and contested through indigenous struggles for autonomy and self-determination. Secondly, we argue that contrary to the depoliticized instrumental views of civil society, indigenous popup civic actions are forms of everyday political resistance that fissure colonization and neoliberalization, and open interstices for alternative practices. This understanding challenges the arbitrary separation of civil society from social movements debates in disaster planning and governance.

In line with the post-colonial planning scholarship (Sandercock, 1997), we conclude the paper by: highlighting the importance of attending to locally-rooted and de-colonized understanding of popup civic actions in the debate about civil society’s role in disaster planning and governance; outlining potential limitations of radical democratic theories of civil society; and, proposing lines of inquiry for future research.

Citations

- Baker, G. (2002) *Civil society and democratic theory*, alternative voices, Routledge
- Dinerstein, A.C. (2015) *The politics of autonomy in Latin America*, the art of organising hope, NY, Palgrave.
- Hsu, M. (2016) *Lost, Found and Troubled in Translation: Reconsidering imagined Indigenous “communities” in post-disaster Taiwan*. *AlterNative: An International Journal of Indigenous Peoples*, 12(1):71–85.
- Sandercock, L. (1997) *Towards cosmopolis: Planning for multicultural cities*, London, Wiley
- Esteva, G. (2015) Foreword, in A.C. Dinerstein, *The politics of autonomy in Latin America*, NY, Palgrave, xiii-xviii.

Key Words: civil society theories, Indigenous peoples, disaster planning, lived experiences, popup civic actions

EVALUATING THE EMPOWERMENT OF INNER CITY PARTICIPATION IN THE BROWNFIELD REDEVELOPMENT PROCESS USING ARNSTEIN'S LADDER: A QUALITATIVE STUDY OF BIRMINGHAM, ALABAMA.

Abstract ID: 1039

Individual Paper Submission

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This case study utilizes Arnstein's Ladder and qualitative analysis to determine perceived levels of empowerment of citizens, public officials, and developers in brownfield redevelopment within predominantly socio-economically disadvantaged neighborhoods in downtown Birmingham, Alabama. It also examines the extent to which stakeholders viewed each project as meeting Birmingham's downtown redevelopment goals. Unlike public officials and developers, citizens perceived their empowerment in the process at levels of tokenism, removed from decision-making. Citizens also viewed Railroad Park, a development with free public access, as more effective in meeting community needs and city redevelopment goals than the Lyric Theatre or Regions Field, which require paid admission. This study concludes that environmental legislation setting the parameters of citizen participation to receiving information and providing input may limit citizens from engaging in higher levels of decision-making. An evaluation of direct and indirect social and economic impacts of redevelopment and more equitable participatory processes is recommended.

Citations

- Arnstein, S. R. (1969). A Ladder of Citizen Participation. *Journal of the American Planning Association*, 35 (4): 216-224.
- Chess, C., & Purcell, K. (1999). Public participation and the environment. Do we know what works? *Environmental Science and Technology*, 33 (16): 2685-2692. <https://doi.org/10.1021/es980500g>
- Contreras, S. (2019). Using Arnstein's ladder as an evaluative framework for the assessment of participatory work in postdisaster Haiti. *Journal of the American Planning Association*, 85 (3): 219-235. <https://doi.org/10.1080/01944363.2019.1618728>
- Rowe, G., & Frewer, L. (2005). A Topology of Public Engagement Mechanisms. *Science, Technology, and Human Values*, 30 (2): 251-290. <https://doi.org/10.1177%2F0162243904271724>
- Solitare, L. (2005). Prerequisite conditions for meaningful participation in brownfield redevelopment. *Journal of Environmental Planning and Management*, 48 (6): 917-935. <https://doi.org/10.1080/09640560500294475>

Key Words: Brownfield Redevelopment, Arnstein's Ladder, Citizen Participation, Public Participation, Citizen Empowerment

COMMUNITY RECOVERY AND SOCIAL COHESION POST-DISASTER

Abstract ID: 1059

Individual Paper Submission

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Experiencing a disaster and losing family and friends are tough by themselves. Imagine being forced to live in a temporary shelter for a while, being detached from friends and family, and not knowing when you can return to your place. This uncertainty is what might happen to Puerto Ricans if the fast community rebounding does not reflect in the disaster recovery process. Puerto Ricans have been through hurricanes, earthquakes, and a pandemic. In 2017, Hurricane Maria devastated the island and created acute vulnerabilities that must be addressed by making communities more robust and resilient to future shocks.

This research aims to identify how social cohesion can accelerate the process of disaster recovery and understand the underlying reasons why some communities in Puerto Rico are more resilient and are better able to cope with and recover from a disaster while other communities struggle to normalize their lives. The study's objectives to achieve the goals are identifying the indicators of social cohesion, understanding the relationship between social cohesion and community rebounding rate after Hurricane Maria in Puerto Rico, and proposing a conceptual framework for improving social cohesion in Puerto Rico's recovery process. The results of this research will eventually lead to a faster and stronger return of the forced relocated population to their homes and a better understanding of the best use of funding and the best way to disperse funds pre-and post-disaster.

This research is exploratory and explanatory sequential mixed-method design. The study includes two different steps. The first step will answer the question: "Do places with stronger social cohesion rebound quicker from an environmental disaster than places with weaker social cohesion in Puerto Rico?" A cross-sectional survey design will

be used for this step. Data gathering is via questionnaire, and the method of analysis is multi-variable linear regression. The second step will answer the question: “What factors make places with stronger social cohesion rebound quicker from an environmental disaster than places with weaker social cohesion in Puerto Rico?”. A multiple-case-study design with embedded units of analysis and literal replication will be used to answer this question. Data collection is via in-person interviews, and the method of analysis is qualitative inductive coding.

Citations

- Acosta, R. J.; N. Kishore; R.A. Irizarry; C. Buckee (2020). “Quantifying the Dynamics of Migration after a Disaster: Impact of Hurricane Maria in Puerto Rico,” *Proceeding of the National Academy of Sciences*, Vol. 117 (51): 32772-32778. DOI: DOI: <https://doi.org/10.1101/2020.01.28.20019315>
- Adger, W. N., T. P. Hughes, C. Folke, S.R. Carpenter, J. Rockström (2005). “Social-ecological resilience to coastal disasters.” *Science*, Vol. 309(5737): 1036-1039.
- Aldrich, D. P. (2010, June). “Fixing recovery: Social Capital in Post-Crisis Resilience.” *Journal of Homeland Security*, Vol. 6: 1–10.

Key Words: Social Cohesion, Community Recovery, Community Resilience, Disasters

NONPROFIT PARTNERS IN PUBLIC SPACES: COLLABORATIVE PARK GOVERNANCE IN TORONTO AND LOS ANGELES

Abstract ID: 1066

Individual Paper Submission

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In recent decades, municipal governments have contended with the convergence of two oppositional forces: intense fiscal constraints and increased demand for parks and public spaces (Barrett et al., 2017). In response, parks and recreation agencies have pursued alternative strategies to expand, enhance, and maintain urban park systems, including partnerships with nonprofit organizations and community groups (Joassart-Marcelli et al., 2011). Such partnerships are increasingly common in Canadian and U.S. cities (Rigolon and Gibson, 2021), as evidenced by the highly visible activities of park conservancies, park friends groups, and volunteer and stewardship networks (De Magalhães & Carmona, 2006; Gazley et al., 2020). Despite scholarship on the extent and outcomes of park partnerships, there has been relatively little research on how public agencies enable and effectuate these shared governance arrangements in parks and to what ends. In response, this study analyzes how local parks agencies manage public-nonprofit partnerships by comparing policy frameworks in two cities: Toronto and Los Angeles. The goal of this research is to enhance our understanding of shared park governance and to consider how the interests of civil society actors are embedded in both the governance and spatial form of the city. Accordingly, this study is guided by two central research questions: 1) What local policy frameworks are in place to guide non-profit participation in urban park development and management?, and 2) What similar or different typologies, trends, and patterns exist in these policy frameworks, across two large, North American cities?

We used a multiple case study approach to compare and analyze park partnership approaches in Toronto and Los Angeles, and undertook a qualitative analysis of the policies, procedures, and practices governing public-nonprofit collaborations in each city. Document analysis of public documents, including policies, plans, guidelines, reports, and decision documents, as well as public communications, including web pages, brochures, and press releases, was supplemented with interviews with key public agency staff.

We construct a typology of park partnerships and partners, which is informed by the considerable diversity in their scale and scope as observed across cases, from one-day event permits to long-term management agreements. Local history and governance structures influence the rise of particular partnership types in each city, including an extensive network of park friends groups in Toronto and many facility use agreements in Los Angeles.

In both cities, policy frameworks sought to balance structure with flexibility to account for the high degree of variability in partners and partnerships. To analyze how cities approach, regulate, and manage public-nonprofit park partnerships, we advance a conceptual framework linking policy approaches to partnerships with enabling administrative structures and tools and further with adaptive processes and practices to effectuate partnerships. Local policy frameworks can thus be understood as adaptive responses to perceived challenges, opportunities, and policy goals associated with park partnerships, particular to each city, including an emphasis on “city building” and collaboration in Toronto and an emphasis on revenue generation in Los Angeles.

These findings highlight the key role of public policies, procedures, and practices in creating enabling conditions for public-nonprofit park collaborations. The results demonstrate how prevailing public ideologies and attitudes towards park provision, public expenditures, and civil society participation inform governance approaches and shape

outcomes in the nature and frequency of park partnerships. These findings open avenues for future research on the links between the policy structures and socio-spatial outcomes of park partnerships, and implications for spatial justice.

Citations

- Barrett, A. G., Pitas, N. A., & Mowen, A. J. (2017). First In Our Hearts but Not in Our Pocket Books: Trends in Local Governmental Financing for Parks and Recreation from 2004 to 2014. *Journal of Park and Recreation Administration*, 35(3), 1–19.
- De Magalhães, C., & Carmona, M. (2006). Innovations in the Management of Public Space: Reshaping and Refocusing Governance. *Planning Theory & Practice*, 7(3), 289–303.
- Gazley, B., LaFontant, C., & Cheng, Y. (Daniel). (2020). Does Coproduction of Public Services Support Government's Social Equity Goals? The Case of U.S. State Parks. *Public Administration Review*, 80(3), 349–359.
- Joassart-Marcelli, P., Wolch, J., & Salim, Z. (2011). Building the Healthy City: The Role of Nonprofits in Creating Active Urban Parks. *Urban Geography*, 32(5), 682–711.
- Rigolon, A., & Gibson, S. (2021). The Role of Non-governmental Organizations in Achieving Environmental Justice for Green and Blue Spaces. *Landscape and Urban Planning*, 205, 103970.

Key Words: public space, governance, civil society, parks, nonprofits

REFUGEE RESETTLEMENT IN THE US: ORGANIZATIONAL NETWORKS BEYOND RESETTLEMENT AGENCIES

Abstract ID: 1098

Individual Paper Submission

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Resettled refugees regularly conjure considerable debate about their potential to either drain a city's resources or contribute to a city's revitalization (Maxmen, 2018). Yet, how the city that refugees are resettled in affects their ability to thrive and contribute productively to the cultural, economic and social fabric of their host community is rarely considered by urban planning scholars or practitioners. Moreover, the U.S. refugee resettlement program does not consider a city's characteristics when deciding where to place refugees. Once refugees are slated to come to the U.S., national resettlement agencies determine where to place refugees based on family ties or which federally-funded local agencies have immediate capacity to administer resettlement services, with little input from local governments or consideration of other grassroots agencies that often emerge to offer refugee support (U.S. GAO, 2012). Refugee resettlement services center around economic self-sufficiency, viewing refugees as workers (Gonzalez Benson & Taccolini Panaggio, 2019; Okour, 2019). Furthermore, local resettlement agencies are funded to work with their clients for 30 to 90 days, a short amount of time for their clients to adjust to a new culture and gain economic independence.

In other major resettlement countries, integration - where both the immigrant and host community are open to change and diversity - is what resettlement processes center on. The conceptual framework of integration provides a comprehensive understanding of the refugee experience, proposing that successful integration falls into four thematic areas, including “achievement and access across the sectors of employment, housing, education and health; assumptions and practice regarding citizenship and rights; processes of social connection within and between groups within the community; and structural barriers to such connection related to language, culture and the local environment” (Ager & Strang, 2008). Yet in the U.S., our fragmented resettlement system, which differs among states, does not make clear which agencies are responsible for these services.

This research examines the network of formal and informal agencies that assist refugees in resettlement, focusing on two rust belt cities - Buffalo, NY and Grand Rapids, MI - that have served as major resettlement locations in recent years. In addition to a review of municipal policies and plans, data collection methods include semi-structured interviews with local resettlement agencies, government officials, representatives from refugee-run grassroots organizations, and other agencies that support refugee populations. Preliminary findings suggest that more formal institutions such as local governments, healthcare providers, and federally-funded local resettlement agencies work together, but there is a disconnect with grassroots organizations that are centered within the refugee community.

Findings from this research have various implications for refugee resettlement and planning practice. As the US is a global leader in refugee resettlement, having a critical understanding of the impact of placement in the US refugee resettlement program is crucial for ensuring that refugees have the tools to integrate more effectively. Understanding impacts of city placement is imperative, particularly as the number of refugees resettled in the US sharply increases in coming years.

Citations

- Ager, A., & Strang, A. (2008). Understanding Integration: A Conceptual Framework. *Journal of Refugee Studies*, 21(2), 166–191. <https://doi.org/10.1093/jrs/fen016>
- Gonzalez Benson, O., & Taccolini Panaggio, A. (2019). “Work Is Worship” in Refugee Policy: Diminution, Deindividuation, and Valuation in Policy Implementation. *Social Service Review*, 93(1), 26–54. <https://doi.org/10.1086/702182>
- Maxmen, A. (2018). Migrants and refugees are good for economies. *Nature*. <https://doi.org/10.1038/d41586-018-05507-0>
- Okour, Y. F. M. (2019). Understanding the Transportation Experiences of Refugees: A Case Study of Iraqi and Syrian Refugees in Erie County, NY.
- U.S. GAO. (2012). Refugee Resettlement: Greater consultation with community stakeholders could strengthen program (GAO-12-729). Government Accountability Office. <http://www.gao.gov/assets/600/592975.pdf>

Key Words: Refugees, Grassroots organizations, Professional practice, Integration, Equity

PLANNING THE JUST CITY: OUTCOME-BASED VERSUS PROCESS-BASED PLANNING FOR SOCIAL SERVICES IN THE NORTH AMERICAN CITY

Abstract ID: 1104

Individual Paper Submission

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There has been a consistent theoretical debate in planning literature about outcome versus process-based strategies (Healy, 2003; Thomas, 2008; Fainstein, 2010). The main consensus in its current form is an understanding that both sides are necessary and essential for planning policy to both encourage community participation and manage power structures (Christensen, 2015). This is a fair analysis that is held by most professional planners, but I aim to narrow this debate to elements of planning policy. The broad argument of both strategies being equally necessary and effective does not hold when considering social equity-based developments. When we look at these individual projects, those that fall under the category of social planning and services almost always benefit from a focused outcome-based strategy- where the city planners have taken the responsibility to ensure the equitable distribution of benefits and services to citizens.

This paper is established from a scoping review of 50 peer-reviewed articles and books that approach this debate of process and outcome planning, as well as various case studies of social planning projects, specifically harm reduction services (ie free clinics, needle exchanges, drug testing, supervised consumption sites) implemented in the last 20 years in North American cities. The objective was to analyze outcome versus process-based projects on their abilities and ease to implement these often difficult to site services in communities.

Planning policies can easily become ways for neighborhoods to practice order maintenance and social control over space (Thomas, 2008). We have seen arguments like not in my backyard, or NIMBYism become weaponised - affecting public policies and shaping how development happens within a city. When the voting demographic vocally does not want a development like a harm reduction site in their area, even when it is needed, a process-based strategy can allow a door open for this descent to shift the outcomes away from equity or even stop the project before it got off the ground.

This research will be adding to the discourse surrounding planning strategy, and as it is focused on harm reduction services it will also be filling a noticeable gap that planning literature currently has in this area. As North American cities continue to face a growing overdose and poisoned drug supply epidemic, more and more cities are beginning to look to and establish permanent harm reduction sites in the face of extreme NIMBYism. This research will hopefully encourage planners to continue to create the ‘just city’ by consistently placing equitable outcomes at the forefront of projects.

Citations

- Christensen, K. S. (2015). Both Process and Outcome are Essential to Planning. *Journal of Planning Education and Research*, 35(2), 188-198
- Fainstein, S. (2010). *The Just City*. Cornell University Press
- Healey, P. (2003). Collaborative Planning in Perspective. *Planning Theory*, 2(2), 101-123.
- Thomas, J. M. (2008). The Minority-Race Planner in the Quest for a Just City. *Planning Theory*, 7(3), 227-247.

- Uitermark, J. (2012). An Actually Existing Just City. *Cities for People, Not for Profit: Critical Urban Theory and the Right to the City*, N. Brenner, P. Marcuse, M. Mayer (eds.), London: Routledge, 197-214

Key Words: Social Planning, Justice Planning, NIMBYism, Neoliberalism, Gentrification

A “GOOD NEIGHBORHOOD” FOR MIDDLE-AGE SINGLES? A CASE FROM TOKYO, JAPAN

Abstract ID: 1118

Individual Paper Submission

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The number of single-person households in large metropolitan areas has significantly increased over the past decades (Klinenberg 2012). This rapid increase in single households in major urban cities is a worldwide phenomenon, and Tokyo, one of the largest cities in the world, is no exception in this regard (Retherford, Ogawa, and Matsukura, 2001). Unlike the previous generation, most single households in urban cities now consist of never-married individuals without children. As a result, they are often seen as temporary residents with little sense of community in their neighborhoods (Nasar and Julian 1995).

Although local governments and researchers have paid attention to the wellness of singles, they have focused mostly on two groups: elderly single people who may be socially isolated (Findlay 2003) and young singles, many of whom are college students and less attached to the local community (Kenyon 1997). However, despite the significant presence of middle-aged singles in urban cities, there is little discussion about what constitutes a "good neighborhood" for them, especially those on low incomes. Many of them are in low-wage jobs and maintain some social relationships with friends and coworkers. They seem to be surviving, at least for now. Nevertheless, in the near future, when they retire from work and do not have family members to physically, mentally, and financially support them, social isolation in the neighborhood could be a significant issue. In addition, this situation could become a burden for local governments as a large segment of the population may rely on social welfare.

By interviewing 22 middle-aged singles and examining data from a survey (N = 2,598) conducted in central Tokyo in 2019 and 2020, this study attempts to answer the following research questions: What do middle-aged singles, especially low incomes, think about their neighborhood and neighbors? What is a "good neighborhood" for them when they age?

In the interviews, the middle-aged singles expressed the ease of living in a large city, which is convenient and provides entertainment, anonymity, and jobs. Without family obligations, they tend to move residences and jobs more frequently than individuals with families. Many described social relationships with friends through work and specific interests such as sports and music, but very few with neighbors. While some, especially women, acknowledged the importance and comfort of having "good neighbors" in their daily lives as well as in an emergency like a natural disaster, they stated that they were too busy to mingle with neighbors and did not know where to start to form social relationships in the neighborhood. In addition, they often hesitated to actively socialize with family households around them. This hesitation may be due in part to the strong cultural norms in Japan that suggest that middle-aged and never-married singles are "losers" or "immature." With their low-income status, this mindset often makes them refrain from playing active roles in the neighborhood as traditional neighborhood organizations tend to serve mainly family households. As a result, low-income middle-aged singles struggle to find social roles and isolate themselves from the neighborhood community.

In conclusion, this paper advocates the need for inclusive and diverse urban neighborhood environments free from predetermined social roles that depend on marital and socioeconomic status, gender, age, and race. For example, "Chonaikai," a voluntary residence association that is usually spearheaded by retired men, should include not only singles but also immigrants, students, and women with roles that suit their lifestyles. Middle-aged singles playing active roles in their neighborhoods would have been excellent assets for communities and created a critical safety net for the singles.

Citations

- Findlay, Robyn A. 2003. "Interventions to Reduce Social Isolation amongst Older People: Where Is the Evidence?" *Ageing and Society* 23 (5): 647–58.
- Kenyon, Elizabeth L. 1997. "Seasonal Sub-Communities?: The Impact of Student Households on Residential Communities." *The British Journal of Sociology* 48 (2): 286–301.
- Klinenberg, Eric. 2012. *Going Solo*. London, UK: Penguin Books.
- Nasar, Jack L., and David A. Julian. 1995. "The Psychological Sense of Community in the Neighborhood." *Journal of the American Planning Association* 61 (2): 178–84.
- Retherford, Robert D., Naohiro Ogawa, and Rikiya Matsukura. 2001. "Late Marriage and Less Marriage in Japan." *Population and Development Review* 27 (1): 65–102.

Key Words: middle-aged singles, low income, social roles, neighborhood, Japan

PLACES TO BE YOUNG: THE DISPOSSESSION OF PUBLIC SPACE IN OLD HAVANA

Abstract ID: 1124

Individual Paper Submission

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The recreation of Old Havana as a site of heritage tourism involves the emergence of a new spatial imaginary, the enforcement of which is resulting in the loss of places for local residents to be young. After the 1959 Revolution, the Cuban government prioritized social infrastructure for its citizens over tourist amenities for foreigners, bucking the trend of global economic integration and restructuring that was spreading across Latin America and the Caribbean. By the early 1990s, the many factors that complicated the Cuban state's socialist mission forced it to turn to a market-led process of redevelopment to generate income to improve housing and infrastructure in the island's oldest urban settlement. As a result, the Office of the Historian of the City of Havana (OHCH) was granted powers that were unprecedented within Cuba's highly centralized government and centrally planned economy. This put the OHCH in a challenging position in which "[i]n addition to preserving architecture...it is now charged with developing tourism and providing services to the community" (Peters, 2001 p.8 italics mine). It is in this dual mandate, to create conditions conducive to tourism and to concern itself with the wellbeing of the local community, that socialist and neoliberal objectives necessarily clash which, I argue, has unique repercussions on the experience of young people living in Old Havana.

The process of neoliberal urbanism (Harvey, 1989) taking place in Old Havana is exceptional in that it is the first example of such a process in the contemporary Cuban context, and it is embedded in an ideological and material context of state-led socialism in ways that similar processes in other parts of North America are not. The conversion of the UNESCO site of world heritage into an entrepreneurial city has forced a community whose political and material expectations were formed by a socialist government to rely on market mechanisms to fund the survival of their neighbourhood, disrupting their identities and spatial imaginaries. The city marketing (McCann, 2009) efforts that fuel the revitalization of Old Havana demand the sanitization of public space, which relies on forms of social control that impact local young people in particular ways. The unique social needs of adolescents, and the material needs of these specific teens whose socio-economic situation limits their access to private space in the home, make public space particularly important to this group. The redaction and policing of public space that are key to the creation of heritage tourism in Old Havana have negative impacts on the identity formation of local youth. This paper uses participatory and arts based research to explore how the spatial practices involved in the enactment of this new imaginary dispossess local youth of places to be young, leading to a missing 'backstage' (Goffman, 1978) for the work of identity formation; how official representations of space physically and symbolically exclude local youth from the reimagined Old Havana, communicating messages about their worth that impact how they see themselves; and how young people's experience of the economically and geographically restructured city impacts the imagined futures of local youth by centring consumption in ways that can make them feel out of place in their own community (Cahill et al., 2019).

Citations

- Cahill, C., Stoudt, B. G., Torre, M. E., Darian, X., Matles, A., Belmonte, K., . . . Pimentel, A. (2019). "They were looking at us like we were bad people": Growing up policed in the gentrifying, still disinvested city. *ACME: An International Journal for Critical Geographies*, 18(5), 1128-1149.
- Goffman, E. (1978). *The presentation of self in everyday life* Harmondsworth London.
- Harvey, D. (1989). From managerialism to entrepreneurialism: The transformation in urban governance in late capitalism. *Geografiska Annaler. Series B, Human Geography*, 71(1), 3. doi:10.2307/490503
- McCann, E. J. (2009). City marketing. In R. Kitchin, & N. Thrift (Eds.), *International encyclopedia of human geography* (pp. 119-124). Oxford: Elsevier.
- Peters, P. (2001). *Rescuing old havana*. Lexington INV, Instituto Nacional De La Vivienda (2002b) Estado Técnico Del Fondo Habitacional. Año,

Key Words: Cuba, Youth, Neoliberal Urbanism, Public Space, Heritage Planning

GENTRIFICATION AND MINORITY SMALL BUSINESS OWNERSHIP IN THE PURPLE LINE CORRIDOR

Abstract ID: 1136

Individual Paper Submission

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The State of Maryland is currently building a new light rail system due to open in 2026. It is known as the Purple Line, and it will span the inner suburbs of two suburban counties just outside Washington DC. It will connect multiple major activity centers and existing subway and rail lines along its 16 mile route. The Purple Line will greatly increase transit accessibility to jobs and points of interest along its path, potentially increasing land values in neighborhoods where many minority low-income residents and small business operators may be vulnerable to displacement (Lung-Amam and Dawkins, 2020). In this paper, we seek to understand how gentrification and nearby construction impacts small businesses – particularly minority and woman-owned small businesses - in advance of the opening of the transit line.

The prevalence of gentrification in the Purple Line Corridor and one of its primary consequences, displacement of residents and businesses, is however subject to ongoing debate. One reviewer of gentrification noted the subject is viewed in qualitative and micro-level studies as a social issue that is “deeply problematic and consequential for longtime residents” (Brown-Saracino, 2018, p. 517). In the same review, Brown-Saracino notes that macro-level quantitative analyses offer a viewpoint that gentrification is not as widespread as commonly thought, and further that “displacement is far from endemic” (Brown-Saracino, 2018, p. 520).

The Purple Line as a case-study is relevant to this debate given recent advances made and questions posed in the literature. Large-scale public investment, like the over \$2 billion investment in the Purple Line, has been shown to influence processes of gentrification and potentially catalyze displacement (Zuk et al. 2017). However, macro-scale evidence has shown that new rail transit stations do not directly catalyze higher rates of displacement for low-income residents who live nearby (Nilsson and Delmelle, 2020). Chava and Renne (2021) found that gentrification since the 1980s has been more prevalent in neighborhoods with light rail stations than neighborhoods without, even in advance of the opening of transit.

We advance our case study using both traditional and novel sources of data. We test for the presence of gentrification using census socioeconomic and demographic data at the census tract level from 2000 to 2019. To identify gentrification, we create a subset of eligible areas based on income and recent housing construction. We then track certain supply and demand indicators, alongside race and ethnicity to identify gentrification.

We supplement our identification of gentrification at the local scale with unique sources. The Quarterly Census of Employment and Wages (QCEW), which is an administrative database of firm geolocations and wages, allows for identification of increased economic activity, proxied by firm openings and wages, in census tracts or block groups which may or may not be gentrifying. We merge QCEW data with data from the Paycheck Protection Program, which includes attributes of business owners like minority status and gender. Between these datasets, we analyze the likelihood of survival of minority owned firms between the pre-construction period (before 2017) and through 2021.

We find that gentrification is occurring in the corridor, and many areas in the Corridor are at risk of gentrifying in the future. The business data paints a nuanced story of economic growth that may not be equitably shared, as businesses compete in this dynamic area and struggle against the changes that construction, COVID-19, and shifting demographics bring.

Citations

- Brown-Saracino, Japonica. 2017. “Explicating Divided Approaches to Gentrification and Growing Income Inequality.” *Annual Review of Sociology* 43, 515-539. <https://doi.org/10.1146/annurev-soc-060116-053427>
- Chava, Jyothi & John L. Renne. 2021. “Transit-Induced Gentrification or Vice Versa?” *Journal of the American Planning Association*, DOI: 10.1080/01944363.2021.1920453
- Lung-Amam, Willow & Dawkins, Casey. 2020. The power of participatory story mapping: Advancing equitable development in disadvantaged neighborhoods. *Community Development Journal* vol. 55 (3), 473-495. <https://doi.org/10.1093/cdj/bsy064>
- Nilsson, Isabelle & Delmelle, Elizabeth. 2020. New rail transit stations and the out-migration of low income residents. *Urban Studies* vol. 57(1), 134-151. <https://doi.org/10.1177/0042098019836631>
- Zuk, Miriam, Bierbaum AH, Chapple K, Gorska K, Loukaitou-Sideris A. Gentrification, Displacement, and the Role of Public Investment. 2017. *Journal of Planning Literature* vol. 33 (1), 31-44. doi:10.1177/0885412217716439

Key Words: business, gentrification, light rail, displacement

THE EUDAIMONIC TREE PILOT: A STUDY OF PUBLIC ENGAGEMENT IN PARTICIPATORY ART AT THREE SITES

Abstract ID: 1144

Individual Paper Submission

What tools do professionals designing our urban environments have for discovering unknown issues in a more spontaneous and practice-based way? The engagement approaches that many planners and designers use do not typically aim to access deeper questions in society. Surveys, public meetings and focus groups seek tangible results that target specific issues. These forms of engagement offer little room for unknown information to emerge that indicates the community's sense of well-being and do not typically aim to connect community members to each other or their environments.

The Eudaimonic Tree Pilot explored novel forms of engagement through the theoretical framework of eudaimonia (Aristotle & Beresford, 2020; Ryff, 2013). The objective of the study began with a desire to inspire a sense of well-being, eudaimonia, in the community during a time of great loneliness and mental health decline due to the ongoing COVID-19 pandemic (Ammar et al., 2021) which contributed to a national trend that started well before the pandemic occurred (Berry & Okulicz-Kozaryan, 2011). The Eudaimonic Tree Pilot was a response to COVID's exacerbating impacts and was composed of three installations that used trees in the landscape to offer the public a means of expression. Each tree housed a different prompt rooted in eudaimonic sentiments and blank note cards for public response. Their messages hung from tree limbs and became an embodiment of the participatory process.

The planning and design fields do not currently have a framework to assess whether well-being is evoked by designs and projects in the landscape. Through the novel approach of using participatory art as a form of public engagement this study serves as a proof of concept, adapting a prominent eudaimonic well-being scale developed by Dr. Carol Ryff (Ryff, 1989; Ryff, 2013) to assess whether well-being was evoked by the installations. Ryff's Six Dimensions of Eudaimonic Well-Being (Ryff, 1989; Ryff, 2013) provided a framework to code each message. Through this analysis it appears that different prompts and trees evoked distinct responses that aligned with distinct dimensions.

Several profound implications for planning and design fields were uncovered, including that participatory art can catalyze new modes of community dialogue and highly co-created initiatives are likely to generate a eudaimonic effect. This study suggests that the development of a eudaimonic framework intended for geographic application would support the creation of projects that elicit well-being in an effort to serve deeper needs of the community through engagement in participatory art.

Citations

- Ammar, A. et al. (2021). Effects of home confinement on mental health and lifestyle behaviors during the COVID-19 outbreak: insights from the ECLB-COVID19 multicentre study. *Biology of Sport*, 38:1, 9-21.
- Aristotle. (2020). *The Nicomachean Ethics* (Beresford, A. Trans.). Penguin Classics: USA.
- Berry, B. & Okulicz-Kozaryan, A. (2011). An Urban-Rural Happiness Gradient. *Urban Geography*, 32:6, 871-883.
- Ryff, C. (2013). Psychological Well-Being Revisited: Advances in the Science and Practice of Eudaimonia. *Psychotherapy and Psychosomatics*, 83, 10-28.
- Ryff, C. D. (1989). Happiness is Everything or is it? Explorations on the Meaning of Psychological Well-Being. *Journal of Personality and Social Psychology*, 57:6, 1069-1081.

Key Words: Public Participation, Community Engagement, Participatory Art, Eudaimonic Well-Being

IS THERE REGIONAL DISPARITIES IN CULTURAL INFRASTRUCTURE PLANNING?

Abstract ID: 1198

Individual Paper Submission

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[Problems] Cultural infrastructure provides a cultural activity space for citizens, improves the quality of life of citizens through cultural education and exchange, and helps they become more creative person. culture can play a role in creating and maintaining the identity of the local community, its creativity, vitality, and internal cohesion (Revko at al, 2020), and improve overall image of a city through cultural infrastructure development (Bryson, 2007). In addition, it is possible to promote economic development by attracting 'creative class' within the region through investment in cultural infrastructure (Florida, 2002). Therefore, cultural infrastructure should be viewed not as a simple leisure space, but as a public infrastructure that all citizens have the right to enjoy equally, and at the government level, disparities and inequality between regions should be resolved. In this study, the spatial distribution characteristics of cultural infrastructure were checked, and regional disparities and influencing factors were analyzed for each facility.

[Research Methodology] The study area of this paper covers South Korea and GIS analysis was used to OLS and SRM (Spatial Regression Model). The number of cultural infrastructure contains geographic information, spatial autocorrelation is inherent. Therefore, spatial regression model was performed, and spatial error model was adopted as the final model compared with the results of OLS. The independent variables were set to 7 population characteristic variables and 4 cultural policy variables, and the final 10 independent variables were set through the multi-collinearity test. In this study, the relationship between spatial autocorrelation and independent variables for each facility of cultural infrastructure was investigated. Therefore, a total of six analyses were conducted.

[Findings] As a result of the analysis of this study, it was found that the number of cultural infrastructures has spatial autocorrelation, and the largest spatial autocorrelation appears in the 'library'. As a result of the analysis of the final model, it was found that the number of cultural infrastructure had a positive correlation with the total population, population density, the ratio of single-person households, the ratio of foreigners in the region, and the number of cultural organizations. In addition, as a result of analyzing the number of each facility as a dependent variable along with the total number of cultural infrastructure in this study, it was confirmed that the influencing factors and influence vary depending on the detailed setting of the analysis variable. In particular, comparing the analysis results of 'library' and 'museum', 'library' showed a positive correlation between the ratio of youth population and foreigners. On the other hand, in the case of the 'Museum', the ratio of the youth population showed a negative correlation, and a positive correlation was found in the ratio of single-person households and age diversity.

[Policy Implications] Three implications can be derived from the analysis results of this study. First, the number of cultural infrastructure has a correlation with the regional population characteristics. Therefore, through further research in the future, it will be possible to use the expansion of cultural infrastructure as a strategy in policies for increasing a specific population in the region. Second, the number of cultural infrastructure has a correlation with local cultural organizations. This is the result of quantitatively confirming theory that cultural infrastructure creates internal cohesion in the community, and based on this, meaningful research on the impact on the creativity and social integration of cultural infrastructure and community will be possible. Third, the influencing factors and influences vary depending on the detailed classification and analysis unit of cultural infrastructure. Therefore, when establishing a cultural infrastructure policy, it is necessary to analyze and set strategies for each facility according to the direction of the policy.

Citations

- Alona Revko, Mykola Butko, Olha Popelo, 2020, Methodology for Assessing the Influence of Cultural Infrastructure on Regional Development in Poland and Ukraine, Comparative Economic Research. Central and Eastern Europe, 23(2)
- Bryson, John, 2007, Arts, dance, cultural infrastructure, and city regeneration: Knowledge, audience development, networks, and conventions, and the relocation of a Royal Ballet company from London to Birmingham, Norwegian Journal of Geography, 61(3)
- Florida, R., 2002. The Rise of the Creative Class and How It's Transforming Work, Leisure, Community, and Everyday Life, New York: Basic Books.

Key Words: Culture Infrastructure, Regional Disparities, GIS Analysis, Spatial Autocorrelation, Spatial Regression Model

SATISFIED ENOUGH TO TAKE ACTION? THE EFFECT OF NEIGHBORHOOD PERCEPTIONS ON DISASTER PREPAREDNESS BEHAVIOR

Abstract ID: 1211

Individual Paper Submission

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As the global climate changes and natural disasters are difficult to predict, how to prepare for natural disasters has become more critical than ever. While many deciding factors of disaster preparedness behaviors of individual households have been introduced, the importance of neighborhood environment (socio-physical conditions) in motivating preparedness behaviors has not been stressed. If residents are satisfied with the neighborhood environment, would they be more reluctant to keep emergency supplies because of their satisfaction, or would they try to be more prepared? Conversely, when residents perceive physical disorders or have safety concerns about their neighborhoods, would this trigger an additional motivation to prepare for a disaster or discourage residents from preparing emergency supplies even if a disaster risk exists? Exploring the relationships between neighborhood perceptions, risk perception, and disaster preparedness, this study attempts to identify the dynamics of the neighborhood environment that can encourage residents' disaster preparedness behavior.

Using the 2017 American Housing Survey (AHS) national microdata, this study examines whether or not a positive perception of neighborhood environment could encourage disaster preparedness behaviors using OLS and Ordered

Logit regressions. Disaster preparedness is measured using the AHS survey items directly related to disaster preparedness: availability of emergency food, water, emergency kit, disaster plan with financial and contact info, meeting spot, alternative communication plan, generator, evacuation location, vehicle, and financial resources. Neighborhood perceptions are measured in two different ways: neighborhood rating scores that represent overall neighborhood satisfaction and six specific variables of perceived neighborhood conditions (such as abandoned structures, bars on windows, trash on street, crime, and school quality). The relationship between neighborhood perception and disaster preparedness was also measured when the disaster risk perception is high or low.

The results show that neighborhood perceptions can potentially alter the relationship between risk perception and disaster preparedness. When the neighborhood satisfaction score increased by one point, the preparedness score increased by 0.114 points ($p < 0.001$). Additionally, when abandoned structures are observed in the neighborhood, the preparedness score dropped by 0.394 points ($p < 0.01$) indicating a negative association. Perception of a high-quality school appeared to be a strong indicator for disaster preparedness behavior (coef. = 0.235, $p < 0.01$). When subgroups of risk perception were examined separately, however, there were no significant effects from abandoned structures or high-quality schools on the preparedness behavior of households with high-risk perceptions. This could suggest that neighborhood perceptions matter more with a low perception of disaster risk than when a high risk is perceived. At the same time, high neighborhood satisfaction that captures overall neighborhood perception is still a marginally significant factor influencing preparedness behavior when risk is perceived (OLS: coef. = 0.106, $p < 0.05$ | OL: $p = 0.06$).

This study suggests a potential contribution of neighborhood perceptions on disaster resilience with evidence that positive neighborhood perceptions are related to a high level of disaster preparedness. More importantly, communities with limited knowledge or awareness of existing disaster risk could benefit from an improved neighborhood environment. This study indicates that a positive neighborhood environment can encourage disaster preparedness behaviors, especially when residents do not perceive disaster risk. This implies that residents' perceptions of the neighborhood environment could influence their decision to prepare for potential disaster. Subsequently, potential spillover effects could exist among different types of neighborhood problems. There are several further issues that could be examined: Are there other neighborhood factors that could discourage disaster preparedness behaviors? Does the perception of the neighborhood environment matter in promoting a disaster-resilient society? If so, how much do neighborhood environment and quality matter?

Citations

- Mishra, S., Mazumdar, S., & Suar, D. (2010). Place attachment and flood preparedness. *Journal of Environmental Psychology*, 30(2), 187-197. doi:10.1016/j.jenvp.2009.11.005
- Lindell, M. K., & Perry, R. W. (2012). The protective action decision model: theoretical modifications and additional evidence. *Risk Analysis*, 32(4), 616-632. doi:10.1111/j.1539-6924.2011.01647.x
- Berkes, F., & Ross, H. (2013). Community Resilience: Toward an Integrated Approach. *Society & Natural Resources*, 26(1), 5-20. doi:10.1080/08941920.2012.736605
- De Dominicis, S., Fornara, F., Ganucci Cancellieri, U., Twigger-Ross, C., & Bonaiuto, M. (2015). We are at risk, and so what? Place attachment, environmental risk perceptions and preventive coping behaviours. *Journal of Environmental Psychology*, 43, 66-78. doi:10.1016/j.jenvp.2015.05.010
- Levac, J., Toal-Sullivan, D., & O'Sullivan, T. L. (2012). Household emergency preparedness: a literature review. *J Community Health*, 37(3), 725-733. doi:10.1007/s10900-011-9488-x

Key Words: neighborhood satisfaction, neighborhood perception, disaster preparedness, risk perception

COMPARING THE NEIGHBORHOOD SATISFACTION THROUGH CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) BETWEEN GROWING AND SHRINKING METROPOLITAN AREAS

Abstract ID: 1251

Individual Paper Submission

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Central Theme

Residents have shown decreased satisfaction with their neighborhoods when they observe crime and physical degradation (Grogan-Kaylor et al., 2006; Lee et al., 2017). This is a particularly difficult issue in cities facing population losses with an increase in empty and abandoned buildings and the loss of municipal services (Weaver et al., 2016). Nevertheless, there have been few papers dealing with neighborhood satisfaction in shrinking cities. Therefore, the question addressed with this research is how the relationship between perceptions of crime and the physical environment in neighborhoods and neighborhood satisfaction would differ between a growing and shrinking

metropolitan area.

Methodology

In order to see the relationship between environmental design, crime, and neighborhood satisfaction, a separate path analysis will be conducted for growing and shrinking metropolitan areas. The above described research question will be addressed by comparing the results of these two analyses. The number of abandoned buildings and the frequency of garbage in the streets will be independent variables, and the dependent variable will be neighborhood satisfaction. A level of crime will mediate the independent and dependent variables. Data from the 2019 American Housing Survey (AHS) will be utilized to evaluate the hypothesized relationships. The population change data from the United States Census Bureau will be used to assess whether the metropolitan statistical areas (MSAs) populations have expanded or decreased.

Relevance

Planning in a shrinking city differs from planning in a growing city (Wiechmann & Bontje, 2015). As such, theories and policies for urban planning should be able to deal with urban shrinkage as well as urban growth (Reis et al., 2016). If the negative impact of abandoned buildings on neighborhood satisfaction is more severe in shrinking MSAs, reduced crime through environmental design might be more important in such areas. Policies addressing abandoned structures and litter may be more impactful in shrinking cities and such initiatives may be vital to improving quality of life.

Citations

- Grogan-Kaylor, A., Woolley, M., Mowbray, C., Reischl, T. M., Gilster, M., Karb, R., MacFarlane, P., Gant, L., & Alaimo, K. (2006). Predictors of neighborhood satisfaction. *Journal of Community Practice*, 14(4), 27-50.
- Lee, S. M., Conway, T. L., Frank, L. D., Saelens, B. E., Cain, K. L., & Sallis, J. F. (2017). The relation of perceived and objective environment attributes to neighborhood satisfaction. *Environment and Behavior*, 49(2), 136-160.
- Reis, J. P., Silva, E. A., & Pinho, P. (2016). Spatial metrics to study urban patterns in growing and shrinking cities. *Urban Geography*, 37(2), 246-271.
- Weaver, R., Bagchi-Sen, S., Knight, J., & Frazier, A. E. (2016). *Shrinking cities: Understanding urban decline in the United States*. Routledge.
- Wiechmann, T., & Bontje, M. (2015). Responding to tough times: Policy and planning strategies in shrinking cities. *European Planning Studies*, 23(1), 1-11.

Key Words: Neighborhood satisfaction, Crime Prevention through Environmental Design (CPTED), Shrinking cities, Built environment, Path analysis

MAKING COMMUNITIES AGE-FRIENDLY: LESSONS FROM IMPLEMENTED PROGRAMS

Abstract ID: 1281

Individual Paper Submission

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The world's population is aging and with that comes a need to make places that can better support older people. Over the past decades, multiple organizations have developed models and published related guides to stimulate creating age-friendly cities and communities, such as Livable Communities by the AARP (formerly the American Association of Retired Persons), the AdvantAge Initiative by the New York Visiting Nurses Association (NYVNA), and Global Age-Friendly Cities by the World Health Organization (WHO) (Gonyea and Hudson 2015; Winick and Jaffe 2015).

In parallel to the age-friendly movement is a small but significant field of academic research on AFCs. Some studies have drawn on theory to review elements of AFCs and propose broad challenges in implementation (e.g., Steels 2015). While the number of published evaluations of AFC effectiveness is modest, several earlier reviews have attempted to summarize existing assessments (e.g., Menec and Brown 2018). However, their reviews did not focus on the outputs and outcomes of the AFCs.

Through a scoping review, this paper synthesizes research evaluating AFC programs to answer the question: Do such programs make a substantial difference? More specifically, have they produced positive outcomes, or outputs that are predicted to lead to positive outcomes for older people? Evaluating AFC outputs/outcomes helps assess if they are effective and worth doing. To facilitate future AFC efforts, it is also helpful to know why some AFCs work better than others in achieving these outputs and outcomes. This matters for planners as these programs provide important models for creating comprehensively age-friendly communities that bring expertise from a variety of partners to the

endeavor (Winick and Jaffe 2015).

In this paper, we focus on those AFCs using versions of the WHO age-friendly model or framework because this model/framework has been applied around the world (World Health Organization n.d.). Focusing on evaluation, we first define the inputs, outputs, and outcomes of an AFC program. We then examine what outputs and outcomes the AFCs have achieved by reviewing journal articles, dissertations, book chapters, and third-party reports on assessing AFC outputs and outcomes. We also pay attention to the uniqueness of AFC implementation in different geographic and economic settings, a key interest for planners.

Compared to the many AFC programs worldwide, we found that relatively few studies have evaluated program outputs and outcomes. Those that are more effective in achieving outputs and outcomes tend to have more resources (political, funding, technical, infrastructural, locational, social), engaged participants (collaborators, leaders, champions, and older people themselves), and use effective strategies to build support (quick wins, awareness raising, and cultural sensitivity). Future research could expand the diversity in evaluation methods and geographical areas. More importantly, work is needed to explore the needs of under-represented older populations such as indigenous and ethnic minority people, and those in deprived areas.

Citations

- Gonyea, Judith G., and Robert B. Hudson. 2015. "Emerging Models of Age-Friendly Communities: A Framework for Understanding Inclusion." *Public Policy & Aging Report* 25 (1): 9–14. <https://doi.org/10.1093/ppar/pru056>.
- Menec, Verena, and Cara Brown. 2018. "Facilitators and Barriers to Becoming Age-Friendly: A Review." *Journal of Aging & Social Policy*, October, 1–23. <https://doi.org/10.1080/08959420.2018.1528116>.
- Steels, Stephanie. 2015. "Key Characteristics of Age-Friendly Cities and Communities: A Review." *Cities, Current Research on Cities (CRoC)*, 47 (September): 45–52. <https://doi.org/10.1016/j.cities.2015.02.004>.
- Winick, Bradley, and Martin Jaffe. 2015. "Planning Aging-Supportive Communities (PAS 579)." *American Planning Association*. 2015. <https://www.planning.org/publications/report/9026902/>.
- World Health Organization. n.d. "About the Global Network for Age-Friendly Cities and Communities." *Age-Friendly World* (blog). Accessed July 26, 2021. <https://extranet.who.int/agefriendlyworld/who-network/>.

Key Words: Age-Friendly-Community, age-friendliness, older people, implementation, evaluation

A RESEARCH ON THE CONFIGURATION OF FACILITIES AND BEHAVIORS OF RESIDENTS IN HISTORIC URBAN AREAS FROM THE PERSPECTIVE OF COMMUNITY LIFE CIRCLE: CASE STUDY OF PINGYAO ANCIENT CITY

Abstract ID: 1285

Individual Paper Submission

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The community life circle is also essentially a portrayal of the interaction between community space and residents' activities. It is an important direction for research to identify the behavioral characteristics of residents' activities according to the classification of residential areas, which are mostly classified by income class and housing type of the current studies.

Historic urban areas have the dual attributes of heritage and habitat, often being both residential, political, commercial and cultural areas, with mixed land uses, high density, complex populations and a variety of activities. While the emphasis is on preserving the physical heritage of historic districts, it is also important to maintain the stability of the community's residential and living functions through a variety of planning, management, financial and technical means, in order to achieve sustainable development for the community and its residents. It is therefore necessary to consider the living standards of the residents and the configuration of public facilities in a people-centred manner.

Historic urban areas differ from ordinary settlements in terms of their social structure and configuration of facilities, and are often characterised by the following features: a high degree of ageing of the population and a high rate of emigration in terms of the composition of the inhabitants; a situation of constant replacement and mixing of old and new residents, local and incoming residents in terms of social network; high density, with few outdoor public spaces and green areas in terms of spatial characteristics; lacking of large scale facilities such as commercial centres and hospitals in terms of facility configuration.

Based on these characteristics, historic urban areas can be studied as a distinct type of settlement, but there are currently few studies that consider historic urban areas from the perspective of community life circle. Are the amenity

needs of residents in historic urban areas more difficult to meet and how their activity behaviours are influenced by the space? Do residents show different characteristics in terms of their daily activity range and activity trajectory? These are the research questions of this paper.

This paper analyses the specific case of the ancient city of Pingyao in China, using the methods of questionnaires and activity trajectory mapping, explores the facility needs and activity behaviour of the residents, and evaluates the current state of the configuration of facilities based on a perspective of community life circle.

The results of the study show that there is less demand for commuting and more demand for basic life activity, with the majority of the population using the facilities being elderly people. The need for basic security facilities such as clinics and pharmacies, markets and hospitals is the most urgent in the ancient city. In terms of plazas and green spaces as well as cultural and sports facilities, emphasis should be placed on the improvement and management of existing facilities. Through this case study, a possible method of analyzing the configuration of facilities and residents' behaviors in historic urban areas based on community life circle is proposed, and relevant suggestions are made. A hierarchical configuration of basic security-type facilities at various spatial levels should be established in the historic urban area. At the same time, the spatial characteristics of the historic urban area should be combined to increase the temporal flexibility and functional complexity of the facility configuration. Based on community living circles, the physical environment of the slow-moving should be optimized, aided by soft means such as the implementation of time-segmented traffic flow restrictions.

Citations

- Ye, M., et al. "Analysis of effects of contributing factors on choice of activity pattern in historic urban areas." *Dongnan Daxue Xuebao (Ziran Kexue Ban)/Journal of Southeast University (Natural Science Edition)* 44.1(2014):211-215.(in Chinese)
- Wu, Haoyuan, et al. "Analysis and optimization of 15-minute community life circle based on supply and demand matching: A case study of Shanghai." *Plos one* 16.8 (2021): e0256904.
- LU, Min, Yuqiu TANG, and Zhuomin TAO. "Study on the Resident's Collective Memory in Historic District Based on Cognitive Map: A Case Study of the Changzhou Qingguo Historic District." *Modern Urban Research* (2016).(in Chinese)

Key Words: facility configuration, Behaviors of Residents, community life circle, activity trajectory mapping, Pingyao Ancient City

COVID AND THE POLITICS AND PLANNING OF MEMORY

Abstract ID: 1303

Individual Paper Submission

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After the devastating flu pandemic of 1919-1919, America quickly moved on. Few novels, movies, or plays did more than make a quick allusion to the death of 25-100 million people worldwide and at least 650,000 Americans. Similarly, America constructed virtually no memorials to those lost. The pandemic simply slide into the fog of history (Segal 2021).

One might have anticipated a similar absence in our current pandemic. While the coronavirus pandemic has caused the death of over 1 million people in the US and over 6 million worldwide and the numbers seem numbing when we consider the loss associated with those deaths for families, friends, and colleagues, America has rarely constructed memorials to the dead of an epidemic.

However, the situation seems quite different with COVID-19 (Fox 2020; Tombley 2020). Artists, activists, and finally governments have begun commemorating the dead soon after the true impact of the pandemic began to be realized. In a database we have constructed, we have identified at least 38 proposed or implemented ephemeral or permanent commemorative actions in the US. These commemorative actions vary from digital to traditional monuments, ephemeral one-day or weekend celebrations to reoccurring actions intended to mark important milestones in the numbers of deaths.

This paper will consider three questions: First, why has COVID elicited such a significant difference from a century ago? Two, how has the current generation of commemorative designs affected the design and location of these memorials? Three, how may the proposed memorials still obscure the full impact of the deaths in ethnic, racial, immigrant, and indigenous communities.

We will draw on a number of literatures to consider these questions, including cultural landscapes and memorial

design (Sloane 2018), memory and its erasure (Sion 2014), and the disparities both in health and historical memory of marginalized groups, especially people of color who have been disproportionately affected by the current pandemic. Careful textual and design analysis will be combined with a consideration of the community development meaning of remembering, memory, and place.

Citations

- Sloane, D. 2018. *Is the Cemetery Dead?* Chicago: University of Chicago Press
- Sion, B. 2014. *Death Tourism: Disaster Sites as Recreational Landscape*. Seagull Books.
- Segal, D. 2021. Why are there almost no memorials to the flu of 1918?. *New York Times*: [https://urldefense.com/v3/__https://www.nytimes.com/2020/05/14/business/1918-flu-memorials.html__;!!Llr3w8kk_Xxm!73r92JdWdxuoKgXEW4S4RoB-wF6mSEG6dhj2lxJGjq2DSSjOVg1FeHvkkO3iig\\$](https://urldefense.com/v3/__https://www.nytimes.com/2020/05/14/business/1918-flu-memorials.html__;!!Llr3w8kk_Xxm!73r92JdWdxuoKgXEW4S4RoB-wF6mSEG6dhj2lxJGjq2DSSjOVg1FeHvkkO3iig$)
- Fox N. 2020. Memorialization and COVID-19. *Contexts* (Berkeley, Calif) 19(4):69-71. doi:10.1177/1536504220977941
- Tombley, P. 2020. Memorializing COVID-19 and the Problems of Collective Guilt. *McGill Journal of Political Studies*: [https://urldefense.com/v3/__https://mjps.ssmu.ca/2020/11/28/memorializing-covid-19-and-the-problems-of-collective-guilt/__;!!Llr3w8kk_Xxm!73r92JdWdxuoKgXEW4S4RoB-wF6mSEG6dhj2lxJGjq2DSSjOVg1FeHvI3lVgeA\\$](https://urldefense.com/v3/__https://mjps.ssmu.ca/2020/11/28/memorializing-covid-19-and-the-problems-of-collective-guilt/__;!!Llr3w8kk_Xxm!73r92JdWdxuoKgXEW4S4RoB-wF6mSEG6dhj2lxJGjq2DSSjOVg1FeHvI3lVgeA$)

Key Words: COVID-19, Memorials, Public Space, Memory and Erasure, Diverse Populations

SENSE OF BELONGING IN URBAN SPACE AMONG DIFFERENT GENERATIONS IMMIGRANTS IN TORONTO

Abstract ID: 1398

Individual Paper Submission

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The research presents a study of the perception of public places and sense of belonging in residential neighborhoods by younger and older Iranian immigrants living in the Toronto metropolitan area. Few works in the literature have investigated the relationship immigrants develop with the shared spaces of the city and their residential environment, and how that relationship can impact the development of a “sense of belonging” in the city.

This research aims to provide an insight into sense of attachment and belonging as experienced by Iranian immigrant community in Toronto, based on the individual’s gender, age, occupation, duration of stay, type of household, the number of movements, the location of their neighborhood, type of building and tenure. The research uses a two-part methodology, involving qualitative interviews about the experience of immigration, together with quantitative data, collected from an online survey on daily activities responded by a non-probabilistic sample of 150 immigrants.

Citations

- Feldman, R. (1990). Settlement-identity, psychological bonds with home places in a mobile society. *Environment and Behavior*, 22(2), 183–229.
- Sassen, S. (2005). The Global City?: Introduction Concept. *Brown Journal of World Affairs*, 38(4), 557–573. <http://www.saskiasassen.com/pdfs/publications/the-global-city-brown.pdf>
- Sanderson, M. R., Derudder, B., Timberlake, M., & Witlox, F. (2015). Are world cities also world immigrant cities? An international, cross-city analysis of global centrality and immigration. *International Journal of Comparative Sociology*, 56(3–4), 173–197. <https://doi.org/10.1177/0020715215604350>

Key Words: sense of attachment and belonging, perception of public places, Global cities

MEDIA NARRATIVES OF PLANNING: SOCIAL EQUITY AND ENVIRONMENTAL JUSTICE DISCOURSE AT TURKEY CREEK

Abstract ID: 1433

Individual Paper Submission

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Local media powerfully influences public perception. The importance of the media's role in shaping the opinion about planning projects is a critical but often overlooked area of research. News reports work as tools for individuals to

incorporate their own ideas through forced frames of reference positioned by media narrative. Furthermore, the power of the media allows privileged groups to disseminate specific stories and marshal support for planning projects by disseminating specific ideas. The now-famous notion that the news media directs the populace of what to think about is still valid, however, more accurate, is that the news media directs the way the populace thinks about ideas (McCombs & Shaw, 2003).

Planning discourse is based on the underlying predispositions of a group (Healey, 1996). Forester (2009) notes that as culturally framed dispositions lead to conflict, the communicative aspects of planning become more important. Communicative planning's goal as building greater consensus through shared meaning and group intelligence is paramount to increased equity and social justice.

Local news reports form a narrative of planning activities, and the public's perception of planning is molded and magnified by its representation in the press (Clifford, 2006). The rhetorical frames constructed by the media can drive narratives in the act of policy setting (Schön, 1979). However, impartiality does not ground the narrative. The public's attitude towards planning is formed both through historically constituted experience and the imagined heritage of a place (Holman, 2014; Tighe & Opelt, 2016).

The public debate surrounding development in the Turkey Creek neighborhood of Gulfport, Mississippi provides a case for examining the role of local media in framing the planning debate. The Turkey Creek neighborhood was founded by black freedmen in the 1870's and has remained a vital, but economically disadvantaged, African American community since. The neighborhood is threatened by frequent flooding as commercial development encroaches the creek's floodplain. Recently, fierce debate surfaced as the city government proposed the construction of a multilane highway through the neighborhood to alleviate traffic congestion at a nearby interstate interchange and to spur economic development.

This program of research focuses on the media narratives that drive the disconnect between planning practice and the goals of increased social equity and environmental justice. The media's role becomes problematic for free and open debate because local news is often less of a "watchdog" and more a source of boosterism (Shumow & Gutsche, 2015). Local elites and officials utilize the media to reinforce established power structures through specialized language and the reporting of specific events or ideas (Vincent, 2000). Linking equity and environmental justice with narrative inquiry is a novel approach to understanding how diverse groups imagine their shared future. Findings come from 102 newspaper articles and local broadcast reports in the print newspaper Sun Herald and the broadcast television stations WLOX and WXXV between 2015 and 2022.

Through this narrative analysis, this project specifically answers the following questions:

1. How do media reports narrate the past and future at Turkey Creek?
2. How do media reports narrate social equity and environmental justice at Turkey Creek?
3. What is the overall level of discourse surrounding planning, growth, and equity at Turkey Creek?
4. How do these reports combine to communicate a narrative of planning at Turkey Creek?

The narrative analysis of these media reports uncovers the prevailing narratives and frames of reference concerning equity and the future in racially diverse, environmentally vulnerable, and economically stressed neighborhoods. The narratives formed through media reporting of Turkey Creek reveals important insight into how planners can better communicate policy, understand community aspirations, and bridge the gap between community voices and political leadership.

Citations

- Forester, J. (2009). *Dealing with differences*. New York: Oxford University. Forester J (1993) *Practice stories: The priority of practical judgment*. In: Fischer F and Forester J (eds) *The Argumentative Turn in Policy Analysis and Planning*. London: Duke University Press.
- Healey, P. (1996). *Planning Through Debate: The Communicative Turn in Planning Theory*. In F. Fischer & J. Forrester, *The Argumentative Turn in Policy Analysis and Planning* (2nd ed., p. 238). Durham: Duke University Press.
- Sandercock, L., (2010). *From the Campfire to the Computer: An Epistemology of Multiplicity and the Story Turn in Planning*. In: G. Maciocco and L. Sandercock, ed., *Multimedia Explorations in Urban Policy and Planning*. New York: Springer, pp.17-38.
- Throgmorton, J. (2003). *Planning as Persuasive Storytelling in a Global-Scale Web of Relationships*. *Planning Theory*, 2(2), 125-151. doi: 10.1177/14730952030022003
- Tighe, J., & Opelt, T. (2014). *Collective Memory and Planning*. *Journal of Planning History*, 15(1), 46-67. doi: 10.1177/1538513214554767

Key Words: Communicative Planning, Environmental Justice, Planning Narratives, Media, Social Justice

ESCAPING FROM THE IDENTITY ENCLAVE: SOCIAL INCLUSION PROGRAMS AND FLOATING MIGRANTS' SETTLEMENT INTENTION IN CHINA

Abstract ID: 1502

Individual Paper Submission

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China has undergone unprecedented waves of internal migration over the last four decades. In general, there are two generations of migrants. The old-generation migrants were born before the 1980s, and they mostly come from rural areas. The new-generation migrants have a higher probability of coming from small towns rather than rural areas. This has fundamentally expanded the pattern of migration in China from a rural-urban dichotomy to a more comprehensive pattern that involves both rural and urban migrants. Meanwhile, the discrimination in life experience imposed by the lack of local urban hukou status reduces rural migrants' settlement intention. This separation of rights puts them into an "identity enclave" which challenges floating migrants' hegemonic constructions of place and identity. Although economic incentives are important for the floating migrants' settlement intention, socio-cultural attachment also plays an equal, if not more important role. The emotional attachment of the floating migrants to their urban milieu could help them develop an identity thereby the intention to stay. This research explores the relationship between social inclusion programs and floating migrants' intention to stay. Based on the theories of social capital through differentiating the effects of bonding social capital and bridging social capital, the research hypothesizes that social inclusion programs, which improve floating migrants' attachment with the local community, are positively associated with their intention to stay. The analysis draws data from the 2017 China Migrants Dynamic Survey (CMDS) and highlights heterogeneous groups by examining the association in the skilled, semi-skilled, and unskilled floating migrants respectively. The findings could be informative for scholars and policymakers to understand how floating migrants in China strive to develop an attachment to their urban environment.

Citations

- Fan, C. V., Hall, P. V., & Wall, G. (2009). Migration, Hukou Status, and Labor-Market Segmentation: The Case of High-Tech Development in Dalian. *Environment and Planning. A*, 41(7), 1647–1666. doi:<https://doi.org/10.1068/a4165>
- Liu, Y., & Shen, J. (2014a). Jobs or Amenities? Location Choices of Interprovincial Skilled Migrants in China, 2000–2005. *Population Space and Place*, 20(7), 592–605. doi:<https://doi.org/10.1002/psp.1803>
- Zhu, Y., & Chen, W. (2010). The settlement intention of China's floating population in the cities: recent changes and multifaceted individual-level determinants. *Population, Space and Place*, 16(4), 253–267. doi:<https://doi.org/10.1002/psp.544>
- Zou, J., & Deng, X. (2021). The complex association between migrants' residential community choice and subjective well-being: Evidence from urban China. *Growth and Change*, 52(3), 1652–1679. doi:<https://doi.org/10.1111/grow.12497>

Key Words: Migration, China, Floating Migrants, Social Capital, Settlement Intention

GEOGRAPHICALLY-EMBEDDED, INDIVIDUALLY-MOTIVATED, AND INSTITUTIONALLY-MOBILIZED: SHIFTS IN FOUNDATION GRANTMAKING FOR URBAN DEVELOPMENT

Abstract ID: 1521

Individual Paper Submission

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This paper investigates shifts in prominent place-oriented foundations' grantmaking for urban development in cities that have experienced persistent socioeconomic distress. Through longitudinal case studies of three place-oriented foundations, this paper provides insights into their motivations and mobilization in distinctive geographic, institutional, and political contexts: the Kresge (Detroit), Lyndhurst (Chattanooga), and Cleveland Foundations (Cleveland). Prominent philanthropic foundations in the United States have long sought to address urban problems by supporting and, at times, initiating a variety of urban development programs, from neighborhood planning to comprehensive revitalization initiatives (Rohe 2009). These initiatives have primarily focused on poverty alleviation at the community level.

In the recent two decades, however, a number of place-oriented foundations have shifted from providing ameliorative services toward taking on more direct roles in urban development (Thomson 2020). Rather than merely responding to changes in their contexts, these foundations also seek to (re)shape the contexts and forge political will so that they align with the foundations' interests (Lowe and Grengs 2020). Drawing upon the perspectives from organizational

theory, particularly alternative perspectives on the nexus between firm strategies and contexts (Christopherson and Clark 2007; Marshall et al. 2018), this paper analyzes the three prominent foundations' motivations and mobilization strategies in urban development—what has been funded, where, and why. The guiding research questions are: (1) Why have these foundations shifted their problem-solving strategies in urban development in cities in which they operate? (2) Why have their newly defined problem-solving strategies extended to constructing economic, political, and institutional contexts beyond (re)shaping the physical context?

By integrating grant data analysis, content analysis, non-participant observation, and semi-structured interviews, I develop case studies that longitudinally examine the three foundations' grantmaking for urban development in distinctive geographic, institutional, and political contexts. The selection of the Kresge, Lyndhurst, and Cleveland Foundations is based upon three categories: prominence in the space of urban development, comparable socioeconomic distress and divide in the cities they are committed to, and the types of foundations they represent—national/local foundation, local foundation, and community foundation. Using grant data from 2003 through 2017 collected from Foundation Directory Online and IRS Tax Form-990, I identify distinctive problem-solving strategies. Content analysis, non-participant observation, and semi-structured interviews with foundation leaders and planners not only enable refining the categorization, but also shed light into the foundations' motivations and (re)shaping of their economic, political, and institutional contexts.

The findings are threefold. First, important individuals in each foundation initiated the shifts, driven by their interpretation that their organizational interests and the prosperity of the cities of their operation are interconnected and by desire for their own legacy. Secondly, the foundations sought to leverage distinct geographies—waterfront, anchor institutions, downtown—not only for economic growth, but also for the imagination of possible futures, which led to geographic prioritization for their grantmaking and investments. Lastly, the foundations developed extensive organizational networks while creating new institutions with the sole purpose of executing their plans and forged political support at all levels of government in order to create enabling conditions for their new problem-solving strategies; to ensure the continuity of their visions for the cities through mayoral changes; and to project new images of the cities.

By taking the perspectives from organizational theory, with a focus on how organizational strategies extend to the contexts in which they operate, the analysis contributes to more theoretically informed and contextualized understanding of drastic changes in place-oriented foundations' grantmaking for urban development. As planning scholars increasingly question the sustainability of the growth-oriented problem-solving strategies, future research that examines the role of planning and policy in integrating growth with equity in the work of place-oriented foundations is warranted.

Citations

- Christopherson, S., and Jennifer Clark. 2007. *Remaking regional economies: Power, labor, and firm strategies in the knowledge economy*. New York: Routledge.
- Lowe, K., and Joe Grengs. 2020. "Private Donations for Public Transit: The Equity Implications of Detroit's Public-Private Streetcar." *Journal of Planning Education and Research*, 40(3): 289–303.
- Marshall, Neill, Stuart Dawley, Andy Pike, and Jane Pollard. 2018. "Geographies of Corporate Philanthropy: The Northern Rock Foundation." *Environment and Planning A: Economy and Space* 50(2): 266–287.
- Rohe, William. M. 2009. "From Local to Global: One Hundred Years of Neighborhood Planning." *Journal of the American Planning Association* 75(2): 209–30.
- Thomson, Dale. E. 2020. "Philanthropic Funding for Community and Economic Development: Exploring Potential for Influencing Policy and Governance." *Urban Affairs Review*, *Urban Affairs Review* 57(6): 1483–1523.

Key Words: philanthropy, foundations, community development, economic development, urban development

SPEAKING OUT ON THE UNSPOKEN GAPS: CRITICAL PERSPECTIVES FROM SOCIALLY ENGAGED ARTISTS IN SEOUL'S JUST CITY AGENDAS

Abstract ID: 1531

Individual Paper Submission

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Notably since the 2010s and especially since the 2016-17 Candlelight Protests, inclusivity (p'oyong), equity (kongjŏng), and social engagement for change became imprinted in South Korea's policy and public lexicon. Similar narratives and sentiments are also focal in the country's urban development and art sectors. This research focuses on artists primarily in Seoul, South Korea that exhibit socially engaged practices (Helguera, 2011) in what I call "just city agendas": a concerted action that aims to critically reflect the city's trajectories and the role of artists within, and thereby redefine what the procedural and outcome goals of urban planning should be. Seoul serves as an intriguing

research site where just city agendas with artists and cultural means are being sought at various grassroots and institutionalized levels, illustrating a valuable insight into a “creative just city” – where creative practices and value systems intersect with just city values and policies for inclusive growth. To overcome the common, past approaches of lumping artists into an abstract, broad category and bestowing them with certain characteristics and abilities, I focus on the artists’ themselves and their experiences as a key analytical context for policy implication. The research purpose is to both advance the critical perspectives and critiques of the established Creative City and Just City models (McLean, 2014) and further provide a historicized and nuanced understanding of South Korea’s ‘growth pains’ as a developed country striving to transition into a “just society (kongjŏng sahoe)” (Choo & Currid-Halkett, 2020).

Participant-observation and in-depth interviews from 2019 (and into the COVID-19 pandemic) are at the core of this research. The primary interviewees are artists working/that have worked in place-based, socially engaged projects under the following environment(s): (1) as commissioned artists and/or artists-in-residence at “urban regeneration (tosijaesaeng)” projects (implying a transition from top-down, demolition-based redevelopment to participatory, humane approaches) designated by the Seoul Metropolitan Government; (2) community organizations; and (3) grassroots “solidarity activism” or “artivism” against urban injustice. Through the narrative arcs of the artists’ upbringing, personal and professional experiences, the process that guides/guided their socially engaged work, and perspectives on urban development and planning issues, I seek the following research questions: 1) how the artists define and view ‘creative just city’ values and themselves in their socially engaged work, and 2) the driving factors to be socially engaged with urban and community issues in their work, and to be involved in just city agenda(s) as a stakeholder.

As a theory and theme-driven research, the employed methods helped in studying existing inquiries behind creative cities and just cities, producing grounded theory where new cases and concepts are found (Brown-Saracino, 2009). This paper deals with the findings emerged from the woes, ambivalent positionality, and learning curves from the artists in carrying out socially engaged projects, working with government (systems) and community/interest groups. Specifically, the ‘unspoken gap’ revealed by female, younger, and/or ‘novice’ artists show how much gender, age/seniority, and lived/work experience account for the precarity and adversity in carrying out projects, the difficulty in creating and sustaining momentum for change, and even influencing one’s perception and expectation about achieving a just and equitable city. Such aspects indicate the country’s exacerbating gender and generational gap issues and the countereffect of stakeholder ‘lumping,’ demonstrating the need to have these voices heard for creative just city agendas to actualize into longer-term, comprehensive change. I anticipate these findings will contribute to the discussions on building more equitable and sustainable bridges within and between the art and urban planning worlds, advancing the humanist approaches in urban planning (Umemoto, 2017) and socially engaged art in creating safe and open environments for long-term inclusive processes and growth.

Citations

- Mclean, H. (2014). Digging into the creative city: A feminist critique. *Antipode*, 46(3), 669-690. doi:10.1111/anti.12078
- Helguera, P. (2011). *Education for socially engaged art: A materials and techniques handbook*. New York: Jorge Pinto Books.
- Choo, S., & Currid-Halkett, E. (2020). Socially engaged art(ists) and the 'just turn' in city space the evolution of Gwanghwamun Plaza in Seoul, South Korea. *Built Environment*, 46(2), 119-137. doi:10.2148/benv.46.2.279
- Brown-Saracino, J. (2009). *A neighborhood that never changes: Gentrification, social preservation, and the search for authenticity*. Chicago; London: The University of Chicago Press.
- Umemoto, K. (2017). Towards a humanist planning. *Planning Theory & Practice*, 18(2), 297–302.

Key Words: Creative Just City, Socially Engaged Artist, Community Development, Equitable City, Humanist Planning

RESIDENTIAL ENVIRONMENT AND REFUGEES' INTEGRATION INTO THE LOCAL COMMUNITY: THE CASE OF NORTH KOREAN DEFECTORS IN SOUTH KOREA

Abstract ID: 1537

Individual Paper Submission

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According to UNHCR statistics, the number of refugees worldwide has steadily increased in recent years, reaching 82.4 million at the end of 2020. Refugees are forced to migrate to other regions or countries to escape conflicts, political repression, and natural disasters, and they have to settle in a new location. The number of North Korean defectors who entered South Korea reached about 33,000, which is expected to continue to increase. However, problems of settlement and social integration have been raised due to North Korean defectors' maladjustment to

The issue of refugees' social integration is a local level matter because they face challenges in their daily lives on a local level (Daley, 2009). To adapt to the local community, refugees may build new communities or participate in existing communities through the process of acculturation as migrants. For cultural adaptation, migrants choose among several strategies, such as integration, assimilation, separation/segregation, and marginalization (Berry, 1997), and have different attitudes and consciousness toward the local community. Personal factors, such as age, gender, and previous experience, affect this choice (McMillan & Chavis, 1986), as do regional factors in both the original and host areas. In particular, the residential environment, including the physical environment and interactions between neighbors, can affect refugees' adaptation to the community (Bonaiuto et al., 1999). Therefore, it is necessary to study the process of adapting to local communities and forming local communities with natives, focusing on the residential areas that are the basis of settlement. From the perspective of urban planning, it is especially important to understand what residential environment factors affect the formation of local communities for refugees and to consider this for the residential environment plan.

This study aims to examine the process of integration of refugees into the local community using the case of North Korean defectors in South Korea and to analyze how the residential environment affects their cultural adaptation and sense of community. For these purposes, a survey and interviews with North Korean defectors in the Seoul Metropolitan Area will be conducted, and the data will be analyzed both quantitatively and qualitatively. The relationship is evaluated by constructing a model that includes a defector's sense of community as the dependent variable, personal characteristics, interactions with neighbors, and the physical environment as explanatory variables, and his/her adaptation strategy choice as a mediating variable.

The expected results of this study are as follows: First, North Korean defectors' sense of community will be affected by their satisfaction with their physical environment, such as housing, local amenities, and transportation, as well as their level of engagement and co-activities with their neighbors. Second, depending on the adaptation strategy, the local community's features in terms of building a community among North Korean defectors or with South Koreans, as well as the strength of the sense of community, will differ. Due to the peculiarities of North-South Korean relations, the majority of North Korean defectors will be under pressure to assimilate, while some may choose different strategies. These will mediate the relationship between the residential environment and the sense of community. Based on the findings of this study, we will discuss the implications for the residential environment and the activities required for refugees to successfully integrate into the local community.

Citations

- Berry, J.W. (1997). Immigration, acculturation, and adaptation, *Applied Psychology*, 46(1), pp.5-34.
- Bonaiuto, M., Aielo, A., Perugini, M., Bones, M., & Ercolani, A. P. (1999). Multidimensional perception of residential environment quality and neighborhood attachment in the urban environment, *Journal of Environmental Psychology*, 19(4), pp.331-352.
- Daley, C. (2009). Exploring community connections: community cohesion and refugee integration at a local level, *Community Development Journal*, 44(2), pp.158-171.
- McMillan, D.W. & Chavis, D.M. (1986). Sense of community: A definition and theory, *Journal of Community Psychology*, 14(1), pp.6-23.

Key Words: Refugees, North Korean Defectors, Local Community, Immigrant Adaptation, Residential Environment

HOW DOES SCHOOL CHOICE IMPACT COMMUNITY SOCIAL SUSTAINABILITY?

Abstract ID: 1564

Individual Paper Submission

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Communities across the United States have adopted school choice programs which provide educational alternatives beyond the public neighborhood school. These alternatives are varied and ostensibly form a market-based system where schools compete for students, enhancing the quality of their services. While the educational merits of these programs are hotly debated, there have been few investigations into the impacts of such options (as distinct from school closures) on the social sustainability of surrounding neighborhoods. Makris (2018) presents a specific investigation of school choice and gentrification. The planning literature more broadly addresses schools as a destination in an urban design and/or in a transportation mode choice context. Good (2019) and others have considered the impact of school closures on community development and revitalization. Schools as a location for community gardens, and as a contributor to social capital more generally, have also been discussed in the literature. However, there has been little investigation into the question of how school choice systems affect measures of community social sustainability. Additionally, this research assesses the different bonding, bridging, and linking of social capital evidenced in communities with neighborhood schools/choice schools (Osborne et al. 2016). Finally, this study evaluates how schools shifted (or did not shift) their relationship with neighboring communities due to the

pandemic.

Social sustainability as an element of the broader sustainable development concept is considered by many to be the most nebulous of the three sustainability pillars. Even so, Shirazi and Keivani's (2017) meta-analysis of the social sustainability literature highlights a coalescing around seven defining principles among which are "social networking and interaction" and "livelihood and sense of place." These principles form the basis in this work for measuring social connectivity between schools and their surrounding neighborhood. Schools have held key positions in community engagement through athletics and arts performances, supporting a sense of place and providing opportunities for broad community interactions. These enhancements to social sustainability may provide lasting impacts with respect to school fundraising and levy support, as well as increased social capital supporting student achievement (Warren 2017). Additionally, heightened engagement and identity may increase broader sustainability efforts related to, for example, school-based community gardens benefiting the surrounding neighborhood.

This study uses the city of Columbus and its School District (CCS), the largest school district in Ohio, as the focus of inquiry. Columbus and CCS provide a somewhat unique opportunity to explore a variety of school choice alternatives. While traditional neighborhood schools remain in the CCS repertoire, the district also includes lottery admission (up to 100% of school enrollment) in traditional, alternative, and specialty schools. Lottery based schools, therefore, may have few if any students from the immediate surrounding community. Moreover, the state of Ohio has a school choice system where taxpayer-funded assistance means CCS students can attend private schools. There are twenty-one public and nine private high schools within the CCS district boundary.

This paper represents the first phase of a two-phase effort exploring the relationship of high schools within the CCS district boundary with their associated neighborhood. In this phase, community demographic, site visit, and survey data are used to measure the school's identity and connections with the surrounding community. A survey of the CCS high school principals assesses their sense of the role the school plays in the surrounding community. The second phase of the study will assess the community's identity and connections with the schools by focusing on neighborhood business support measures. Results of this work provide insight regarding how school choice influences social sustainability principles related to sense of place and social interactions, and suggest fundamental issues of communication and trust provide policy directions moving forward.

Citations

- Good, R. M. 2019. Neighborhood Schools and Community Development: Revealing the Intersections through the Philadelphia School Closure Debate *Journal of Planning Education and Research* DOI: 20.1177/0739456X19839769
- Makris, M. V. 2018. The Chimera of Choice: Gentrification, School Choice, and Community. *Peabody Journal of Education* 93(4): 411-429.
- Osborne, C., Baldwin, C., and D. Thomsen. 2016. Contributions of Social Capital to Best Practice Urban Planning Outcomes. *Urban Policy and Research* 34(3):212-224.
- Shirazi, M. R. and Keivani, R. 2017. Critical reflections on the theory and practice of social sustainability in the built environment – a meta-analysis. *Local Environment* 22(12):1526-1545. DOI: 10.1080/13549839.2017.1379476
- Warren, M. 2017. Ch. 10: Public Schools as Centers for Building Social Capital in Urban Communities: A Case Study of the Logan Square Neighborhood Association in Chicago in *Schools and Urban Revitalization: Rethinking Institutions and Community Development*. (Patterson and Silverman, eds). Routledge: New York.

Key Words: sustainable development, neighborhood schools, school choice, social capital, community identity

IDENTITIES OF DISPOSSESSION: IMMIGRANT POLITICAL SUBJECTIVITIES AT THE INTERSECTION OF DEPORTATION AND DISPLACEMENT

Abstract ID: 1671

Individual Paper Submission

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Immigrants with precarious legal status living in global cities are positioned at the intersection of two forces of dispossession: ethnonational deportation and displacement from gentrification. These twin forces structure the everyday lives of immigrants, shaping the ways they engage with the built environment and their activism. Immigrants adopt routines and countless tactics to avoid deportation, contend with rapacious landlords, and organize to protect their communities, while watching their cities underwrite amenities that are designed for gentrifiers. Studies have demonstrated that despite increasing inequality and hostility, immigrant communities have navigated gentrifying urban contexts (Dávila 2004; Pérez, 2004; Pérez et al., 2010) and have served as important contributors to urban social movements (Nicholls & Uitermark, 2016; Nicholls, 2019). Under these circumstances, activists forge

new frameworks and identities to make sense of the urban context and strategies of resistance to dispossession.

This paper uses the case of Boyle Heights – a neighborhood in Los Angeles, California – to assess how activists construct political identities within these spaces of dispossession. The working-class Latinx barrio of Boyle Heights has become a battleground whereby community groups with varying interests engage in multifront battles to stay in the city. Drawing from thirty extensive interviews and participant observations of first, second, and third generation Latinx activists organizing in different community-based groups, this paper demonstrates that activists adopt a political framework that allows them to tie these twin struggles to a rallying cry for the Latinx right to the city.

The paper shows that nearly all activists have constructed a political identity that fuses displacement and deportation into a single overriding threat. Gentrification, housing, detention, and deportations reflect particular instances of the general machine of dispossession. As one activist notes, “If you displace me from my hood, you might as well deport me.” Though the paper documents the formation of an “identity of dispossession” across diverse activists, it also suggests that this identity varies by activist networks. Activists associated with a progressive community development corporation, the East Los Angeles Community Corporation, conceive of dispossession as a threat but also believe that there are viable paths for upward community mobility within the capitalist city. The prospects of achieving the “American Dream” are narrow but possible with sufficient mobilizations and the right policy tools. In contrast, activists associated with the radical network, Defend Boyle Heights, view dispossession as a bulldozer intent on cleansing working class people of color from the city. They see themselves embedded within a life-or-death struggle with no path for inclusion or assimilation. The only path for radical organizers is revolution.

Examining diverse community-based strategies to fight gentrification offer important lessons as to how gentrification and displacement work in relationship to belonging, activism, and political representation in the built environment (Beltrán, 2010). These lessons have larger implications on the integration of marginalized voices in planning processes and civil society at large.

Citations

- Beltrán, C. (2010). *The trouble with unity: Latino politics and the creation of identity*. Oxford University Press on Demand.
- Dávila, A. (2004). *Barrio dreams*. University of California Press.
- Nicholls, W. J., & Uitermark, J. (2016). *Cities and Social Movements: Immigrant Rights Activism in the US, France, and the Netherlands, 1970-2015*. John Wiley & Sons.
- Pérez, G. M., Guridy, F., & Burgos, A. (Eds.). (2010). *Beyond el barrio: Everyday life in Latina/o America*. NYU Press.
- Sandoval-Strausz, A. K. (2019). *Barrio America: How Latino Immigrants Saved the American City*. Basic Books.

Key Words: Immigrant Communities, Urban Social Movements, Gentrification, Displacement, Activism

CLIMATE ADAPTATION PLANNING IN EAST BOSTON (MA, USA): MAKING AN ARGUMENT FOR COLLABORATIVE GOVERNANCE

Abstract ID: 1675

Individual Paper Submission

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East Boston (Boston, MA, USA) is a diverse, working-class, immigrant coastal community undergoing rapid gentrification while local environmental problems – such as air and noise pollution determined by the nearby Logan International Airport – continue to harm residents. Additionally, technical and scientific assessments warn that a large part of this community is at risk of being severely affected by climate change impacts such as sea-level rise, storm surges, and heatwaves, among other associated trends and events (City of Boston, 2016).

In East Boston, city-led planning efforts and climate resilience strategies have prioritized the preservation of socioeconomic systems perpetuating business as usual paths of urban development, aggravating overcrowded housing conditions and the displacement of long-time residents. Today, proposed interventions – including hard, soft, and hybrid strategies that integrate green and blue infrastructures – offer planners, developers, and local residents many opportunities to consider. However, these interventions also raise questions about whether plans for coastal protection interventions are sufficient to structure a comprehensive strategy that, while protecting vulnerable communities, will also improve their quality of life in the long term.

We conducted a year-long research process aimed at (1) exploring residents’ priorities, needs, and concerns, (2) generating a better understanding of how these fit (or not) in the current planning for resilience public agenda, and

(3) providing a roadmap to local residents and planners to frame planning for resilience through a justice lens. Our work in the field has led us to provide recommendations for East Boston's communities to achieve increased and meaningful participation, strategies to address the intersecting injustices, and a proposal for a more incremental evaluation of planning objectives. While these recommendations have the final goal to offer immediate responses to surfaced challenges, this research also sheds some light on the urgent need to overcome the rhetoric of public participation and rethink planning for resilience by shaping planning actions using principles of advocacy and pluralism (Davidoff, 1965).

By drawing from literature on climate justice (Henrique & Tschakert, 2020), this paper critically reflects on the East Boston case and shows how climate adaptation stakeholders' power asymmetries are fueled by planning approaches rooted in modernist paradigms. The paper argues that planning for adaptation has to go beyond the production of resilient plans and generate new social spaces to nurture innovative forms of collaborative planning and governance (Healey, 1997; Innes et al., 2010) that can challenge the status quo if just processes and outcomes are desired.

Citations

- City of Boston, (2016). Climate Ready Boston.
- Davidoff, P. (1965). Advocacy and Pluralism in Planning. *Journal of the American Planning Association*, 31(4), 331–338. <https://doi.org/10.1080/01944366508978187>
- Healey, P. (1997). Collaborative planning: Shaping places in fragmented societies. Macmillan International Higher Education.
- Henrique, K. P., & Tschakert, P. (2020). Pathways to urban transformation: From dispossession to climate justice. *Progress in Human Geography*. <https://doi.org/10.1177/0309132520962856>
- Innes, J. E., Booher, D. E., & Booher, D. E. (2010). Planning with Complexity. Routledge. <https://doi.org/10.4324/9780203864302>

Key Words: Climate justice, adaptation, advocacy, collaborative governance

GENTRIFICATION-INDUCED DISPLACEMENT IN COLUMBUS, OHIO

Abstract ID: 1704

Individual Paper Submission

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This study explores the impact of gentrification in the city on the displacement of low-income populations, focusing on Columbus, Ohio as a case study. Research suggests that gentrification-induced displacement results in higher levels of suburban poverty (Ehrenhalt, 2012, Hochstenbach & Musterd., 2021), stronger poverty concentration in affordable parts of the city (Wyly and Hammell, 1999), and a decline in social mixing and increased spatial polarization (Newman and Wyly, 2006; Walks & Maaranen, 2008). A study across eight cities in Ohio found that for every one neighborhood that turned around (i.e. high poverty in 1980 and became low poverty by 2018), fifteen neighborhoods in the city went in the opposite direction to become newly poor (Segedy, 2020). In this study, we ask the following broad research questions: Are low-income populations in gentrifying neighborhoods in Columbus more likely to move out as a result of the gentrification process? and what kinds of neighborhoods do displaced low-income populations move to? To answer these questions, we utilize data from DataAxel, formerly InfoGroup's U.S. Consumer Database for years from 2007 to 2017. Using linear regression fixed effects modeling, we identify the relationship between gentrification, urban poverty, and suburban poverty in Franklin County, the county where the city of Columbus is located. We find that gentrification results in the movement of low-income populations to both city and suburban neighborhoods, increasing poverty in these neighborhoods. The effect is stronger for urban neighborhood poverty increases. Further, our results indicate that low-income families with children moving from gentrifying neighborhoods are more likely to move to suburban neighborhoods.

Citations

- Ehrenhalt, A (2012) *The Great Inversion and the Future of the American City*. New York, NY: Knopf.
- Hochstenbach, C., & Musterd, S. (2021). A regional geography of gentrification, displacement, and the suburbanisation of poverty: Towards an extended research agenda. *Area*, 53(3), 481-491.
- Newman, K., and E.K. Wyly, (2006), 'The right to stay put, revisited: gentrification and resistance to displacement in New York City', *Urban Studies*, 43(1), 23-57.
- Walks, R. A., & Maaranen, R. (2008). Gentrification, social mix, and social polarization: Testing the linkages in large Canadian cities. *Urban Geography*, 29(4), 293-326.
- Wyly, E.K., and D.J. Hammel (1999), 'Islands of decay in seas of renewal: housing policy and the resurgence of gentrification', *Housing Policy Debate* 10(4), 711-771.

UNDERSTANDING THE SCHOOL-TO-PRISON PIPELINE: EVIDENCE FROM THE ADD HEALTH NATIONAL LONGITUDINAL STUDY

Abstract ID: 1746

Individual Paper Submission

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Over the past twenty years, the phrase “school-to-prison pipeline” has become ubiquitously connected to those students at risk of becoming involved with the justice systems because of school difficulties, discipline, or removal. The “pipeline,” though, is often only part of the explanation as the at-risk young people tend to experience challenges across other areas, including the family, peers, and neighborhoods. Because of the confounding of risk factors, there remain some critical empirical questions regarding this pipeline. First, how does the pipeline function for many students? Second, how are these pathways developed or followed for many young people? It is crucial to understand how this pipeline works for young people most at risk to provide earlier and appropriate interventions to divert from juvenile and criminal justice system involvement. Because of multivariate empirical challenges, the starting point may be the identification of multiple school pathways toward the justice systems (and, for some, incarceration) for different groups of students.

Difficulties at home, in neighborhoods, and at school place many young people at an elevated risk for following a pathway to the justice systems. Indeed, hundreds of thousands of middle and high school students nationwide are at significant risk for delinquency adjudication, juvenile court supervision, and incarceration. Their problems often begin, or more commonly, are exacerbated by school discipline and exclusion protocols. Moreover, these experiences disproportionately impact certain young people including those of color and those who identify as LGBTQ.

Using longitudinal Add Health data collected among a nationally representative sample of youth in the U.S. (n=6,259), the present study examines pathways to adult incarceration through school discipline protocols and dropout across race, biological sex, and sexual orientation. Two major risk factors were examined: family-level risk factors include traumas resulting from maltreatment, family suicide, homelessness, witnessing violence, and parental incarceration; and neighborhood-level risk factors include measures of social disorganization such as racial/ethnic heterogeneity, a low level of homeownership, a high unemployment level, a low household education level, and a high poverty level.

First, the study examined the pathways from family-based trauma and neighborhood social disorganization through school discipline outcomes to adult incarceration; and second, looked at disparities in outcomes or differentiating pathways based on race/ethnicity, biological sex, or sexual orientation. There were two major findings. First, while the experience of childhood trauma both directly and indirectly increased the risk of adulthood incarceration, growing up in a socially disorganized neighborhood only indirectly increased the risk of adulthood incarceration through its increased risk of school suspension. Second, as expected, there was significant race/ethnicity inequality in socioeconomic status, as measured by the experience of receiving public assistance/welfare before age 18.

Understanding how the school-to-prison pipeline involves young people and leads to nefarious outcomes is difficult because of the multitude of risk factors and impacts over time. This study expanded upon other recent research by including known important explanatory variables as well as looking at the (indirect) impact of neighborhood social disorganization and family trauma. Future research should continue to investigate the impact of early family experiences, traumas, and related problems that place young people at greater risk for school exclusion and subsequently justice systems involvement. Because investigations continue to find significant race/ethnicity and gender disparities across trauma experiences, these are important to further understand; as well as the increasing recognition of the over-involvement of young people who identify as LGBTQ+ in the pipeline.

Citations

- Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States? NBER Working Paper Series, National Bureau of Economic Research, Cambridge, MA.
- Mitchum, P. & Moodie-Mills, A.C. (2014). Beyond bullying: How hostile school climate perpetuates the school-to-prison pipeline for LGBT youth. Washington DC: Center for American Progress.
- Mallett, C. (2016). Author (2016). The school-to-prison pipeline: A comprehensive assessment. Springer Publishing, New York, NY.

Key Words: Incarceration, Racial and ethnic disparities, Neighborhood social disorganization, School-to-prison pipeline, LGBTQ+

MAKING SPACE FOR AN ALTERNATIVE TO AUSTERITY IN SHRINKING CITIES: A STORY OF ADVOCACY FOR LAND BANKING POLICY IN INDIANA FROM 2020 - 2022

Abstract ID: 1760

Individual Paper Submission

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This paper provides a narrative summary of efforts to establish new legislative and contractual arrangements in support of a land bank in Muncie, Indiana, from 2020 through 2022. Focusing on a campaign to persuade city, county and state officials to amend existing law, the author examines building public capacity in the context of 'organized deprivation' (Hackworth 2019, p.12 - 27). Organized deprivation describes self-reinforcing austerity policies enacted by state and local units of government in shrinking Midwestern cities. This theory posits that racialized perceptions of cities, conservative ideology and physical decline become the justification for austerity and limits to local control. Hackworth's intervention is part of a growing political economy critique of governance and planning in shrinking mid-western cities that examines how places with population decline become sites of innovative governance strategies to support private accumulation (Akers 2013, Berglund 2020). These authors help make sense of why planning and policy initiatives to address the issue of property abandonment have been unevenly implemented in the wake of the 2008 financial crisis (Heins and Abdelazim 2014, Mallach 2006). From three years of advocacy for changes to laws enabling land banking practice, the author finds organized deprivation to be a useful heuristic for understanding the political economy of his site of practice. However, the author also describes strategies and tactics for seeking to preserve and expand the space for an alternative to austerity. While the political economy critique of the dynamics of urban decline accurately describes conditions, far too little is known or written about the practice of collaborative urban planning in declining cities, with some notable exceptions (Dewar and Linn 2015). Through first-hand accounts, interviews and descriptive data, this paper shows both the realities and possibilities of planning efforts in shrinking cities.

Citations

- Akers, Joshua. "Making Markets: Think Tank Legislation and Private Property in Detroit." *Urban Geography* 42, no. 8 (2013): 1070–95.
- Berglund, Lisa. "Critiques of Shrinking Cities Literature from an Urban Political Economy Framework." *Journal of Planning Literature* 35, no. 4 (2020): 423–39.
- Heins, Payton, and Tarik Abdelazim. *Take It to the Bank: How Land Banks Are Strengthening America's Neighborhoods*. Flint, MI: Center for Community Progress, 2014.
- Hackworth, Jason. *Manufacturing Decline*. New York, NY: Columbia University Press, 2019.
- Mallach, Alan. *Bringing Buildings Back: From Abandoned Proprieties to Community Assets*. New Brunswick, New Jersey: Rutgers University Press, 2006.

Key Words: shrinking cities, land banking, small cities, practice, austerity

EXPLORING COMMUNITY RESILIENCE IN URBAN AND RURAL SETTINGS USING AN ASSET-BASED APPROACH ON O'AHU, HAWAII

Abstract ID: 1797

Individual Paper Submission

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The threat of natural disasters will become more frequent and destructive as climate change intensifies in the upcoming decades (Pachauri et al., 2014). Disasters result in loss of life, economic instability, environmental damages, and the disruption of daily activities. As climate change induces more disasters, Hawai'i's remote geographical location makes the transport of emergency supplies from the continental United States difficult, unpredictable, and time-consuming, which calls for a better understanding and strengthening of community self-sufficiency and resilience.

While there is rich literature defining and exploring community resilience (e.g., Freitag et al., 2014; Cutter et al., 2016; Yu and Berke, 2021), there is a lack of understanding of how community assets contribute to different aspects of community resilience. This study seeks to address this gap by utilizing a community asset-based approach (Green and Haines, 2015) to identify and rank different types of community assets in promoting community resilience. Based on community surveys distributed in both urban and rural communities on O'ahu, Hawai'i, this study seeks to

understand how different types of community assets (i.e., physical, human, and social assets) contribute to four key community resilience elements (i.e., community networks and relationships, teamwork and leadership, information and communication, and training and education) in both urban and rural communities. Two-way analysis of variance (ANOVA) tests and post hoc Tukey HSD tests were performed to analyze the quantitative data from roughly 300 survey responses and compare the relative importance between different types of assets and the differences between urban and rural communities.

The findings show significant differences in the perceived importance of community assets between urban and rural communities. In general, residents in rural communities rank the importance of physical, human, and social assets for all four community resilience elements significantly higher than residents in urban areas. It is also interesting to find that compared to urban residents, rural residents consider physical assets (e.g., education facilities, medical facilities and clinics, and government and non-government buildings) much more important than human and social assets. The findings demonstrate that rural communities may have a lack of critical physical assets compared to urban communities in adapting to projected climate-related hazards and need more critical physical assets such as medical facilities. On the other hand, the urban residents seem to have fewer community connections and communications compared to rural residents and need to strengthen human assets (e.g., residents with extensive knowledge of the community, knowledgeable in farming and gardening, and knowledgeable in Native Hawaiian practices) and social assets (e.g., close connections with a community-based organization, frequently gather and share information to other households, or provide physical and emotional support to other households in times of need).

Investigating the relationship between community assets and community resilience could provide insight for state and local municipalities in developing future resilience projects that mobilize these community assets. Community-based and community-led projects like Community Resilience Hubs, which have grown in popularity, should be customized to function accordingly to fill the gaps in communities' existing assets.

Citations

- Cutter, S. L., Ash, K. D., & Emrich, C. T. (2016). Urban–rural differences in disaster resilience. *Annals of the American Association of Geographers*, 106(6), 1236-1252.
- Freitag, R. C., Abramson, D. B., Chalana, M., & Dixon, M. (2014). Whole community resilience: An asset-based approach to enhancing adaptive capacity before a disruption. *Journal of the American Planning Association*, 80(4), 324-335.
- Green, G. P., & Haines, A. (2015). *Asset building & community development*. Sage publications.
- Pachauri, R. K., Allen, M. R., Barros, V. R., Broome, J., Cramer, W., Christ, R., ... & van Ypersele, J. P. (2014). *Climate change 2014: synthesis report. Contribution of Working Groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change* (p. 151). Ipcc.
- Yu, S., Malecha, M., & Berke, P. (2021). Examining factors influencing plan integration for community resilience in six US coastal cities using Hierarchical Linear Modeling. *Landscape and Urban Planning*, 215, 104224.

Key Words: Community Resilience, Community Assets, Hazard Mitigation, Climate Change, Community Planning

COMMUNITY REINVESTMENT PLANNING: LEARNING FROM NEIGHBORHOOD STAKEHOLDER EXPERIENCES

Abstract ID: 1803

Individual Paper Submission

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This paper examines neighborhood stakeholder experiences of participating in community reinvestment planning in one Chicago neighborhood. I refer to community reinvestment planning as the activities, interactions, and processes that are carried out with the intention of channeling the investments of financial institutions into underdeveloped urban neighborhoods. Community reinvestment planning practices emerged from the community reinvestment movement in U.S. cities during the 1970s (Squires, 1992). Further, they involve a diverse array of approaches, including agitational forms of community organizing, where community groups pressure financial institutions into negotiating an investment plan, and more collaborative approaches, where financial institutions voluntarily partner with community groups to plan targeted investments (Schwartz, 1998). While there are numerous cases that document the former approach (see Immergluck, 2015; Squires, 1992; 2011), we still know very little about the latter. This study is specifically interested in examining community reinvestment planning that is initiated and steered by financial institutions. It specifically examines the experiences of neighborhood stakeholders that participate in planning activities to ask two inter-related research questions: 1) what practices do different neighborhood stakeholders engage in to influence participatory community reinvestment planning processes? And 2) how do experiences with participatory community reinvestment planning processes influence the attitudes and perspectives of neighborhood stakeholders towards the financial institutions that initiate them?

In order to answer these questions, I interrogate the experiences of neighborhood stakeholders that have participated in community reinvestment planning for a predominantly African-American Chicago neighborhood that has struggled to fight financial disinvestment since the 1960s. They not only include long-term business owners, residents, and leaders of neighborhood-based non-profit organizations, but also the staff of financial intermediaries and foundations, consultants, and other individuals who have a vested interest in neighborhood reinvestment. Rather than investigating their experience with one case of reinvestment planning, my study examines their historic and contemporary experience as participants in these initiatives. I draw heavily from interviews of neighborhood stakeholders in order to understand their experiences and perspectives. I also supplement my interview data with participant observation and historical documents.

My preliminary analysis suggests the following findings. First, neighborhood stakeholders that participate in bank-led community reinvestment planning employ a variety of tactics to influence the ultimate plan for reinvestment. These range from attempts to structure the overall planning process through proposal writing, presentations, meeting facilitation, as well as tactics that can either facilitate or impeded the planning process. Intersectional identities, which importantly include affiliations with community-based organizations, positions within those organizations, and relational connections to the neighborhood, play an important role in the tactics that neighborhood stakeholders employ. Second, neighborhood stakeholder participation in community reinvestment planning transforms views of financial institutions from potential and needed financial investors to philanthropic sponsors of community-based non-profits. That is, planning processes often result in partnerships between banks and community-based organizations, as well as charitable donations to the non-profits that neighborhood stakeholders are affiliated with. These findings suggest that community reinvestment planning has helped large banks extend their power and influence into the very geographies that they continue to exploit. Neighborhood stakeholders who are interested in equity, must employ existing, and develop new, subversive practices to disrupt this power relation.

Citations

- Immergluck, D. (2004). Credit to the Community: Community Reinvestment and Fair Lending Policy in the United States. M.E. Sharpe.
- Schwartz. (1998). Bank Lending to Minority and Low-Income Households and Neighborhoods: Do Community Reinvestment Agreements Make a Difference? *Journal of Urban Affairs*, 20(3), 269–301.
- Squires, G. (1992). *From Redlining To Reinvestment*. Temple University Press.
- Squires, G. (2011). *Organizing access to capital: Advocacy and the democratization of financial institutions*. Temple University Press.

Key Words: Community, Reinvestment, Participatory, Planning

SEEKING SOCIALLY JUST CITIES IN SOUTHERN CALIFORNIA: COMMUNITY-BASED STRUGGLES IN THE CITY PLANNING PROCESS

Abstract ID: 1806

Individual Paper Submission

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The utilization of the planning process in order to support marginalized communities has been a contested issue in both planning activism and planning theory (Arnstein, 1969; Mirafitab, 2009). There is a continuum which forms, in which on one end, planning reinscribes the dominant (racial) capitalist mode of production (Harvey, 2008), and on the other end, is a faith in the planning process as a site of equitable decision-making through community participation (Davidoff, 1969). Within this continuum are “pragmatic,” pluralist, and communicative theories in which the planner is the representative of a community and/or the medium through which honest communication takes place, and a narrow focus on participation in the planning process (Forester, 1982). The planning process becomes a battle of arguments between interested stakeholders or a space of small reforms, rather than one which understands, and takes seriously, state power and structural constraints. Additionally, progressive planning theories tend focus on the final outcome of the process, which, I will argue, limits our analyses, and can easily be trapped in binary thinking, such as Not In My Backyard vs Yes In My Backyard thinking, or reformism. While not undermining the potential importance of planning outcomes, a focus on outcomes limits our understanding of the importance of actions throughout the entire planning process to achieve other ends (Gilmore, 2008). Further, many progressive planning theories tend to overemphasize or take for granted (potential) progressive tendencies within planning.

Planning theories and on-the-ground actors are limited in their conceptualization of who the community is, how community-based organizations should engage the planning process, and how planners can support community-based organizations, without reinscribing racial capitalist legitimacy. We are left lacking an understanding of why and how communities utilize the planning process towards socially just ends, as well as in what specific ways do they

negotiate against state power and reformism.

In order to examine both the structural constraints and importance of the planning process for community-based organizations, I analyze two cases of community-based organizing in Southern California. The first case examines a community-based coalition that mobilized against a jail construction plan in Los Angeles. This fight built on 15 years of struggle against jail expansion in Los Angeles, in which the planning process was utilized at all stages. I focus specifically on organizing around the Environmental Impact Report because it best exemplifies a key planning tool that was utilized in this struggle. The second case study examines a community-based organization which has been challenging a General Plan update in Santa Ana. This organization acts both independently and in coalition, and seeks to challenge the city's General Plan update process due to the lack of community input and Environmental Justice language. Instead of focusing on one aspect, I will show how these organizations utilize the entire planning process towards organizing ends, while I highlight how they delayed the vote in order to influence the plan. These two cases highlight overlapping yet different practices, which illuminate the planning process for community-based organizations and coalitions seeking social justice.

This paper makes contributions to the planning literatures by showing how residents and community-based organization engage the planning process and highlights the specifics of how they struggle within the realm of planning. Additionally, I argue, that progressive planning theories need to better understand community-led development strategies, in order to support marginalized communities, while not legitimating the planning process as a site of equitable outcomes. In understanding the limitations and possibilities of the planning process through these two cases, I aim to further our ability to support communities in their analysis and struggle for the right to the city.

Citations

- Arnstein, Sherry R. "A Ladder Of Citizen Participation." *Journal of the American Institute of Planners* 35, no. 4 (July 1, 1969): 216–24.
- Davidoff, Paul. "Advocacy and Pluralism in Planning." *Journal of the American Institute of Planners* 31, no. 4 (November 1, 1965): 331–38.
- Gilmore, Ruth Wilson. "Forgotten Places and the Seeds of Grassroots Planning" in Hale, Charles R., ed. *Engaging Contradictions: Theory, Politics, and Methods of Activist Scholarship*. Global, Area, and International Archive. Berkeley: University of California Press, 2008.
- Harvey, David. "On Planning the Ideology of Planning" in Hillier, J. (Ed.), Healey, P. *Political Economy, Diversity and Pragmatism*. London: Routledge, 2008
- Miraftab, F. (2009). *Insurgent Planning: Situating Radical Planning in the Global South*. *Planning Theory*, 8(1), 32–50

Key Words: Activist Planning, Environmental Justice, Prison Abolition, Racial Capitalism, the State

SOCIAL CAPITAL AS A FACTOR SHAPING THE URBAN RENEWAL PROCESS: THE CASE OF KIRSEHIR BAGBASI NEIGHBORHOOD

Abstract ID: 1814

Individual Paper Submission

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Urban renewal has become an essential tool of neo-liberal urban policies implemented after 2000 in developing countries. When the urban renewal processes experiences of the developing world are examined, it is seen that very similar renewal practices are repeated in many geographies from Latin America to Turkey. However, each landscape hosts different processes according to society's socio-political characteristics and cultural structure. Despite similar practices by central and local policymakers, each city confronts us with varying renewal processes. What is the dynamic in the social structure that creates these different renewal processes, despite the central government's effort to homogenize urban areas and the local governments' goal of modernizing run-down neighbourhoods, which is repeated almost everywhere in Turkey? This study, built on this question, argues that the existing social capital in transformation areas is one of the most critical elements that shape the urban renewal process. And the study demonstrates this argument with the fieldwork carried out in the Kirsehir Bagbasi Urban Renewal Project implemented between 2011 and 2021.

Kirsehir is a small city known as a representative of the Abdals in Turkey. The term 'Abdal' refers to a unique ethnicity and the local folk musicians in Kirsehir, and the Bagbasi neighbourhood has been a home for them for years. Because the Abdals live there, Bagbasi has always been famous in Kirsehir and Turkey's broader Central Anatolian region. Despite the cultural value of this unique community, the Abdals have been a disadvantaged group socio-economically. As a result, they have been especially vulnerable to an urban renewal process implemented by the municipality. In 2011, the municipality initiated the renewal project. The community is neither consulted and informed, nor able to provide their input to the renewal plan due to the socioeconomic and educational levels. Today, thanks to the national

development goals, the Abdals, like other disadvantaged groups, confront serious risks, chief among them displacement. Due to a decision made without their contribution, the Abdals suffer the worst possible outcome of the process. While some Abdal families were displaced, some of them were settled in the new apartments built by the Housing Development Administration of Turkey (TOKI), and some others had to vacate the neighbourhood since they were tenants. Most of the Abdal families still live in their own homes in the area not included in the urban renewal area. But the neighbourhood's new environment and its changing socioeconomic profile do not support this unique culture, just as the apartment life proved to be unsuited for the lifestyle of Abdals who moved into TOKI blocks. The renewal causes many Abdal families to desert the neighbourhood by moving to houses in other districts where they can live with their cultural rituals.

The case study is structured on fieldwork conducted in two qualitative methods: participant observation and open-ended interviews. I have taken the opportunity to observe the renewal process first-hand for years, and I did open-ended interviews with twenty residents of Abdals, three municipal officials, and three local actors since 2018. This data collection process permits understanding the process from those who implemented it, who observed it, and those affected.

The findings show that the shaping of social capital, is one of the most critical determinants of an urban renewal process: the city scale where the project is implemented, the place of the renewal area in the social memory of that city, the trust and solidarity relations established by the residents of the renewal area within their community; their social networks based with the residents of the city, the local actors, the municipality and the state are also determinative.

Citations

- Roberts, P., & Sykes, H. (2008). *Urban regeneration: A handbook*. SAGE Publications Ltd, <https://dx.doi.org/10.4135/9781446219980>
- Field, J. (2016). *Social Capital* (3rd ed.). Routledge. <https://doi.org/10.4324/9780203794623>
- Schubert, D. (2014). *Contemporary Perspectives on Jane Jacobs: Reassessing the Impacts of an Urban Visionary* (1st ed.). Routledge. <https://doi.org/10.4324/9781315573908>
- LeGates, R.T., & Stout, F. (Eds.). (2011). *The City Reader* (5th ed.). Routledge. <https://doi.org/10.4324/9780203869260>
- Haas, T., & Olsson, K. (2014). *Emergent Urbanism: Urban Planning & Design in Times of Structural and Systemic Change* (1st ed.). Routledge. <https://doi.org/10.4324/9781315579160>

Key Words: Urban Renewal, Social Capital, Actor Analysis, Abdals, Bagbasi Urban Renewal Project

PRESERVATION ECOLOGY FOR INDIGENOUS LEARNING

Abstract ID: 1828

Individual Paper Submission

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Land is intrinsically embedded with the cultural heritage of Indigenous peoples despite the substantial alteration, transformation, and destruction of the landscape(s). Many scholars have noted that planning, especially as a government activity, is nestled within an epistemology that allows for the reproduction of norms and values that support the settler-colonial project at the expense of Indigenous lifeways (Natcher et al., 2013; Porter, 2010, 2016). There has been growing interest in the planner's role for more inclusive practice which, at times, involves including indigenous groups to a pre-established planning process and/or project. While this certainly includes indigenous perspectives into planning, it ultimately falls short of advancing indigenous sovereignty by not defining said planning activities on Indigenous terms and continues the cycle of upholding settler-colonial ideals.

In her work, Leanne Simpson is rightfully critical of the settler-colonial project (through which mainstream planning serves) and the role of the academy in dispossessing indigenous people of their land and knowledge systems under the banner of inclusivity. Further, she calls for indigenous people to look to the land as pedagogy where indigenous people can become enmeshed in their traditional knowledge systems, learn within their community, and learn how to be on the land (Simpson, 2014). Doing so challenges the reiteration of settler colonialism and allows for indigenous resurgence. This begs the question: If there is a role for planning to support Indigenous resurgence, what does it look and how does function?

This paper looks to historic preservation as a potential avenue for which planners can support indigenous resurgence. I approach historic preservation as a means to care for the legacy of cultural heritage to include both physical materials and intangible cultural practices such spirituality, patterns of thinking, and values (Tomlan, 2015). Using case studies at the intersection of historic preservation and environmental stewardship in the United States, this paper develops a framework that planners, preservationists, and Indigenous nations can refer to in meaningful

collaborations to help guide restorative practices that help enable the opportunity for Indigenous education through land pedagogy. In other words, this framework sets out to center the primacy of land in Indigenous resurgence by looking at ecological systems through a preservationist lens and contribute towards developing strategies where concepts like preservation, rehabilitation, restoration, and reconstruction, fundamentally serve Indigenous sovereignty. The paper contributes to ongoing conversations surrounding the interpretation of sacred landscapes, the limitations of the Secretary of the Interior standards, and the protection of indigenous landscapes from predatory development practices.

Citations

- Natcher, D. C., Walker, R., & Jojola, T. S. (Eds.). (2013). *Reclaiming Indigenous planning*. McGill-Queen's University Press.
- Porter, L. (2010). *Unlearning the Colonial Cultures of Planning* (1 edition). Routledge.
- Porter, L., & Barry, J. (2016). *Planning for coexistence?: Recognizing Indigenous rights through land-use planning in Canada and Australia*. Routledge.
- Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, 3(3), Article 3
- Tomlan, M. A. (2015). *Historic Preservation: Caring for Our Expanding Legacy* (1st ed. 2015.). Springer International Publishing.

Key Words: Indigenous Resurgence, Historic Preservation, Ecological Planning, Indigenous Planning, Cultural Landscapes

BUILDING NEIGHBORHOOD STABILITY? AN EXAMINATION OF COMPREHENSIVE COMMUNITY INITIATIVE EFFICACY THROUGH THE CASE OF PURPOSE BUILT COMMUNITIES

Abstract ID: 1844

Individual Paper Submission

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Uneven development between neighborhoods and retrenchment of the public sphere under neoliberal capitalism has led to increasingly poor outcomes for low-income and communities of color. Scholars claim that local government retrenchment has produced a larger role for the private sphere in service provision and community development, but the philanthropic sector has likewise filled many of these gaps in funding and governance. Since at least the 1990s, one response to the ills of neoliberal development and governance has been Comprehensive Community Initiatives (CCIs). CCIs are place-based, systemic interventions in low-income neighborhoods often led by philanthropic foundations collaborating with a variety of public and private stakeholders. While CCIs have been praised by foundation leadership as an avenue for creation of neighborhood stability in low-income neighborhoods, the academic literature is far less optimistic about the prospects of these initiatives in stabilizing neighborhoods (Martinez-Cosio & Rabinowitz Bussell, 2013; Pill, 2019). Most examinations of CCIs have utilized theory of change evaluations to determine foundation best practices; however, this type of evaluation provides no sense of how CCIs contribute to neighborhood change or stability. Thus, this paper asks the question: does the presence of a CCI in a neighborhood affect positive outcomes in terms of neighborhood stability?

To contribute to the scant literature on the efficacy of CCIs in stabilizing neighborhoods, this paper uses measures of residential and economic stability taken from the literatures on neighborhood stability and displacement to examine the outcomes of a CCI strategy, Purpose Built Communities. Purpose Built Communities was founded in 2009 by Tom Cousins, Warren Buffett, and Julian Robertson to replicate Cousin's community development work in the Atlanta neighborhoods of East Lake and Kirkwood. The strategy transforms neighborhoods by providing mixed-income housing, as well as education and community wellness programs, and has since been enacted in twenty-four cities throughout the Midwestern, Southern, and Northeastern United States by twenty-seven foundations. We use American Community Survey (ACS), Department of Housing and Urban Development (HUD), and county level tax appraiser data and quasi-experimental methods to examine this CCI strategy. While other studies have used quasi-experimental methods to examine single site CCIs (Rosenblatt & DeLuca, 2017; Theodos, 2022), this study provides the first multi-site quantitative examination of CCI efficacy in producing stable neighborhoods. Unlike previous quantitative studies of CCIs, this paper establishes counterfactuals at the county level instead of the city level as neighborhood change should be understood in comparison to regional changes. Likewise, we use measures of low-income neighborhood stability such as lack of in-mover exclusion, growth of affordable housing stock, and stability of low-income households (e.g. lack of evictions, foreclosures, and condo conversions) instead of milestones of middle-class attainment such as rising incomes and homeownership.

This study will contribute to the budding literature on CCI effectiveness in neighborhood stabilization. Understanding the outcomes of these programs that alter the built environment is important as massive amounts of money are being put toward these initiatives in United States cities. A recent study of only thirty cities found that foundations contributed at least half a billion dollars to community development (Thomson, 2021). Previous examinations of CCIs in San Diego and Atlanta found little positive change in neighborhood outcomes (Rosenblatt & DeLuca, 2017; Theodos, 2022). This raises concerns about the accountability of CCIs to communities (Martinez-Cosio & Rabinowitz Bussell, 2013), as well as local planners and municipal officials that assume foundations are producing neighborhood stability. Thus, this study could help communities, planners, and other public officials understand the work of CCIs and possibly help CCI practitioners reconsider their strategies. The study likewise contributes to the literature on neighborhood stability by highlighting the importance of the philanthropic sector in community development.

Citations

- Martinez-Cosio, M. & Rabinowitz Bussell, M. (2013). *Catalysts for Change: 21st Century Philanthropy and Community Development*. New York, NY: Routledge.
- Pill, M.C. (2019). Embedding in the city? Locating the civil society in the philanthropy of place. *Community Development Journal*, 54(2), 179-196.
- Rosenblatt, P., & DeLuca, S. (2017). What Happened in Sandtown-Winchester? Understanding the Impacts of a Comprehensive Community Initiative. *Urban Affairs Review*, 53(3), 463-494.
- Theodos, B. (2022). *Atlanta's East Lake Initiative: A Long-Term Impact Evaluation of a Comprehensive Community Initiative*. Washington, D.C.: Urban Institute.
- Thomson, D.E. (2021). Philanthropic Funding for Community and Economic Development: Exploring the Potential for Influencing Policy and Governance. *Urban Affairs Review*, 57(6), 1483-1523.

Key Words: neighborhood stability, Comprehensive Community Initiatives, philanthropic foundations, community development

AGING IN A CHANGING PLACE: THE ADAPTATION OF SOCIAL SERVICES FOR OLDER ADULTS OF COLOR AMID GENTRIFICATION

Abstract ID: 1884

Individual Paper Submission

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The majority of older adults prefer to age in place, but that can become more difficult when the places around them change. Older adults can experience displacement pressure through rising housing costs that occur with gentrification, and those who manage to remain can experience cultural and political displacement. This is especially true for older adults of color. Through changes in institutional and public spaces, older adults can come to feel that the neighborhoods they have called home for decades are no longer welcoming of them. This is particularly concerning when one considers that older adults tend to be more geographically restricted to their immediate neighborhoods than younger populations.

This research asks how one type of local institution, the social service agency, serves the needs of older adults of color while also navigating the evolving needs and demands of a changing local community. Using a social service agency in a gentrifying neighborhood of Boston, Massachusetts, as a case study, I address the following questions: what challenges do social service agencies face in targeting services to older adults when the neighborhood in which they are located gentrifies? What types of social, political, and economic pressures, if any, do social service agencies experience in gentrifying neighborhoods, and how do they react or adapt to these pressures? What are the implications of these reactions or adaptations for older adults of color aging in place? The findings reveal that social service agencies located in gentrifying neighborhoods must navigate a variety of pressures that come from new residents, longtime residents, the real estate market, local government, and funders. These lead to changes in mission, services, and target population, as well as physical displacement. This research builds on scholarship about gentrification and its impact on older adults, populations of color, and community-based organizations.

Citations

- DeVerteuil, Geoffrey. 2016. *Resilience in the Post-Welfare Inner City: Voluntary Sector Geographies in London, Los Angeles and Sydney*. Bristol: Policy Press.
- García, Ivis, and Mérida M Rúa. 2018. "Our Interests Matter": Puerto Rican Older Adults in the Age of Gentrification." *Urban Studies* 55 (14): 3168–84.
- Hyra, Derek S. 2017. *Race, Class, and Politics in the Cappuccino City*. Chicago, IL: The University of Chicago Press.

- Torres, Stacy. 2020. "For a Younger Crowd": Place, Belonging, and Exclusion among Older Adults Facing Neighborhood Change." *Qualitative Sociology* 43 (1): 1–20.
- Weil, Joyce. 2019. "Relationship to Place for Older Adults in a New York City Neighborhood Undergoing Gentrification: A Discourse Analysis." *City & Community* 18 (4): 1267–86.

Key Words: Gentrification, social services, older adults, community-based organizations

PERCEPTIONS OF CLIMATE ADAPTATION AND RESILIENCE IN THE COMMUNITY DEVELOPMENT FIELD

Abstract ID: 1886

Individual Paper Submission

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Major wildfires, heat waves, and drought conditions in the western United States have made headlines over the past few years. Climate change exacerbates the frequency and severity of these shocks and stresses, which disproportionately impact low- and moderate-income (LMI) communities and communities of color. The community development (CD) field helps address poverty through various approaches to promoting racial and economic equity (Rios et al. 2021). Yet climate adaptation and resilience are relatively new topics for many CD organizations and practitioners. CD organizations work across many sectors that influence the built environment, social services, and wealth building for LMI communities and communities of color. Whether focusing directly on climate issues or on other CD topics, their work affects prospects for "transformative" climate adaptation and resilience, i.e., measures that improve people's lives (Berke and Stevens 2016, Shi and Moser 2021). However, the majority of CD organizations' missions are not explicitly related to climate adaptation and resilience. While adaptation and resilience have risen on the agenda of planners and other local practitioners, social equity is not always well integrated into this work (Meerow, Pajouhesh and Miller 2019). How do community development practitioners perceive the risks associated with climate change for the communities they serve and what capacity (Glickman and Servon 2003) do they have to respond to impacts on their work and their communities? What do CD professionals think the obstacles and opportunities are for adaptation and resilience work in the different geographies they serve? A survey of CD professionals conducted June–August 2021 in the western US provides a starting point for understanding these questions. Focus groups with professionals in three CD subsectors—affordable housing, community development finance, and workforce development—provide additional insights into the obstacles, opportunities, and partnerships currently present in CD climate adaptation and resilience work. Roughly a dozen in-depth interviews with survey respondents provide additional insights into how CD practitioners in different geographies and subsectors perceive climate adaptation and resilience issues in relation to their organizational capacity and communities they serve.

Citations

- Berke, Philip R., and Mark R. Stevens. 2016. "Land Use Planning for Climate Adaptation: Theory and Practice." *Journal of Planning Education and Research* 36 (3): 283–89. <https://doi.org/10.1177/0739456X16660714>.
- Glickman, Norman J., and Lisa J. Servon. 2003. "By the Numbers: Measuring Community Development Corporations' Capacity." *Journal of Planning Education and Research* 22 (3): 240–56. <https://doi.org/10.1177/0739456X02250314>.
- Meerow, Sara, Pani Pajouhesh, and Thaddeus R. Miller. "Social Equity in Urban Resilience Planning." *Local Environment* 24, no. 9 (September 2, 2019): 793–808. <https://doi.org/10.1080/13549839.2019.1645103>.
- Shi, Linda, and Susanne Moser. 2021. "Transformative Climate Adaptation in the United States: Trends and Prospects." *Science* 372 (6549): eabc8054. <https://doi.org/10.1126/science.abc8054>.
- Rios, Michael, Bryan Hains, Vikram Koundinya, Carolyn Abrams, and Virginia Stanard. 2021. "Foundational Knowledge and Skills in Community Development: A Comparison of Educator Perspectives." *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X21997901>.

Key Words: community development, climate adaptation and resilience, low- and moderate-income communities, communities of color, capacity

IT'S ACCRUAL WORLD: HOW PERCEIVED CHICAGO CDFI CREDIT RISK DRIVES UP THE COST OF COMMUNITY DEVELOPMENT CAPITAL

Abstract ID: 1906

Individual Paper Submission

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A massive gap exists between what community development financial institutions (CDFIs) do and what the larger community development industry imagines they do. What unites CDFIs is the centrality of improving economic conditions for low-income communities through the increased flow of capital (Caplan, 2014). Contrary to conventional understanding, CDFIs do not universally provide below market rate financing to community borrowers. This research lays out a framework for understanding why this is the case.

CDFIs have evolved since the mid-1990s into vital intermediaries between finance capital and community development actors. But they are an understudied link between capital markets and communities, despite having an outsized impact on the available development financing in low- and moderate-income (LMI) communities (Benjamin, Rubin, & Zielenbach, 2004; Rubin, Caskey, Dickstein, & Zielenbach, 2008; Swack, Hangen, & Northrup, 2014). Although CDFIs play an outsized role in community and economic development financing, there are no studies documenting the details of their lending processes and how internal credit decisions are made. No one has documented how community development loan funds (one type of CDFI), provide multifamily real estate financing. Across existing literature, less is known about how CDLFs work from the inside.

This research is a qualitative explanatory parallel case study of a single type of CDFI – loan funds – used as a lens through which to assess financial investment risk calculations in Chicago. I identify how credit pricing choices are made within and between financial organizations by focusing on who makes risk pricing choices and what those choice-makers consider. Contemporary multifamily housing development finance results in uneven investments in local housing markets (Layser, 2019). Rather than looking at housing unit production and rehab “on the ground,” I focus on understanding how “upstream” activity within CDLFs, risk rating agencies, and other sources of capital shapes credit availability for investments in Chicago’s small and medium sized (SMMF) housing stock (Garboden, 2021). I ask the question: Why do CDLFs provide above market cost capital to community borrowers? To answer this question, I draw heavily on participant observation from working as an underwriter for the Federal Home Loan Bank of Chicago for five months in 2020. I combine that participant observation with qualitative interview data from 72 interviews (32 formal under IRB, 40 off-record conversations) between 2019–2021, including risk analysts across the FHLBC, rating analysts from S&P, AERIS and Moody’s, and financial managers from each of my three Chicago case CDLFs.

I find that one of the primary problems driving higher borrower cost is the mismatch between loan fund investors’ assessments of risk (what I call ‘perceived’ risk) and actual loss risk in lending (what I call ‘real’ risk) stemming from a lack of CDLF data transparency. I find that investors’ perceived risk of CDLF lending is the result of three primary things endemic to unregulated financial firms: (1) existing publicly available data are insufficient for rigorous outside assessment; (2) informational opacity drives higher investor risk ratings; (3) relying on proxy tools like ratings for risk analysis is fraught with conflicting goals and methods that do not always serve CDLFs well and can raise their organizational cost of capital. Higher institutional costs of capital for CDLFs mean higher costs for their community borrowers.

My research fills gaps in extant CDFI literature by delving into the weeds of CDLFs to illustrate the real limitations placed on what they can do resulting from structural constraints imposed by financial ratings. In doing so, my research challenges conventional ideas about how finance in LMI communities works and encourages a deeper understanding of what is needed to support and expand this industry without losing its original community mission.

Citations

- Benjamin, L., Rubin, J. S., & Zielenbach, S. (2004). Community Development Financial Institutions: Current Issues and Future Prospects. *Journal of Urban Affairs*, 26(2), 177-195.
- Garboden, P. M. E. (2021). Amateur real estate investing. *Journal of Urban Affairs*, 1-20.
- Layser, M. D. (2019). A Typology of Place-Based Investment Tax Incentives. *Washington and Lee Journal of Civil Rights and Social Justice*, 25(2).
- Rubin, J. S., Caskey, J. P., Dickstein, C., & Zielenbach, S. (2008). Assessing the Systemic Impacts of Community Development Loan Funds.
- Swack, M., Hangen, E., & Northrup, J. (2014). CDFIs Stepping into the Breach: An Impact Evaluation—Summary Report.

Key Words: Multifamily housing, Community development, Risk pricing, Community development financial institutions, Credit access

PUBLIC CONTACT AND NEIGHBORHOOD SOCIAL COHESION IN BEIJING, CHINA: AN EMPIRICAL STUDY COMBINING MOBILE PHONE DATA WITH QUESTIONNAIRE SURVEY DATA

Abstract ID: 1912

Individual Paper Submission

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A long-standing view in planning practices has been that urban public spaces play an instrumental role in promoting social cohesion by facilitating social interactions across social groups. Public contact, in which people engage in neighborhood-scale public spaces during day-to-day routines, is the origin of familiarity and thereby more cohesive urban society (Curley, 2010; Jacobs, 1961). However, most existing studies have relied on questionnaire surveys to understand neighborhood social interaction and its effects on cohesion (Williams & Hipp, 2019). Yet this method only captures interactions with familiar neighbors rather than the full spectrum of public contact often with strangers, making empirical tests of the theory difficult. Recent studies (Browning et al., 2017) have sought to capture public contact through social network analysis of routine activity spaces derived from activity surveys.

This study extends this emerging literature to examine the effects of neighborhood-level public contact potential on neighborhood social cohesion in a rapidly urbanizing context of Beijing, China. With the economic reform and social transformation, Chinese cities have experienced declined neighborhood social cohesion since the 1980s (Forrest & Yip, 2007). Using anonymized mobile phone geolocated data over the month of June 2017 by China Unicom, we constructed an actor-location network of routine activity locations of permanent residents for each neighborhood in urban Beijing, which allowed us to generate neighborhood-level indicators of public contact potential. We link this data to a questionnaire survey of 1,260 residents in 36 neighborhoods conducted in April–May, 2017. We adopt multi-level regression models to test whether residents are more likely to possess a higher level of neighborhood social cohesion if living in a neighborhood with higher extensity of public contact potential (i.e. a higher share of residents in the neighborhood potentially making public contact), and with higher intensity of public contact potential (i.e. a greater share of residents potentially making contact in multiple public spaces).

This research contributes to both the scholarly understanding of the social cohesion implications of public spaces, as well as the emerging literature on neighborhood social cohesion in Chinese cities. By focusing on everyday-life contact in public space, this research offers practical implications for planning urban public spaces toward a cohesive urban society.

Citations

- Browning, C. R., Calder, C. A., Soller, B., Jackson, A. L., & Dirlam, J. (2017). Ecological Networks and Neighborhood Social Organization. *American Journal of Sociology*, 122(6), 1939–1988.
- Curley, A. M. (2010). Neighborhood Institutions, Facilities, and Public Space: A Missing Link for Hope VI Residents' Development of Social Capital? *Cityscape*, 12(1), 33–64.
- Forrest, R., & Yip, N.-M. (2007). Neighbourhood and Neighbouring in Contemporary Guangzhou. *Journal of Contemporary China*, 16(50), 47–64.
- Jacobs, J. (1961). *The Death and life of great American cities*. Random House.
- Williams, S. A., & Hipp, J. R. (2019). How great and how good?: Third places, neighbor interaction, and cohesion in the neighborhood context. *Social Science Research*, 77(December 2017), 68–78.

Key Words: Neighborhood social cohesion, Public spaces, Public contact, Big data, China

WHO IS “THE COMMUNITY” IN COMMUNITY BENEFITS AGREEMENTS? – POWER, EMPOWERMENT, AND DISEMPOWERMENT IN A SUCCESSFUL CAMPAIGN

Abstract ID: 1942

Individual Paper Submission

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Community benefits agreements (CBAs) are gaining in popularity as a tool for ensuring that transit-oriented and other large-scale development projects yield lasting benefits for residents and small business owners who are vulnerable to displacement. These binding contracts between private sector developers and community groups can result in affordable housing, job opportunities, small business supports, green and open space, sustainable building, and other benefits (e.g., Baxamusa 2008; Saito and Truong 2015). Moreover, they have mobilized broad coalitions around a common anti-displacement agenda (Belongie and Silverman 2009; Jansenn-Jansen and van der Veen 2017; King and Rich 2021).

Debates about whether CBAs are worth the typically arduous effort of negotiation and enforcement have focused on both the scope of the outcomes and the process of building community power. This paper contributes to these debates by examining what “the community” means in a CBA campaign. Which community members benefit most from the outcomes? Who is engaged in which aspects of the process? What are the implications of this realization of community for longer-term movement building?

The six-years of community organizing and negotiations that led to the ratification of a \$20 million agreement in the

context of a 15 acre transit-oriented development in Somerville, Massachusetts, a working-class city of immigrants, offer an opportune case study for exploring these questions. The CBA has been deemed successful. Wins include \$20 million of affordable housing, job training resources, small business supports, green and open spaces, and public art investments as well as commitments to local hiring, labor-friendly construction contracts, and sustainable building designs. Perhaps more significantly, involvement of multiple types of community groups over the course of the CBA campaign affords analysis of dynamics of legitimacy and power and tensions between inclusion and marginalization among stakeholders with diverse backgrounds, experience, and expertise. Moreover, recent immigrants and other low-income residents played significant and recognized roles in the campaign.

The study is grounded in participant observation throughout the campaign and the following two years of implementation. Document analysis, media coverage, public hearing testimonies, and interviews with key actors from the grassroots coalition that launched the CBA campaign, the elected neighborhood council that negotiated the contract, other influential resident and labor groups, and city-appointed advisory committees supplement the observations.

Analysis calls attention to four areas of contestation about the meaning of community in the CBA campaign.

Agenda-setting: That the coalition overcame the City's initial resistance to direct community-led negotiations with the master developer evidences that organized immigrants and their equity driven allies cannot only command a seat at the table; they can also influence the menu of development opportunities.

Representation: The negotiation of contact with the elected neighborhood council as opposed to the grassroots coalition illuminates how legitimate representation of the community is challenged and established.

Compromise: Tensions between the various the coalitions and groups involved in the CBA campaign surface how power imbalances within communities shape issue prioritization.

Voice: Although recent immigrants and other low-income residents of color were among the recognized leaders in many of the community forums, their voices were not always heard with the force of those with more technical expertise and more extensive and consistent time to devote to meetings.

Together, these insights contribute to the emerging discourse on CBAs and they provide useful guidance for community activists and local planners considering whether to pursue CBAs and what organizational capacity is necessary to sustain community engagement, access legal and other expert advice, and provide facilitation and coordination supports for over-extended volunteers.

Citations

- Baxamusa, M. H. (2008). "Empowering communities through deliberation - The model of community benefits agreements." *Journal of Planning Education and Research* 27(3): 261-276.
- Janssen-Jansen, L. B. and M. van der Veen (2017). "Contracting communities: Conceptualizing Community Benefits Agreements to improve citizen involvement in urban development projects." *Environment and Planning A* 49(1): 205-225.
- King, P. N. and M. A. Rich (2021). "Building Together" in Baltimore? Corporate Megadevelopment and Coalitions for Community Power." *Urban Affairs Review*.
- Marantz, N. J. (2015). "What Do Community Benefits Agreements Deliver?" *Journal of the American Planning Association* 81(4): 251-267.
- Rosen, J. and L. Schweitzer (2018). "Benefits-sharing agreements and nonideal theory: The warning signs of agreement co-optation." *Planning Theory* 17(3): 396-417.

Key Words: community benefits agreements, community organizing, community power, displacement, public participation

TOWARDS A FULLER UNDERSTANDING OF GENTRIFICATION: GEOGRAPHY OF GENTRIFICATION IN CHICAGO

Abstract ID: 2068

Individual Paper Submission

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There are growing concerns about gentrification worldwide. In particular, the recent rise of gentrification has often been attributed to the influx of young generations, Millennials and Gen Z-ers, into central urban neighborhoods in

recent decades. Transit oriented development around major public transit systems has also been blamed for triggering gentrification. However, despite the increasing alerts on gentrification, results of recent quantitative studies on gentrification and displacement are mixed at best. Due to the lack of data to trace displacement of low income and minority households in gentrifying neighborhoods, these studies typically attempted, but failed in many cases, to identify significantly higher moving rates in gentrifying neighborhoods than in other comparable neighborhoods (Freeman, 2005; McKinnish et al., 2010; Ding et al., 2016). However, these mobility-focused studies have critical limitations in fully addressing overall impacts of gentrification on low income families in gentrifying neighborhoods. Does gentrification involve extensive displacement? What are the characteristics of places where people being displaced move to? After displacement, do people suffer from lower access to employment opportunities, lower income, and/or lower access to public transit services? What are the typical timing and pace of relocation of both gentrifiers and people who are being displaced?

To address these research questions, we investigate the geography and temporal dimensions of gentrification in the Chicago metropolitan area, using a unique proprietary dataset—InfoUSA U.S. Consumer Database. This dataset, developed for commercial use, records longitudinal geographical location and demographic information of 155 million households nationwide, and we analyze 42 million data points for the Chicago area from 2006 to 2015. As panel data, not repeated cross-sectional samples, InfoUSA has many advantages over other types of data for studying the spatial and temporal patterns of relocations among both gentrifiers and people who are being displaced.

In this study, we perform a series of data analyses. First, we identify two sets of census tracts, either gentrified for 2000-2015, or comparable to the former in the starting year, but not gentrified by the end of the study period. These sets work as treatment and control neighborhoods. In doing so, we employ the 2010 decennial U.S. Census and the American Community Survey 5-year estimates for 2009-2017. Second, we examine socioeconomic and demographic characteristics of existing residents and more importantly, movers into/out of these two sets of census tracts to determine any systematic differences among two resident (or mover) groups. Third, we compare selected attributes of destination census tracts for out-movers from gentrified and gentrifiable-but-not-gentrified census tracts, such as median household income, unemployment rate, and access to public transit. We also perform a multinomial logit analysis to study the determinants of relocation decisions and relocation destinations. Lastly, but most importantly, we investigate existing residents' timing of moving out from two sets of census tracts over time, which will enable us to identify any differences in displacement patterns.

Citations

- Freeman, L. (2005). Displacement or Succession?: Residential Mobility in Gentrifying Neighborhoods. *Urban Affairs Review*, 40(4), 463-491.
- McKinnish, T., Walsh, R., & Kirk White, T. (2010). Who gentrifies low-income neighborhoods? *Journal of Urban Economics*, 67(2), 180-193.
- Ding, L., Hwang, J., & Divringi, E. (2016). Gentrification and residential mobility in Philadelphia. *Regional Science and Urban Economics*, 61, 38-51.

Key Words: gentrification, displacement, neighborhood change

Track 3 – Economic Development

Track 3 Pre-Organized Session Summaries and Abstracts for the Sessions

ALTERNATIVES IN COMMUNITY ECONOMIC DEVELOPMENT: NEW APPROACHES TO STUBBORN PROBLEMS

Pre-Organized Session 1 - Summary

Session Includes 1073, 1074, 1075

DOUSSARD, Marc [University of Illinois at Urbana-Champaign] mdouss1@illinois.edu, organizer

Urban economies face multiple challenges to which the conventional machinery of economic development – industrial recruitment, real estate development, competition for skilled professionals – cannot convincingly respond. As elected officials, community organizations and citizens respond to challenges such as automation, mass gentrification and the systemic inequalities of racial capitalism, they seek new approaches to economic development. Accordingly, this panel presents completed original research on a range of alternative approaches to economic development, and particularly to community economic development. To date, such alternative approaches have been studied at the level of individual cases. The papers in this panel take a more systematic approach, grounding alternative approaches in classic frameworks focused on growth, equity and economic diversification. They answer the following questions: What long-standing problems do alternative approaches hope to solve? How do they connect economic development to other planning specializations? What shapes and limits the diffusion of these new approaches to economic development?

Objectives:

- Learn about new approaches to core problems in economic development
- Understand the spread and increasing popularity of alternative approaches

THE BASIC INCOME: ALTERNATIVE ECONOMIC POLICY FOR SITES OF ECONOMIC AND INSTITUTIONAL BREAKDOWN

Abstract ID: 1073

Abstract within Pre-Organized Session 1

DOUSSARD, Marc [University of Illinois at Urbana-Champaign] mdouss1@illinois.edu, presenting author

Basic income trial programs continue to expand across U.S. cities (Mayors for a Guaranteed Income 2022). They are growing even more rapidly in Europe, where regional government bodies in the British Isles are in the process of authorizing multi-year, mass basic income pilots that provide years of support to youth, artists and other sub-populations (Morris 2022). The emergent leap from randomized control trials to state policy increases the basic income's relevance to economic development and community development by providing information on a wide range of potential impacts, and by making possible a shift from randomized control trials to fully fledged public policy (Young 2018). This shift raises simple but important questions about when and where the basic income will expand.

I answer those questions with evidence on the diffusion of basic income activism and basic income policy across European states and sub-national regions. Drawing on primary documents from basic income policy proposals and advocacy organizations, and more than 80 original interviews with activists, third-sector organizations, elected officials and unions, I show that basic income policies gain support when they successfully demonstrate means of financing regular cash payments and show limited risk of recipients exiting the labor market. My field data demonstrate that three distinct pathways to basic income policy address both these challenges: 1) Tying the basic income to national autonomy movements with devolved fiscal control, 2) Rolling out basic income pilots for sub-populations (such as youth and artists) associated with high unemployment rates and/or high propensity to work, and 3) rolling out programs in high-unemployment regions where the failure of alternatives reduces hesitancy to rewrite fiscal and welfare policy. I detail the point by mapping the high incidence of basic income advocacy organizations and trial programs in high-poverty regions, national sub-regions with fiscal independence, and places where new political coalitions use their power to focus on sub-populations.

By contrast, basic income policy pilots remain politically marginal in countries retaining high trust in the welfare state (France, Germany, Scandinavia) and where regional autonomy movements are subdued or shut out from fiscal self-rule. In addition to identifying potential pathways to the basic income's growth in the U.S., understanding the policy's

appeal in these terms points to the importance of non-material effects of economic development policies and programs. This indicates the need to value mental health, reduced stress, civic participation and other life-quality measures currently displaced from the agenda by the proxy study of GDP growth, unemployment rates and technology.

Citations

- Mayors for a Guaranteed Income. 2022. "About Mayors for A Guaranteed Income." <https://www.mayorsforagi.org/about>.
- Morris, Steven. 2022. "Basic Income Pilot Scheme for Care Leavers to Be Trialled in Wales." *The Guardian*, February 15, 2022. <https://www.theguardian.com/society/2022/feb/15/basic-income-pilot-scheme-for-care-leavers-to-be-trialled-in-wales>.
- Young, Charlie. 2018. "Realising Basic Income Experiments in the UK: A Typology and Toolkit of Basic Income Design and Delivery." Royal Society for the Encouragement of Arts, Manufactures and Commerce: London, UK.

Key Words: Universal Basic Income, Economic development, Public policy, Policy mobilities, Policy entrepreneurship

COMMUNITY LAND TRUSTS: TECHNOCRATIC HOUSING AFFORDABILITY TOOL, OR TRANSFORMATIVE COMMUNITY ECONOMIC DEVELOPMENT MODEL?

Abstract ID: 1074

Abstract within Pre-Organized Session 1

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In the field of US community economic development, there has been a revival of interest in alternative ownership models (Spicer, 2020; Spicer and Casper-Futterman, 2020). These models are being applied not only to business enterprises, which are often the traditional focus of economic development, but to land and housing, as well, through models like the Community Land Trust (CLT).

Echoing practitioners' concerns, recent academic CLT research has focused on whether they have remained true to their roots in Civil Rights and housing justice movements, drawing a distinction between "transformative"/radical and "technocratic"/reformist CLTs (DeFilippis, Stromberg, and Williams 2018; DeFilippis, et al, 2019). The former purportedly address broader political-economic goals (e.g. de commodification of land/housing), while the latter focus on affordable housing provision. Despite transformative CLTs' purported focus on broader goals, there has been limited empirical measurement of how their distinct institutional logic might differentially manifest with respect to specific planning and implementation practices, or how such practices might reach beyond the domain of housing/land to accomplish greater community economic development goals. To that end, our study asks two questions: does the transformative/technocratic distinction translate into observable differences in terms of planning practices deployed by CLTs? And given transformative CLTs' broader focus, what does their model have to offer from a community economic development perspective?

To answer these questions, we conducted a qualitative matched-pair study of 12 North American CLTs in six regions, using data generated from interviews with CLTs which were externally identified as "technocratic" and "transformative" in each region, and supplemented by document analysis of these CLTs' missions, activities, affiliations, and funding. We find transformative CLTs more consistently deploy six specific practices than do technocratic peers, including several which might help advance community economic development goals. These practices include: participatory planning; developing relationships with citywide/regional coalitions; connecting with other solidarity economy organizations; community finance and acquisition mechanisms; policy and advocacy campaigns; and community base-building and tenant organizing. But we also find the transformative/technocratic divide is not clear-cut: technocratic CLTs also often engage, in a time-varying manner, with a select number of these practices, and often state plans to implement more. We also find that CLTs in both "camps" often collaborate with one another, indicating that the divide may not run as deep as existing academic research might suggest. Affirming the findings of existing research in economic sociology on alternative enterprises (Schneiberg, King, and Smith 2008), we suggest that the observed differences between "technocratic" and "transformative" CLTs represent the simultaneous existence of two competing institutional or field logics at work among CLTs, traceable to the organizations' varying relationship to social movements.

Beyond advancing academic planning's understanding of variations in CLTs' practices and their relationship to broader community economic development goals, our study has implications for practitioners. Planners, policymakers, and community organizers should consider how the varying implementation approaches of different types of CLTs align with their stated goals. Community economic developers, like others who seek to deploy CLTs to achieve broader political and socio-economic goals, might wish to explicitly incorporate the six transformative

planning practices we identified into their CLTs' organizational and program design, either at inception or a later date. For those with more limited goals centered on affordable housing, not all of these practices may be seen as necessary or worthwhile. In particular, community economic development-related CLT practices (such as connecting with other solidarity economy organizations, community finance initiatives, and community base-building and tenant organizing) may be less germane to those practitioners who are primarily focused on affordable housing provision.

Citations

- Spicer, J., Casper-Futterman, E.. (2020) Conceptualizing U.S. Community Economic Development: Evidence from New York City. *Journal of Planning Education and Research*. Online First, 1-20.
- Spicer, J. (2020). Worker and Community Ownership as an Economic Development Strategy? Innovative Rebirth or Tired Retread of a Failed Idea? *Economic Development Quarterly* 34(4): 325 – 342.
- DeFilippis, J., Stromberg, B., and Williams, O. R. (2018). "W(h)ither the community in community land trusts?" *Journal of Urban Affairs* 40(6): 755-769.
- DeFilippis, J., Williams, O. R., Pierce, J., Martin, D. G., Kruger, R., & Esfahani, A. H. (2019). "On the Transformative Potential of Community Land Trusts in the United States." *Antipode*, 51(3)
- Schneiberg, M., King M., and Smith, T. (2008). "Social Movements and Organizational Form: Cooperative Alternatives to Corporations in the American Insurance, Dairy, and Grain Industries." *American Sociological Review* 73: 635-667

Key Words: community economic development, community land trusts, solidarity economy, alternative enterprises, affordable housing

COMMUNITY WEALTH-BUILDING: RADICALLY REIMAGINING COMMUNITY ECONOMIC DEVELOPMENT MEANS AND ENDS

Abstract ID: 1075

Abstract within Pre-Organized Session 1

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The cooperative movement is ascendent, though most people may be unaware of it. The 2008 foreclosure and financial crisis unmasked the chimera of economic security and upward mobility for the average worker in the United States. It also fomented the Occupy Movement and popular resistance to extreme inequalities, capitalist exploitation, and the insidious conviction that "there is no alternative." Post-Great Recession economic expansion (2009 – 2019) is lauded for historic economic growth. As such many middle-class White households were able to recoup wealth eroded by the financial crisis. Rather than experiencing alleged benefits of historic economic growth and full employment, the average Black household and low wage worker experiences a multiplicity of crises long in the making, including racial and economic inequalities, wage stagnation, incessant erosion of labor power, insurmountable debt, prolonged if not permanent detachment from the formal labor market, housing insecurity, derisory healthcare, and environmental degradation. None of which can be eradicated by the system of corporate capitalism that created them.

It is within this context that community wealth-building (CWB) and heterodox models of cooperative economics are emerging in Black and indigenous communities (Bledsoe, McCreary & Wright 2019; Gordon-Nembhard 2014; Hudson 2019; Sutton 2015; Sutton and Gordon-Nembhard 2022). This paper draws on WEB Du Bois' theory of cooperative economics to expound CWB which the Democracy Collaborative characterizes as place- and people-based initiatives that intentionally and explicitly promote local, democratic, and shared ownership and control of community assets. Although elements of CWB have existed in the U.S. for decades, little is known about how policies, legal frameworks, tools, financing mechanisms, educational resources, and community support, constitute enabling environments for community wealth-building enterprises. The purpose of this paper is threefold: First, to document CWB ecosystems, particularly initiatives emerging in majority Black neighborhoods in Chicago and New York City; second, to analyze the infrastructures, ideologies, resources, and practices of CWB models; third, to compare CWB to conventional community economic development initiatives.

Citations

- Gordon Nembhard, J. (2014). *Collective courage: A history of African American thought and practice*. University Park, PA: Pennsylvania State University Press.
- Sutton, Stacey (2019) *Cooperative Cities: Municipal Support for Worker Cooperatives in the United States*, *Journal of Urban Affairs*, 14: 8, 1081-1102
- Bledsoe, Adam, Tyler McCreary, and Willie Wright. "Theorizing diverse economies in the context of racial capitalism." *Geoforum* (2019).
- Du Bois, W.E.B. (1907). *Economic Co-operation Among Negro Americans*. Atlanta: Atlanta University Press.

- Sutton, Stacey and Gordon-Nembhard, Jessica (2022) The Promise of African American Worker Cooperatives, National Council of Black Studies Annual Report

Key Words: Community wealth-building, Economic democracy

COVID, ARPA AND THE POTENTIAL FOR PROGRESSIVE CITIES

Pre-Organized Session 3 - Summary

Session Includes 1022, 1023, 1024, 1025, 1042

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The COVID-19 pandemic created a shift in US urban policy. Public health, racial inequality and economic dislocation all generated pressures for new national policies, such as Coronavirus Relief (CARES), America Rescue Plan (ARPA) and the Infrastructure bill (IIJA). Expanded public health concerns, economic supports and aid to state and local government have created an opportunity for more progressive action at the city level. But which cities will choose to be more progressive and how do we understand these shifts? This panel will draw from urban justice coalitions and policy entrepreneurship theories to explore how cities have chosen to invest their ARPA funds. The role of progressive politics, citizen protest, planning, local capacity and policy competition will be explored across policy arenas relating to infrastructure, public health, violence prevention and economic development.

Objectives:

- This session will explore new economic development approaches promoting equity
- Attention will be given to the role of community engagement and planning as relates to ARPA funds
- Differentiating communities which address equity in their ARPA plans

URBAN JUSTICE COALITIONS, POLICY ENTREPRENEURSHIP AND PROGRESSIVE POLITICS IN FEDERAL POLICY IMPLEMENTATION

Abstract ID: 1022

Abstract within Pre-Organized Session 3

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The Biden Administration's embrace of counter-austerity policies in economic recovery from Covid-19, such as the American Rescue Plan Act (ARPA), raises hopes of a new era of Federally led progressive policy. A key question is how much of this potential remains despite proposed investments in social infrastructure stalling. While Federal political realities currently foreclose additional action, provisions for local discretion in policy implementation in existing legislation like ARPA open the door for urban justice coalitions.

At the Federal level, ARPA proceeded as a classic case of policy entrepreneurship (Kingdon 1984). In Multiple Streams Analysis (MSA) of policy studies, agenda windows open when new possibilities emerge in the so-called "politics stream" for linking known problems to relevant policy proposals. At the Federal level this often occurs through exogenous events such as disasters. ARPA's support for local discretion opens the possibility for urban-level policy entrepreneurship. Although scholars have long studied the dynamics of local implementation of Federal policy (Van Horn 1979), the role of local politics and organizing in shaping those dynamics has been underappreciated. In contrast to the Federal level, urban policy entrepreneurship toward progressive policy is driven by the interplay between local organizers within Economic and Racial Justice (ERJ) coalitions, who build coalitions and pressure for policy change in the urban context, and "inside game" actors who work City Hall to craft policy proposals (Doussard and Schrock 2022). Although such inside-outside dynamics are not unique to the local scale, the urban scale offers activists and organizers a fertile landscape to build power toward policy change.

Our paper provides a conceptual framework for analyzing local policy change outcomes from ARPA or other federal legislative frameworks that involve localized policy implementation, centering on two types of activities at the local scale. One, organizing efforts on the part of ERJ coalitions to shape problem definitions; and two, the networking efforts on the part of urban policy entrepreneurs to develop policy proposals, often in coordination with national-scale policy advocacy organizations or peers in other cities.

We test the framework through the exploratory case of guaranteed basic income (GBI) pilot programs, which represent a limited variation on "universal basic income" (UBI) initiatives that propose unconditional cash payments to ensure a minimum subsistence income for households (Mayors for a Guaranteed Income 2022). Several U.S. cities launched GBI pilots using ARPA funding; although many of them (e.g., Seattle, Madison WI) are classic "progressive

cities,” others like Denver and Chicago are not. Our framework suggests that local adoption of progressive policies would not simply align to a priori local political orientation, but would instead be more variegated and contingent. Through semi-structured interviews with activists, urban policy entrepreneurs and local agency officials in three ARPA-funded GBI pilot cities (Seattle, Chicago, Denver), we address two questions. One, how important was federal (ARPA) funding in catalyzing these pilots? Two, what role did ERJ coalitions and urban policy entrepreneurship play in elevating AGI in those cities? We find that ARPA funding was catalytic because of its flexibility, multi-year duration and potential to leverage philanthropic support. And second, justice coalitions were most impactful in “mixed-progressive” cities where competing interests were advocating more conventional approaches to utilizing ARPA funding. Our findings affirm the importance of local politics in mediating the impact of Federal policy on progressive change. For planners, the findings underscore the local economic development potential of household income support and the importance of engaging justice coalitions in policy formulation and implementation.

Citations

- Doussard, Marc, and Greg Schrock. 2022. *Justice at Work: The Rise of Economic and Racial Justice Coalitions in Cities*. Minneapolis, MN: University of Minnesota Press.
- Kingdon, John. 1984. *Agendas, Alternatives and Public Policies*. New York: HarperCollins Publishers.
- Mayors for a Guaranteed Income. 2022. “About Mayors for A Guaranteed Income.” Mayors for a Guaranteed Income. <https://www.mayorsforagi.org/about>.
- Van Horn, Carl E. 1979. *Policy Implementation in the Federal System: National Goals and Local Implementors*. Lexington, MA: Lexington Books.

Key Words: economic development, urban politics, progressive city, economic justice, policy implementation

CHALLENGING AUSTERITY UNDER THE COVID-19 STATE

Abstract ID: 1023

Abstract within Pre-Organized Session 3

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The COVID-19 pandemic created an opening for more progressive US urban policy. While neoliberalism has dominated policy approaches for the past 40 years, recent federal policy changes offer the promise to reshape both citizen expectations of the state and the nature of federal-state-local relations. The COVID-19 pandemic represents a short term shift in US social policy. Under the CARES Act and the American Rescue Plan, the federal government prioritized households by raising the floor for child support and unemployment benefits, and restoring fiscal federalism by providing increased funds to state and local governments. Scholars have called attention to the devastating impacts of austerity since the Great Recession (Lobao et al., 2021), but understanding the role of the state in the COVID and post COVID-19 era requires a revised theoretical frame. The COVID crisis has required a state response which holds the potential to open up Keynesian style approaches (Warner and Zhang, 2021). This paper explores new frameworks for understanding progressive action.

We do this through analysis of state action at three scales: federal, state and local. At the federal level we contrast the COVID response during Trump’s final year 2020 (CARES Act) with programs passed in Biden’s first year in office 2021 (American Rescue Plan, ARPA). While the CARES act increased unemployment benefits and provided direct payments to families, it reserved much of its funding for private business. The ARPA, represents both an extension and a shift as it instituted a new child care tax credit which holds the potential to expand social citizenship. Decentralization and austerity have been used to reduce citizen expectations of the state, but the need for a strong state response to COVID, has opened new possibilities for state action – at the federal, state and local level.

ARPA provides significant funding to state and local governments (\$350 billion). This gives state and local government more flexibility to respond to a range of issues from revenue shortfalls, to support for social equity, to investment in infrastructure. Research during the Great Recession has shown wider spatial diversity in state and local government action than austerity theory would expect (Warner et al. 2021), but it has also pointed to the challenges of a broken fiscal federalism where the nation shifts expenditure burdens to lower levels of government (Warner and Xu, 2022). The ARPA changes that – at least for now.

We held three focus groups with local government officials and then designed and implemented a survey of local governments across the US to assess how they are planning to spend these new funds. Our nationwide survey finds local governments with more citizen participation and Black Lives Matter protests prioritize social equity investments, while those with more Trump voters prioritize physical infrastructure. Equity investments are also prioritized among local governments that have ARPA specific plans and engage in regional collaboration.

COVID-19 led to new policy approaches that expand government investment. These have the potential to help reshape citizen expectations and repair federal-state-local relations. The process is contested, and spatially diverse, but we find some cities have shifted from market oriented welfare conventions (Chiapello and Knoll 2020) to something more social. By looking across three levels of the state (Federal, State and Local), we assess policy design and offer new insights for conceptualizing progressive governmental action in the post-COVID era.

Citations

- Chiapello, E. and Knoll, L., 2020, The welfare conventions approach: A comparative perspective on social impact bonds. *Journal of Comparative Policy Analysis: Research and Practice*, 22(2), pp. 100–115.
- Lobao, L., Tsvetkova, A., Hooks, G., & Partridge, M. (2021). Seeing the Local State: Poverty and Income Inequality across the United States during the Great Recession. *Sociology of Development*, 1-32.
- Warner, Mildred E. and Xue Zhang. 2021. "Social Safety Nets and COVID-19 Stay Home Orders across US States: A Comparative Policy Analysis," *Journal of Comparative Policy Analysis*, 23(2): 176-190.
- Warner, Mildred E., Austin Aldag and Yunji Kim 2021. "Pragmatic Municipalism: US Local Government Responses to Fiscal Stress," *Public Administration Review*, 81(3): 389-398.
- Warner, Mildred E, Yuanshuo Xu 2021. "Productivity Divergence: State Policy, Corporate Capture and Labor Power," *Cambridge Journal of Regions, Economy and Society* for special issue on "Rethinking the Political Economy of Place." 14(1): 51-68.

Key Words: COVID-19, economic development, community engagement, infrastructure, equity

HOW ARE CITIES USING ARPA FISCAL RECOVERY FUNDS TO REDUCE VIOLENCE?

Abstract ID: 1024

Abstract within Pre-Organized Session 3

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The American Rescue Plan Act included the creation of a program, the Coronavirus State and Local Fiscal Recovery Funds (CSLFRF), that allocates an unprecedented \$350 billion in flexible aid to U.S. states, local governments, tribal governments, and territories. The CSLFRF's creation marks a notable change in public policy as it is a departure from the neoliberal approaches of the past forty years (Lopez-Santana and Rocco 2021). Not only is the CSLFRF larger than prior rounds of emergency aid, but it was also designed to address a far broader series of crises and provide public officials greater autonomy. In this paper we explore the extent to which the CSLFRF program is facilitating a move away from traditional forms of policing that focus on criminalization and incarceration to community violence interventions that aim at tackling root causes like poverty and racism.

The CSLFRF aid can be used for a broad range of purposes tied to the direct and indirect health and economic effects of COVID-19. The Biden administration intentionally created administrative guidelines and rules that encourage governments to deploy funds in targeted ways that benefit communities most affected by the pandemic and address racial equity (Department of the Treasury 2021). In addition to COVID's disproportionate effects, the issue of racial equity came to the political forefront because of nationwide protests demanding racial justice, particularly around policing, that were sparked by recent police killings of Black Americans (White House 2021). In the summer of 2021, the Biden administration tied the CSLFRF program to violence prevention by labeling gun violence a public health issue that had worsened during the pandemic. In addition, President Biden explicitly encouraged and empowered cities to use CSLFRF aid to address that issue and invest in community violence interventions. Our paper offers a systematic look at cities' frameworks for using CSLFRF dollars to advance the goals of racial equity, gun-violence prevention, and criminal justice reform.

While local governments have wide latitude in how they deploy CSLFRF aid, the wide-ranging effects of the COVID crisis and lingering impacts of the Great Recession austerity environment means there are competing needs and interests (Warner et al. 2021). Our project is a mixed-methods study examining how cities plan to use their fiscal recovery funds as it relates to violence prevention and mitigation. In particular we examine whether cities plan to use funds on violence prevention initiatives in novel ways that mark a departure from past spending and traditional policing. Local governments serving a population of at least 250,000 were required to submit plans to the Treasury Department, and we analyze these plans to identify how many of these 338 governments included issues of crime and violence in their reports. In addition, we track detailed spending plans for 26 case study cities. Our study sites include 13 cities that are part of the Community Violence Intervention Collaborative (CVIC), which aims at scaling "evidence-based community-led strategies to reduce gun violence and enhance public safety" (White House 2021). The remaining 13 cities are ones that are similar in population size and rates of violent crime to the 13 CVIC cities. We track how our case-study cities plan to use their fiscal recovery funds and compare it to pre-COVID spending by analyzing budgets, annual comprehensive financial reports, and additional financial reports. Last, we examine the 26 cities' spending plans to identify policy priorities and the process involved in allocating CSLFRF aid. Combined, this

work allows us to identify barriers to and facilitators of cities' use of federal dollars to advance the goals of racial equity, gun-violence prevention, and criminal justice reform.

Citations

- Department of the Treasury. 2021. "Coronavirus State and Local Fiscal Recovery Funds: Interim Final Rule." Federal Register 86, no. 93 (May 17, 2021): 26786–26824.
- López-Santana, Mariely, and Philip Rocco. "Fiscal Federalism and Economic Crises in the United States: Lessons from the COVID-19 Pandemic and Great Recession." *Publius: The Journal of Federalism* 51, no. 3 (2021): 365–395.
- Warner, Mildred E., Austin M. Aldag, and Yunji Kim. 2021. "Pragmatic municipalism: US local government responses to fiscal stress." *Public Administration Review* 81, no. 3: 389–398.
- White House. 2021. Fact Sheet: Biden-Harris Administration Announces Comprehensive Strategy to Prevent and Respond to Gun Crime and Ensure Public Safety. June 23. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/23/fact-sheet-biden-harris-administration-announces-comprehensive-strategy-to-prevent-and-respond-to-gun-crime-and-ensure-public-safety/>

Key Words: Equity, Austerity, Violence Prevention, American Rescue Plan Act, Community Development

DETERMINANTS OF EQUITABLE DEVELOPMENT: PURSUITS OF A PROGRESSIVE AGENDA

Abstract ID: 1025

Abstract within Pre-Organized Session 3

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Local governments are grappling with wide ranging issues including balancing economic growth, stabilizing fiscal revenues, redressing inequalities, repairing crumbling infrastructure, and promoting environmental sustainability. These tasks have become only more complicated in the wake of the COVID-19 pandemic. [1] As a result of this hardship, the federal government has passed an unprecedented set of bills worth trillions of dollars (the Coronavirus, Aid, Relief, and Economic Security Act (CARES), American Rescue Plan Act of 2021 (ARPA), and the Infrastructure, Investment and Jobs Act (IIJA) to, in part, support state and local governments.

Inherent in these efforts is the desire to ensure local governments have necessary resources to stave off budget cuts, staff layoffs, and even receivership, while simultaneously prioritizing economic recovery and growth alongside racial and economic equality. Local factors impact their ability to strike a balance between economic growth, social equity, and sustainability. [2][3][4][5] Further, economic crises, like the Great Recession, alter local policy prioritization [6][7], available resource streams, and fiscal responses.[8] Thus, federal intervention provides necessary resources. Yet, the way in which these external resources translate into economic growth and equity, and how city-level factors determine equitable access to these funds at a neighborhood scale, has received scant attention. While the full implications of CARES, ARPA, and IIJA may take years to fully realize, we can better understand the implications of federal funds on local priorities at the neighborhood-level.

We build a novel database tracking CDBG, HOMES, and NMTC expenditures from 1999 to 2014 aggregated to the neighborhood level. Joined with several waves of local economic development surveys we analyze how municipal-level characteristics for more than 2,000 cities impacts the spatial distribution and policy selection toward growth and equity-oriented goals for more than 67,000 neighborhoods within those cities.

We ask two fundamental questions. First, what municipal-level factors (e.g. participants in the policy process, competitive pressures, form of government, etc.) explain varying neighborhood-level distributional decisions for these programs? Empirically, we examine the moderating influence of neighborhood-level social need on the municipal-level determinants of distributional allocations of these federal resources. Second, we ask how these distributional and policy choices impact economic and equity-oriented outcomes? Such analyses are important when considering the impact that COVID-19 relief may have on the future trajectory of economic growth and equitable development going forward.

Citations

- Eric Stokan, Aaron Deslatte, and Megan E Hatch. Exploring the Trade-Offs local governments make in the pursuit of economic growth and equity. *Urban Affairs Review* Thousand Oaks Calif, page 1078087420926648, June 2020.

- David R Elkins. Testing competing explanations for the adoption of type II policies. *Urban Affairs Quarterly*, 30(6):809–839, July 1995.
- Lingwen Zheng and Mildred Warner. Business incentive use among U.S. local governments: A story of accountability and policy learning. *Economic Development Quarterly*, 24(4):325–336, November 2010.
- Susan M Opp, Jeffery L Osgood, and Cynthia R Rugeley. City limits in a postrecessionary world: Explaining the pursuit of developmental policies after the great recession. *State and Local Government Review*, 46(4):236–248, December 2014.
- Yuanshuo Xu and Mildred E Warner. Crowding out development: Fiscal federalism after the great recession. *Environmental Planning A*, 54(2):311–329, March 2022.

Key Words: Social Equity, Economic Growth, Federal Investments, Spatial Equity, Local Economic Development

ARPA AND BROADBAND ACCESS: LOCAL ACTION AND REGULATORY CHALLENGES

Abstract ID: 1042

Abstract within Pre-Organized Session 3

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The global pandemic brought meaningful changes to the landscape of broadband policy in the US. Increasing access had been a priority for the federal government before the beginning of the global pandemic, but with the American Rescue Plan Act 2021, the federal government acknowledged and pledged their support for local governments in their efforts to address the digital divide. The Capital Projects Fund (\$10 billion) will support not only broadband infrastructure projects, but also device acquisition and the habilitation of facilities for education and health. Pandemic relief aid from the State and Local Fiscal Recovery Funds (\$350 billion), which is already available, can be channeled to states and local governments, directly or through state programs, and used for broadband. This is a defining moment in the landscape of broadband policy, as local governments become empowered to take a more active role in making broadband access universal – and states play a key role in how local governments will access federal and state funds.

Scholarship has expanded beyond the traditional conception of the digital divide, which largely focuses on the lack of service availability, affordability, and adoption. It can also signify lack of connectivity and access to devices; lack of digital literacy, and inequalities in the realization of benefits from Internet usage due to identity and socioeconomic factors (van Dijk and Hackner, 2003; Ali, 2021). Additionally, the broadband gap continues to expand as older technologies and speed requirements become obsolete. By granting local governments more flexibility in how they can spend broadband funds, the federal government can contribute to ongoing local efforts to address the various levels of the digital divide. What are the progressive steps cities are taking towards equity in broadband access? How will the current regulatory landscape enable or challenge how local governments channel federal support?

Some states have limited the municipal role in expanding broadband access (Bravo et al 2020), but states have also helped address equity in enacting policy for awarding federal and state funds. States have an opportunity to cooperate with the progressive efforts of local and regional coalitions – cities and counties partnering with private ISPs, cooperatives and industry experts to realize the benefits of broadband in education, telehealth, public safety and economic growth. We will learn about the variety of ways in which these partnerships seek to make broadband access more inclusive - from open access, middle-mile projects that can connect anchor institutions and facilitate last-mile deployment and the entry of new providers, to the buildout of hotspots and creation of training and digital navigator programs to serve students and senior citizens. At the same time, states can also ensure all communities, regardless of their size, wealth or degree of rurality, have an opportunity to access grant funds and improve their connectivity (Read, 2021).

Using data from the Pew Charitable Trusts, NLC and NACo on state broadband grants, policy and ARPA-funded projects, in combination with American Community Survey data, this paper will analyze the common factors between locations who were awarded federal and state funding. How is regulation determining how broadband grant funds are spent? Can current policy be improved to increase access to grant funds for less wealthy communities? How can state requirements increase equitable access to broadband and stimulate competition? How are cities using ARPA funds to continue their efforts towards universal broadband access and skill-building? This analysis will highlight how cities and counties are working towards both universality and equity in broadband access, and how they navigate the challenges and opportunities of ARPA and state policy.

Citations

- Ali, C. (2021) *Farm-Fresh Broadband: The Politics of Rural Connectivity*. Cambridge, MA: The MIT Press.
- Bravo, N, Warner, ME and Aldag A. (2020). *Grabbing Market Share, Taming Rogue Cities and Crippling Counties: Views from the Field on State Preemption of Local Authority*, Dept. of City and Regional Planning, Cornell University, Ithaca, NY. <http://cms.mildredwarner.org/p/298>

- Read, A. (2021, December 6) “How States Are Using Pandemic Relief Funds to Boost Broadband Access”, The Pew Charitable Trusts. <https://www.pewtrusts.org/en/research-and-analysis/articles/2021/12/06/how-states-are-using-pandemic-relief-funds-to-boost-broadband-access>
- van Dijk, J. and Hackner, K. (2003) The digital divide as a complex and dynamic phenomenon. The Information Society, 19:4, 315-326.

Key Words: broadband policy, intergovernmental relations, universal access

INFRASTRUCTURE FOR BUSINESS DEVELOPMENT AND WEALTH GENERATION IN COMMUNITIES OF COLOR

Pre-Organized Session 15 - Summary
Session Includes 1082, 1083, 1084

WOLF-POWERS, Anna Laura [Hunter College, CUNY] aw2416@hunter.edu, organizer

Enterprises owned and operated by entrepreneurs of color can be sources of intergenerational wealth, jobs, training, youth mentorship, and even philanthropy. But economic development planners' efforts to cultivate and support BIPOC-led businesses – especially at the municipal level -- have been limited and are only recently receiving scholarly attention in the planning field. This session highlights place-based research into the conditions, environments, and policies that inhibit and encourage the success of entrepreneurs of color, exploring the types of civic and social infrastructure that help these businesses thrive and pointing to historical and ongoing barriers presented by racism-freighted planning paradigms and policy frameworks. Several of the authors on this panel are conducting community-engaged research funded by the Ewing Marion Kauffman Foundation or the Sloan Foundation and will use the session to present preliminary results.

Objectives:

- surface new knowledge about entrepreneurship in communities of color
- promote understanding of civic and social infrastructure that help BIPOC-owned businesses thrive

STRENGTHENING TIES BETWEEN HEALTHCARE ANCHORS AND RACIALLY DIVERSE SUPPLIER NETWORKS: PRELIMINARY RESULTS OF A PARTICIPATORY ACTION RESEARCH STUDY

Abstract ID: 1082

Abstract within Pre-Organized Session 15

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This paper reports findings from a study involving Hunter College researchers and the Brooklyn Health Enterprise Hub. The Hub is dedicated to building a health-focused enterprise system that sets the stage for local residents to participate more fully in the economy and healthcare industry. The research aims to further understanding of ecosystems for black businesses in East and Central Brooklyn, NY. The multi-step, multi-faceted study approach relies on participatory action research (PAR) that builds knowledge about the environment for existing small businesses in Bed-Stuy, Brownsville and East New York, with specific focus on food/farming; housing construction; energy production; and health and wellness. Rooted in a contextual discussion of the theories underlying supplier diversity programs and policies created over the past five decades to incorporate black-owned businesses into local economies, the paper analyzes preliminary findings from the PAR study conducted in the summer of 2022 in the target neighborhoods. The authors explore the implications of the study findings for on-the-ground efforts to enhance local black businesses in East and Central Brooklyn and consider how they may become worker cooperatives.

The research is made possible through a three-year community engagement grant from the Ewing M. Kauffman Foundation. The funding supports the completion of the research about the HUB's goal to not only create a cadre of minority businesses that become stable and profitable but also to ensure that the HUB's anchor institutions are able to be sensitive and responsive to the challenges that minority businesses in their community confront.

Citations

- Association for Enterprise Opportunity. (2017). The tapestry of black business ownership in America: Untapped opportunities for success. https://aeoworks.org/wp-content/uploads/2019/03/AEO_Black_Owned_Business_Report_02_16_17_FOR_WEB-1.pdf
- Bates, T. (2001). Minority business access to mainstream markets. Journal of Urban Affairs, 23(1), 41. <https://doi.org/10.1111/0735-2166.00074>

- Bates, T. (2015). Contested terrain: The role of preferential policies in opening government and corporate procurement markets to black-owned businesses. *Du Bois Review*, 12(1), 137–159. <http://dx.doi.org/10.1017/S1742058X14000289>
- Blount, I. Y. (2021). How do large purchasing organizations treat their diverse suppliers? Minority business enterprise CEOs' perception of corporate commitment to supplier diversity. *Business & Society*, 60(7), 1708–1737. <https://doi.org/10.1177/0007650320936974>
- Fairlie, R. W., Robb, A., & Robinson, D. T. (2020). Black and white: Access to capital among minority-owned startups (Working Paper 28154). National Bureau of Economic Research. <http://www.nber.org/papers/w28154>

Key Words: community economic development, black-owned businesses, black entrepreneurship

LEARNING FROM ASSET WALKS: INSIGHTS INTO EVERYDAY ENTREPRENEURSHIP

Abstract ID: 1083

Abstract within Pre-Organized Session 15

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This paper presents evidence from our community-engaged research on the obstacles and opportunities for local business development in Kansas City's diverse urban neighborhoods. Despite progress toward a less segregated metropolitan area, the legacy of racial segregation continues to impact Kansas City's neighborhoods and businesses. Minority businesses in urban neighborhoods are often under-capitalized and they benefit from efforts to expand markets beyond the minority community originally served (Bates 2006). Evidence suggests that there is a reserve of entrepreneurial capacity in these neighborhoods as well as variety of needs currently going unmet. Our approach to this issue applies an asset-based community development lens (Kretzmann and McKnight 1996) leading to what we are calling everyday entrepreneurship (Welter, et. al. 2017). Everyday entrepreneurship includes traditional firms with full legal status, but also includes other activities that are entrepreneurial in scope but have less formal status as a business.

Data and preliminary findings are drawn from a series of Asset Walks – a methodology developed by the UMKC Center for Neighborhoods and our neighborhood partners. An Asset Walk is a mobile conversation where researchers, residents, leaders, and advocates visit different locations in a specific geography on foot together in a group to learn about the strengths and community capitals. Taking a walk together, observing the characteristics of a particular place, and listening to the voices of locals leads to co-production of local knowledge about particular places (Pierce and Lawhon 2016). Asset Walks are only one part of a trust-building process between researchers, planners, and communities. Researchers may seek to return to the neighborhood multiple times to get a better sense of how entrepreneurship happens at different times of day and different ways across the seasons or days of the week. A key aspect of an asset walk is that researchers meet people where they are – rather than asking people to recall neighborhood details from memory at a public forum.

We find that being present together in a place as a conversation or interview is happening adds the environment as an interactive element in the conversation. Asset-based thinking requires moving beyond stereotypes of people and places. These stereotypes can be broken down by the experiential process of engaging in an indeterminate conversation. Trust gets built through listening to stories that might reveal a specific opportunity contingent to the particulars of place. Planning policies to support everyday entrepreneurship developed through this process then reveal themselves to be multifaceted and not lot limited to a particular community economic development approach (Spicer and Casper-Futterman 2020).

Citations

- Bates, Timothy. (2006) The Urban Development Potential of Black-Owned Businesses, *Journal of the American Planning Association*, 72:2, 227-237, DOI:10.1080/01944360608976741.
- Kretzmann, John and McKnight, John P. Asset Based Community Development. *National Civic Review*. 85 (4), 23-29.
- Pierce, J., & Lawhon, M. (2015). Walking as method: Toward methodological forthrightness and comparability in urban geographical research. *The Professional Geographer*, 67(4), 655-662.
- Spicer, J. S., & Casper-Futterman, E. (2020). Conceptualizing U.S. Community Economic Development: Evidence from New York City. *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X20929070>

- Welter, F., Baker, T., Audretsch, D. B., & Gartner, W. B. (2017). Everyday Entrepreneurship—A Call for Entrepreneurship Research to Embrace Entrepreneurial Diversity. *Entrepreneurship Theory and Practice*, 41(3), 311–321. <https://doi.org/10.1111/etap.12258>

Key Words: Entrepreneurship, Community Development, Walking, Place, Local Knowledge

UNDERSTANDING PATHWAYS TO SUCCESS: AN EXAMINATION OF WHICH LOCAL INSTITUTIONS RACIALLY DIVERSE ENTREPRENEURS TURN TO FOR ASSISTANCE AND WHY

Abstract ID: 1084

Abstract within Pre-Organized Session 15

HARPER-ANDERSON, Elsie [Virginia Commonwealth University] elharperande@vcu.edu, presenting author

Recently there has been a great deal of attention from policymakers and scholars focused on creating diversity and equity within entrepreneurial ecosystems. Historically, minority firms have higher closure rates, lower sales, fewer employees, and lower profits than white-owned firms (Fairlie and Robb 2008). While there has been a great deal of research focused on the entrepreneur and their individual characteristics to explain racial differences, more recent studies focus more on the ecosystem and the interaction between the entrepreneur and the broader network of institutional stakeholders including entrepreneurial support organizations (ESOs).

ESOs play a critical role in helping entrepreneurs access resources and information to start and grow their businesses (Motoyama, 2015). ESO configurations range from service providers and traditional incubators to more recent manifestations, including accelerators, maker spaces and rental spaces for gig economy contractors. ESOs often act as a critical link between the individual entrepreneur and a wide variety of information and resources available in the broader ecosystem. However, evidence is starting to emerge documenting how entrepreneurs from historically marginalized groups face barriers to accessing services offered by ESOs. Evidence points to geographic barriers, weak social networks, unattainable requirements among other factors. The COVID-19 pandemic inflicted even more stress on an already challenging situation. Businesses run by African-Americans and Latinos were hit especially hard with Black-owned businesses decreasing by 41% in the initial months of the pandemic.

This study focuses on entrepreneurs in the Richmond, Virginia ecosystem. Richmond holds a unique place in the economic and social history of the US. As the former capital of the confederacy, the city has a long history of economic marginalization of blacks. At the same time, as the former “Wall street of the south”, the city also has a legacy of a black entrepreneurial spirit.

This study adds to the literature on racial inequality in entrepreneurship, by exploring the various paths entrepreneurs take in establishing and growing their businesses paying particular attention to the barriers they face, where they turn for assistance, how they make decisions and where they actually receive resources and information. Ultimately, we hope to compare the experiences of entrepreneurs of different racial groups have with ESOs within the Richmond ecosystem.

This mixed methods community engaged research follows forty entrepreneurs from different races and ethnicities (Black, White and Hispanic) through the Richmond, Virginia ecosystem for an entire year using weekly diaries. The data collection instrument was co-designed by the research team and a group of local entrepreneurs. Our aim is to understand the differences in the paths they take, and the factors that contribute to success and failure for each group. Diary entries are coded for key themes and patterns using Dedoose qualitative software. We also use social network analysis to trace the paths of where entrepreneurs turn for assistance. Finally, based on issues raised by entrepreneurs, we interview administrators of ESOs to understand their views and explore questions and issues raised by entrepreneurs about their organizations.

Citations

- Bates T, Robb A. Impacts of Owner Race and Geographic Context on Access to Small-Business Financing. *Economic Development Quarterly*. 2016;30(2):159-170.
- Knowlton, K., Ozkazanc-Pan, B., Clark Muntean, S., & Motoyama, Y. (2015). Support organizations and remediating the gender gap in entrepreneurial ecosystems: a case study of St. Louis. *Louis* (November 2, 2015). Keywords: entrepreneurship, ecosystem, racial equality, Entrepreneurial Support Organization
- Fairlie, R. W., & Robb, A. M. (2004). Why Are Black-Owned Businesses Less Successful than White-Owned Businesses? The Role of Families, Inheritances, and Business Human Capital (Discussion Paper Series IZA DP No. 1292). The Institute for the Study of Labor.

Key Words: entrepreneurship, inequality, ecosystem

RESEARCH ON THE POLICY PERFORMANCE OF NATIONAL HIGH-TECH INDUSTRIAL DEVELOPMENT ZONE FOR URBAN INNOVATION AND DEVELOPMENT: ANALYSIS BASED ON DIFFERENCE-IN-DIFFERENCE TEST

Abstract ID: 1016

Individual Paper Submission

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Since its implementation in the 1980s, the high-tech industrial development zone (HIDZ) aims to promote the progress of national science and technology industry and drive the innovative development of cities in China. The role of HIDZ and their related policies in promoting urban development has been confirmed by many studies, but their policy performance differences in urban innovation and economic growth still need to be further analyzed. Based on the panel data of cities from 2000 to 2019, this paper uses the PSM-DID model to study the policy performance and difference of the establishment of HIDZ on urban economic growth and innovation output. Firstly, 226 cities suitable for econometric analysis are selected according to the PSM method, and then the statistical regression analysis of DID method is carried out. The empirical results show that: In general, national HIDZ can drive urban economic development and improve regional innovation ability, and their effectiveness in increasing urban innovation output is better than promoting economic growth. Further research shows that in promoting innovation, the establishment of HIDZ has a better effect on the cities in eastern region, cities with higher administrative levels and cities with economic development zones; In terms of promoting economic growth, it will help the cities in western region, small cities and cities without economic development zones. Finally, based on the empirical assumptions, combined with the actual situation of China's HIDZ, this paper obtains some policy enlightenment for the development of HIDZ and cities. The research shows that the evaluation of China's HIDZ should focus on their impact on urban and regional development; at the same time, we should reflect on the necessity of establishing all kinds of development zones such as HIDZ with clear spatial boundaries in various regions after entering the era of stock development. The value of this study is to systematically verify the pure policy performance of China's HIDZ construction for urban innovation and development.

Citations

- WONG S W, TANG B S. Challenges to the sustainability of 'development zones': A case study of Guangzhou Development District, China [J]. *Cities*, 2005, 22(4): 303-16.
- HUANG Z, HE C, ZHU S. Do China's economic development zones improve land use efficiency? The effects of selection, factor accumulation and agglomeration [J]. *Landscape & Urban Planning*, 2017, 162: 145-56.
- ZHENG S, SUN W, WU J, et al. The Birth of Edge Cities in China: Measuring the Spillover Effects of Industrial Parks [J]. *Journal of Urban Economics*, 2017, 100(jul.): 80-103.
- ZHAO Min, WANG Qixuan. On the Origin, Evolution and Transformation of the Development Zones in China[J]. *Urban Planning Forum*, 2021, (06): 28-36.
- LIU Tianen, TIAN Xuebin, CAO Yang. Policy Effect Evaluation of the National New District on Regional Economic Development: An Empirical Research Based on Difference-in-differences Method[J]. *Finance and Trade Research*, 2019, 30(6): 24-35.

Key Words: High-tech industrial development zone, Policy performance, Technological innovation, Economic growth, Difference-in-difference model

ASSESSING THE ECONOMIC RECOVERY OF LOCAL BUSINESS INTERRUPTION AFTER DISASTERS, SALT LAKE CITY, UTAH

Abstract ID: 1018

Individual Paper Submission

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Small businesses are fundamental units in local economic development since they promote job creation, tax revenue for the local economy, and maintain social networks for community well-being. However, they are particularly vulnerable to disasters and supply chain disruptions. Current literature on supply management falls short of examining the behaviors of small businesses in response to supply chain disruptions (Kull et al., 2018). Post-disaster supply chain disruptions are more likely to impact small businesses because they are typically fewer resources

adversely, have higher rates of minority ownerships than other size businesses (Marshall & Shrank, 2014), and are limited in their ability to develop alternative supply streams (Mesquita & Lazzarini, 2008), and have higher transaction costs due to lower bargaining power and reputation (Arend & Wisner, 2005). This study fills these gaps and examines the recovery experiences of small businesses after the 2020 Magna UT Earthquake and COVID-19 pandemic in Salt Lake City, UT has a hypothesis: Small businesses are more likely to have supply chain issues and less likely to recover from the disasters.

A local business survey was conducted from November 2021 to March 2022. Data builds on PI's previous research that has identified ten industrial sectors most likely to be impacted by supply disruptions in case of an M7.0 earthquake in the Wasatch Front region. Business databases were drawn using stratified sampling method from the Mergent Intellect business information database. A total of 150 businesses out of 3,830 (3.9% response rate) completed the survey by email and dropped off the paper copy. The number of employees under 10 accounts for 66.15% and seven businesses show over 100 employees in their business (5.3%). The mean of operation year is 27 years ranging from 1 year to 150 years. Descriptive statistics and linear regression will be conducted to identify the impact of disasters by the size of the business (small or large). The results will expect small businesses are more likely to be vulnerable to dealing with the supply chain issues, which leads to deter their business operation and retention. The results of this study will allow planners and policymakers to make strategic and equitable economic and community infrastructure investments to help small businesses survive and thrive in the face of disasters.

Citations

- Marshall, M. I., & Shrank, H. L. (2014). Small business disaster recovery: a research framework. *Natural Hazards*, 72(2), 597-616.
- Lazzarini, S. G., Claro, D. P., & Mesquita, L. F. (2008). Buyer-supplier and supplier-supplier alliances: do they reinforce or undermine one another?. *Journal of Management Studies*, 45(3), 561-584.
- Watson, M. (2021). The role of SBA loans in small business survival after disaster events. *Journal of Planning Education and Research*, 0739456X211028291.

Key Words: Local business recover, business interruption, local economic resilience, disasters

ON-FARM DIVERSIFICATION: BALANCING FARMLAND PROTECTION WITH ECONOMIC DEVELOPMENT TO ACHIEVE AGRICULTURAL VIABILITY IN ONTARIO

Abstract ID: 1044

Individual Paper Submission

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Despite vast geography, only five percent of Canada's land base is prime agricultural land – a finite, non-renewable resource foundational for the nation's food, fibre, and fur production, the local food economy, agri-food exports, and the growing bio-based economy (MMAH, 2020). Despite this incredible value, prime agricultural land in Canada is decreasing in all ten provinces, especially in Ontario, home to over half of Canada's class 1 farmland (Caldwell et al., 2022). While 98% of farms in Canada are family-owned, the number of small and medium-sized farms is dwindling while the number of large farms has increased (Statistics Canada, 2016). These statistics illustrate the difficulty for smaller family farms to prosper in today's agri-food system.

Farmers are responding by pushing the entrepreneurial envelope to go beyond the traditional growing of crops and raising livestock, especially in Ontario (Fox & Wang, 2016). To keep their agricultural operations viable, many farmers establish uses on their lands that planning professionals have never seen before in rural areas, such as wineries, circus schools, wake parks, theatres, and more. In Ontario, the Provincial Policy Statement (2020) and the Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas (2016) introduce on-farm diversified uses (OFDUS) in agricultural areas, allowing farmers to balance development opportunities with farmland protection. These policy provisions and guidance documents provide an avenue for the land use planning profession to recognize that it is not enough to preserve farmland, but that society must also preserve the family farmer.

With municipalities now tasked with translating the Guidelines into local policies and community contexts, the planning profession and municipal sector are left with more questions than answers: How should zoning bylaws allow or prohibit these types of entrepreneurial activities on farms? How should planners assess the appropriateness of OFDUS and deal with issues of scale, compatibility, and cumulative effects? What are the implications on farming, and at what point does diversification negatively impact farm operations and erode the viability of agricultural production? How does this happen without promoting another form of urban sprawl or detracting from the vitality of rural downtowns?

Using a mixed-method research design, this research explores three questions: (i) What is the current effectiveness of policy that allows for OFDUs within Ontario at an individual farm, municipal, and provincial scale? (ii) What is the specific effect of OFDUs policy on individual farmers diversifying their land uses and operations? And (iii) what best practices for policy and strategies for OFDUs exist amongst municipalities and farmers to balance farmland preservation with land-based development?

Data collection is achieved through a quantitative e-survey administered to farmers and municipalities across rural Ontario and through 71 interviews conducted with ministry staff, municipal planning staff, and farmers diversifying operations across rural Ontario. Focus groups were conducted with these stakeholders to review and assure accurate interpretation of research results, share best practices, co-identify recommendations, and discuss the next steps for Ontario's land-use planning system. Findings suggest that supplementary guidance materials, training opportunities, and sharing of best practices would be valuable for municipalities, the province, and farmers alike. These actions ensure on-farm diversification maintains compatibility with farm operations and balances long-term agricultural viability, farmland protection, and rural economic opportunity.

This study is supported by the Ontario Agri-Food Innovation Alliance, a partnership between the Ontario Ministry of Agriculture, Food and Rural Affairs and the University of Guelph.

Citations

- Caldwell, W., Epp, S., Wan, X., Singer, R., Drake, E., & Sousa, E. C. (2022). Farmland Preservation and Urban Expansion: Case Study of Southern Ontario, Canada. *Frontiers in Sustainable Food Systems*, 6, 777816. <https://doi.org/10.3389/fsufs.2022.777816>
- Fox, G., & Wang, Y. (2016). An Economic Analysis of Rural Land Use Policies in Ontario (pp. 1–84). Fraser Institute. <https://www.fraserinstitute.org/sites/default/files/an-economic-analysis-of-rural-land-use-policies-in-ontario.pdf>
- Ministry of Municipal Affairs and Housing (MMAH). (2020). Provincial Policy Statement, 2020. Queen's Printer for Ontario. <https://www.ontario.ca/page/provincial-policy-statement-2020>
- Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). (2016). Guidelines on Permitted Uses in Ontario's Prime Agricultural Areas. Queen's Printer for Ontario. <http://www.omafra.gov.on.ca/english/landuse/permitteduses.htm>
- Statistics Canada. (2014, February 18). Canadian Agriculture at a Glance. <https://www150.statcan.gc.ca/n1/pub/96-325-x/2014001/article/11905-eng.htm>

Key Words: agricultural viability, farmland preservation, economic Development, land use compatibility, planning policy

HOW DO LOCAL POLICIES SHAPE THE STATUS OF GREEN JOB DEVELOPMENT?

Abstract ID: 1054

Individual Paper Submission

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My dissertation aims to explore and understand the geographical distribution and growth trends of green jobs over the past 20 years in the US. Particularly in this paper, I will investigate what are the local employment effects of state and local environmental policies on green employment growth? More specifically, are there differential employment effects of state and local environmental policies by workers' skill level? In addition, I would also like to compare the equity status of green jobs between different localities. Is there evidence of wage discrimination in green jobs and how do state and local environmental policies play into the discrimination effect? The purpose of this analysis is to generate information for policymakers regarding actions that might support the equitable growth of green activities and jobs.

An important inspiration for this dissertation topic is the work of Scott Campbell. While his sustainable development paradigm has gained ground in planning documents and is becoming more institutionalized (Campbell, 2016), the conflicts between environment, equity, and economic development remain prominent in real planning practice. The existing literature is lacking in three aspects. First, many of these studies, especially those focusing on local or city levels, lack a consistent definition and reproducible measures of green activity and jobs. Second, most of the studies treated the various policy instruments as the same and fail to recognize the heterogeneous effect of different policy instruments, especially on the local level. Third, the discussion of the equity aspect of green jobs is limited and in need of further exploration. We need to better understand how policy impacts might disproportionately affect some populations more than others. In the context of "Green New Deal" proposals, this question is particularly important given the fact that many federal-level policies in the past did not adopt community-based approaches and thus have disproportionately affected more marginalized populations (Goh, 2020).

To address these research questions, I will first deploy a descriptive analysis to explore the geographical distribution and growth pattern, as well as the characteristics of green jobs at the local level. The measure of green jobs follows Vona et al. (2019)'s occupational approach. The quality of jobs can be measured by combining the BLS's employment data with IPUMS USA data to obtain information on wages and other job aspects. Second, I will employ a set of fixed-effect models to estimate how different types of policy impact the number of total jobs and green jobs, as well as the wage premium. The key policy variables will come from the Database of State Incentives for Renewables & Efficiency (DSIRE). Finally, I will explore whether discriminations exist among green jobs by using the wage discrimination model to investigate how being in a marginalized group affects an individual's wage level.

Citations

- Campbell, S. (2016). The Planner's Triangle Revisited: Sustainability and the Evolution of a Planning Ideal That Can't Stand Still. *Journal of the American Planning Association*, 82(4), 388–397.
- Goh, K. (2020). Planning the Green New Deal: Climate Justice and the Politics of Sites and Scales. *Journal of the American Planning Association*, 86(2), 188–195.
- Vona, F., Marin, G., & Consoli, D. (2019). Measures, drivers and effects of green employment: Evidence from US local labor markets, 2006-2014. In *Journal of Economic Geography* (Vol. 19, Issue 5, pp. 1021–1048).

Key Words: Green Jobs, Local Environmental Policy, Equity

THE DRIVERS OF URBAN DECLINE BY SHRINKING TRAJECTORIES: A PANEL ANALYSIS OF 285 CHINESE CITIES DURING 2004-2019

Abstract ID: 1071

Individual Paper Submission

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The phenomenon of shrinking cities has been in process since the 1950s and has attracted the attention of scholars and practitioners since the 1990s. Previous classifications examining and comparing the trajectories of urban shrinkage mainly focus on population loss, while few studies investigated shrinking trajectories by population loss and economic decline. The periods of previous studies are often split into time intervals for before-and-after comparisons, yet few studies have analyzed continuous time-series data for shrinking trajectories identification. Because the drivers differ by individual city, it is also challenging to identify the drivers of urban shrinkage for understanding the mechanism behind the formation and evolution of shrinking cities. Here, we assumed that there are common factors of such declination among cities that share similar growth/decline trajectories. We first used time-series machine learning to classify the 285 Chinese cities into four groups that share similar trajectories of population and economic changes from 2004 to 2019. Then we estimated the effects of potential drivers on urban growth and decline using panel data regression. The first group is characterized by continued economic and demographic growth; the second one has experienced economic decline but continued population growth; the third group is still growing economically but has experienced population decline; the fourth group of cities has experienced a decline in both populations and economy. Panel data regression revealed that: the shares of secondary industry and tertiary industry have different significant impacts on the population growth in the first and second groups; people employed in manufacturing and averaged wage have different significant impacts on the economic growth in the first and third group; and unexpectedly, average wage growth is associated with population decline in all cities except for the fourth group. This paper advances a more nuanced understanding of shrinkage and provides new and specific evidence to support the planning and design of sustainable cities.

Citations

- Hartt, M. (2018). The diversity of North American shrinking cities. *Urban Studies*, 55(13), 2946–2959. <https://doi.org/10.1177/0042098017730013>
- Wolff, M., & Wiechmann, T. (2018). Urban growth and decline: Europe's shrinking cities in a comparative perspective 1990–2010. *European Urban and Regional Studies*, 25(2), 122–139. <https://doi.org/10.1177/0969776417694680>
- Guan, D., He, X., & Hu, X. (2021). Quantitative identification and evolution trend simulation of shrinking cities at the county scale, China. *Sustainable Cities and Society*, 65, 102611.
- WIECHMANN, T. and PALLAGST, K.M. (2012). Urban shrinkage in Germany and the USA: A Comparison of Transformation Patterns and Local Strategies. *International Journal of Urban and Regional Research*, 36: 261-280. <https://doi.org/10.1111/j.1468-2427.2011.01095.x>
- Haase, A., Nelle, A., & Mallach, A. (2017). Representing urban shrinkage—The importance of discourse as a frame for understanding conditions and policy. *Cities*, 69, 95-101.

HOW CAN INNOVATION NETWORK STRUCTURE INFLUENCE POST-DISASTER ECONOMIC RESILIENCE?

Abstract ID: 1110

Individual Paper Submission

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Innovation promotes economic resilience by creating new business, promoting employment, and improving productivity. Innovation is a social and communicative process, so it is likely to occur in collaboration. The network reflecting how inventors collaborate indicates shared resources, knowledge, and capital between agents. Different network structures exhibit various levels of coordination capabilities and openness. For example, a decentralized network increases access to diverse information and promotes learning, but lacks the effectiveness in coordinating resources and diffusing information, while a centralized network presents the opposite characteristics.

Characteristics of different network structures imply various economic resilience. The economic resilience literature generally identifies two categories for the resilience conception. The first is adaptation. It concerns the capability of an economic system to resist external shock, and bounce back to the pre-shock development path (Boschma, 2015). The second is adaptability. It refers to long-term capabilities of developing new growth paths (Boschma, 2015). The two kinds of resilience present a trade-off relationship (Pike et al., 2010). When a region is efficient in returning to pre-existing path, it may be reluctant to develop a novel growth path, and vice versa (Martin, 2012; Xiao & Drucker, 2013).

Prior studies have examined the impact of innovation on regional resilience (Muštra et al., 2020), but how different network structures influence different dimensions of economic resilience (i.e., adaptation, adaptability), respectively, is understudied. This paper fills in the gap and studies the following research questions: (1) What characteristics of innovation network structures contribute to a region's capability of resisting external shock and recovering to pre-shock conditions (i.e., adaptation)? (2) What characteristics of innovation network structures contribute to the capability of developing new growth paths (i.e., adaptability)? (3) How to balance the trade-off relations and achieve an overall strong resilience?

We use 9.5 million patent inventors' data from U.S. Patent and Trademark Office (USPTO) to construct the inventors' co-patenting networks in all the metropolitan and micropolitan areas in the U.S. from 1990 to 2020. We adopt social network analysis (SNA) to quantify the innovation network structures. Our indicators of network structures include average betweenness centrality, average closeness centrality, average degree centrality, and component ratio.

We identify four kinds of natural disasters (i.e., flooding, hurricane, earthquake and tsunami) as exogenous shocks to examine post-disaster economic resilience. We focus on hazards that cause more than 10 million direct property damages. We collect 1605 disaster records covering 296 metropolitan and micropolitan areas between 1990 and 2020 from the Spatial Hazard Events and Losses Database for the U.S. (SHELDUSTM).

We collect employment data at the four-digit industry code level between 1990 and 2020 from the U.S. Bureau of Labor Statistics. We identify local pillar industries using location quotients before the natural-disaster shock. We use the average change rate of pillar-industries' location quotients before and after the disasters to measure regional economic resilience. So far, we have cleaned all the data and calculated the dependent and independent variables over time. Next step, we will use regression to examine the influence of network structure on different kinds of economic resilience.

The study contributes to economic resilience literature by deepening the understanding of utilizing specific network structural advantages to empower different aspects of resilience. Practically, this study could guide planners to target stimulus packages to optimize innovation network structures and improve overall economic resilience.

Citations

- Xiao, Y., & Drucker, J. (2013). Does economic diversity enhance regional disaster resilience? *Journal of the American Planning Association*, 79(2), 148–160. <https://doi.org/10.1080/01944363.2013.882125>
- Boschma, R. (2015). Towards an Evolutionary Perspective on Regional Resilience. *Regional Studies*, 49(5), 733–751. <https://doi.org/10.1080/00343404.2014.959481>
- Martin, R. (2012). Regional economic resilience, hysteresis and recessionary shocks. *Journal of Economic Geography*, 12(1), 1–32. <https://doi.org/10.1093/jeg/lbr019>
- Pike, A., Dawley, S., & Tomaney, J. (2010). Resilience, adaptation and adaptability. *Cambridge Journal of Regions, Economy and Society*, 3(1), 59–70. <https://doi.org/10.1093/cjres/rsq001>

- Muštra, V., Šimundić, B., & Kuliš, Z. (2020). Does innovation matter for regional labour resilience? The case of EU regions. *Regional Science Policy & Practice*, 12(5), 955–970. <https://doi-org.proxy.lib.fsu.edu/10.1111/rsp3.12348>

Key Words: Economic Resilience, Innovation, Natural Disaster, Social Networks Analysis

DEFINING THE “BLUE ECONOMY”: A REVIEW OF EMPIRICAL APPROACHES TO QUANTIFYING “BLUE ECONOMY” CLUSTERS

Abstract ID: 1114

Individual Paper Submission

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As the concept of the "Blue Economy" gains popularity, planners and economic developers seeking to assess and forecast the performance of local blue economies face inconsistencies in how the blue economy is defined. In this study, I explore how the blue economy is defined and measured, focusing on identifying common points of conflict in how the blue economy concept is mapped on to standard industrial classification systems. Through a review of literature, I compare and contrast industrial definitions of the blue economy sector. I use the identified blue economy sector definitions to estimate industrial economic indicators for coastal MSAs and to identify blue economy clusters in the United States. I also conduct a case study review of “green economy” literature to identify strategies for reconciling definitional conflicts. Additionally, I explore other indicators and metrics of blue economy industrial performance rooted datasets outside the standard industrial classification systems. My research reveals that many conflicts between definitions of the blue economy sector are rooted in the inadequate coverage of standard industrial classifications of hybridization of traditional maritime industries with advanced technology manufacturing and services fields. My work has implications for the study and practice of blue economic development. My work provides scholars and practitioners with new contextual understanding of prevailing measurements of the blue economy and new strategies for measuring blue economy industrial activity.

Citations

- Smith-Godfrey, Simone. "Defining the blue economy." *Maritime affairs: Journal of the national maritime foundation of India* 12, no. 1 (2016): 58-64.
- Colgan, C. S. (2016). Measurement of the ocean economy from national income accounts to the sustainable blue economy. *Journal of Ocean and Coastal Economics*, 2(2), 12.
- Wenhai, L., Cusack, C., Baker, M., Tao, W., Mingbao, C., Paige, K., & Yufeng, Y. (2019). Successful blue economy examples with an emphasis on international perspectives. *Frontiers in Marine Science*, 6, 261.
- Brears, R. C. (2021). *Developing the Blue Economy*. Palgrave Macmillan.
- Voyer, M., Quirk, G., McIlgorm, A., & Azmi, K. (2018). Shades of blue: what do competing interpretations of the Blue Economy mean for oceans governance?. *Journal of environmental policy & planning*, 20(5), 595-616.

Key Words: blue economy, industrial classification, coastal, economic development

NETWORK POWER OR POWER PENETRATED NETWORK? AN ANALYSIS OF THE COMMUNICATION NETWORK IN AN ECONOMIC DEVELOPMENT PROJECT

Abstract ID: 1121

Individual Paper Submission

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Planning theorists have, for long, recognized that communication networks affect planning outcomes (Innes, 1995). However, the theoretical and empirical description of such networks remains largely static, portraying a network structure either as positive (collaborative) or negative (power-penetrated). Collaborative networks engage a wide range of diverse and interdependent community members in authentic dialogue, which allow free exchange of knowledge and opinion, and enable planning to adapt to emerging situations. However, communication networks can also be highly hierarchical, with privileged participants perpetuating their power through the network. They may block knowledge flow, distort information, and manipulate communication to obtain their desired outcomes.

Extant empirical studies have analyzed excerpts of planning communications or mapped communication networks in a snapshot (Lyles, 2015; Wu et al., 2020), but few have documented and analyzed the dynamics of the communication flow for a planning project from beginning to finish (Eräranta and Mladenović, 2021). As a result, our understanding of the communication pattern and power dynamics throughout the planning process is limited. This paper fills this gap.

Using social network analysis and text mining methods, we analyzed the entire collection of email exchanges involving key decision-makers of a local economic development project in the city of Tallahassee over five years—from the start till completion. We visualized and quantified the structure of the communication network during different phases of this project, and identified key individuals with significant power to block or distort information. We also zoomed into key decision-makers to quantify the communication sentiment among them and study how those sentiments shape their decisions. We also specifically examined the shifting roles of planners in the communication network throughout this project.

The preliminary results show that political power has penetrated into the communication network with some key actors holding the power to manipulate information. However, people holding power have shifted across various stages of this development project, and towards the completion of the project, the network has become more decentralized. This power-penetrated network in the study case has resulted in several key politicians engaged in corruptive activities during this project.

This study shows that network analysis can help identify power imbalances in the communication network during an economic development project. With that information, planners can take the initiative to decentralize the network to promote a truly collaborative communication process. This case study also shows the importance for economic development educators to introduce negotiation into their classes (Wolf-Powers, 2013); a power-penetrated negotiation can result in a corruptive project, regardless of how well the technical analyses have been done. Therefore, educating planning students to understand and catch red flags in the negotiation process is no less important than teaching traditional analytical techniques.

Citations

- Eräranta, S., & Mladenovic, M. N. (2021). Networked dynamics of knowledge integration in strategic spatial planning processes: a social network approach. *Regional Studies*, 55(5), 870-882.
- Innes, J. E. (1995). Planning theory's emerging paradigm: Communicative action and interactive practice. *Journal of Planning Education and Research*, 14(3), 183-189.
- Lyles, W. (2015). Using social network analysis to examine planner involvement in environmentally oriented planning processes led by non-planning professions. *Journal of Environmental Planning and Management*, 58(11), 1961-1987.
- Wolf-Powers, L. (2013). Teaching Planners to Deal: The Pedagogical Value of a (Simulated) Economic Development Negotiation. *Journal of Planning Education and Research*, 33(3), 348-362.
- Wu, W., He, F., Zhuang, T., & Yi, Y. (2020). Stakeholder analysis and social network analysis in the decision-making of industrial land redevelopment in China: The case of Shanghai. *International Journal of Environmental Research and Public Health*, 17(24), 1-27.

Key Words: communication network, economic development project, negotiation, email

LOW-SKILLED JOB OPPORTUNITY IN THE REVITALIZED PHILADELPHIA, PA: SPATIAL ECONOMETRIC MODELING ON SKILL- AND INDUSTRY-SPECIFIC JOB CLUSTERING

Abstract ID: 1253

Individual Paper Submission

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The impact of transit improvement on agglomeration economies has been studied in regional science and urban planning. However, few studies focused on the relationship between the transit-induced agglomeration and a disadvantaged labor force. This study highlights an equity issue related to economic development associated with transit. To fill this gap, we investigate heterogeneous impacts of the transit-induced agglomeration on job opportunity for employees in different skill levels and service sectors. In Philadelphia, PA, recent urban revitalization projects have recruited multinational firms, which consequently concentrated high-skilled jobs to the transit-rich urban central areas. The Location Quotient (LQ) is an indicator for job opportunity by skill level and industry, and the effective density represents transit-induced agglomeration. We use spatial econometric models to estimate direct and spillover impacts of effective density on LQ for low- and high-skilled jobs and different industries. Results show that transit-induced agglomeration has a negative direct effect on low-skilled jobs, and a positive direct effect on high-skilled jobs. These results imply that the development strategy heavily favored high-tech and knowledge-based firms,

which concentrated high-skilled workers while low-skilled workers became underrepresented in the urban core areas. This could undermine the transit-dependent low-skilled workers' accessibility to job opportunity. The spillover effect on low-skilled LQ is positive, which implies that resources and investments were concentrated in enclaved revitalized zones leaving the neighboring areas in decline. The revitalizations projects may have caused uneven and inconsistent local economic conditions across the metropolitan area.

Citations

- Chatman, D.G., R.B. Noland, and N. Klein. 2016. Firm Births, Access to Transit, and Agglomeration in Portland, Oregon, and Dallas, Texas. *Transportation Research Record* 2598, pp. 1-10.
- Graham, D.J. 2007. Agglomeration, Productivity and Transport Investment. *Journal of Transport Economics and Policy* 41, pp. 317-343.
- LeSage, J. 2014. What Regional Scientists Need to Know about Spatial Econometrics. *The Review of Regional Studies* 44, pp. 13-32.
- Wiig, A. 2019. Incentivized Urbanization in Philadelphia: The Local Politics of Globalized Zones. *Journal of Urban Technology* 26 (3), pp. 111-129. doi: 10.1080/10630732.2019.1573628

Key Words: Public transit, Agglomeration economies, Low-skilled jobs, Urban revitalization, Spatial econometrics

WHICH CITIES HAVE BEEN DISCONNECTED? CHANGES IN INTERURBAN NETWORKS AND DEVELOPMENT DYNAMICS IN THE U.S.

Abstract ID: 1322

Individual Paper Submission

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Globalization and technological change have had profound impacts on urban systems worldwide, generating winners and losers and contributing to rising intra- and interurban inequality. This is particularly visible in the United States, where scholarly studies and media reports suggest that along with these processes firms and governments have “left behind” smaller, isolated city-regions, while concentrating high-income jobs and resources in the most dynamic urban areas. Empirical evidence reveals strong concentration process of economic activity in these city-regions, whereas systematic investigations of shifts in the linkages between the large dynamic regions and smaller less-advantaged regions have been relatively limited. Using the unique LexisNexis Corporate Affiliations database, we construct a network of subsidiary linkages that covers the entire U.S. urban system and analyze changes in this network through investment and disinvestment decisions between 1993 and 2017. Using social network techniques, we i) characterize how the geography of firms' linkages within the U.S. urban system and around the globe has changed over time and ii) identify how these changes are related to employment, income and demographic patterns. We identify a complex typology of the changing role of city-regions within the urban system, beyond simply winners and losers.

Citations

- Rodríguez-Pose, A. (2018). Commentary: The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189–209.
- Kemeny, T., & Storper, M. (2020). Superstar cities and left-behind places: Disruptive innovation, labor demand, and interregional inequality. In *International Inequalities Institute Working Paper Series* (No. 41).
- Cramer, K. (2016). *The Politics of Resentment: Rural Consciousness in Wisconsin and the Rise of Scott Walker*. Chicago: Chicago University Press.
- Sassen, S. (2000). *Cities in a World Economy* (2nd ed.). Thousand Oaks: Pine Forge Press.

Key Words: inequality, interurban networks, urban connectivity, urban-economic decline

WHERE DO WE GO FROM HERE? ENTREPRENEURS' POST-INCUBATION LOCATION DECISIONS

Abstract ID: 1392

Individual Paper Submission

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Entrepreneurs are decidedly rooted in place when it comes to making decisions about where to start or relocate their firms. They are apt to choose the region that is 'home' (Dahl & Sorenson 2012; Figueiredo et al. 2002). This phenomenon flies in the face of economic theory that predicts entrepreneurs should city-hop, seeking the city that

will maximize profit. Economic developers should care about where firms locate because location decisions affect firms' innovation capacity (Ferreira et al. 2017) and other metrics of success (Vedula & Kim 2019). These in turn impact the economic trajectories of regions.

Attachment to place is not the entire story of firm location, as is evidenced by the many successful immigrant entrepreneurs (Huang & Liu 2019). Entrepreneurs need a variety of specialized resources and access to capital (Stephens et al. 2019) that, as much as they wish, may not be available in their desired locale. Scholars have found support for location explanations such as the role of sector (Ferreira et al. 2016), regulations (Rohlin et al. 2014), universities (Audretsch & Lehmann 2017; Donegan & Lowe 2020), commute (Backman & Karlsson 2017), urban 'third places' (Fang et al. 2022), crime (Matti & Ross 2016), visual appeal (Smit 2011), and serendipity (Berg 2014). The most well supported reason for why firms, new and incumbent, locate where they do is the benefits of agglomeration economies (Marshall 1920; Jacobs 1969). Such economies operate below the city level, even at the neighborhood and individual building level (Adler et al. 2019; Rosenthal & Strange 2020). Agglomeration economies bolster the arguments for entrepreneurial support organizations (ESOs) like incubators and accelerators that bring start-ups together to learn from mentors and experts.

Co-location in ESOs is important for developing social networks (Brennitz et al. 2018) and accessing resources (Amezcuca et al. 2013; Clayton et al. 2018; Hallen et al. 2020) and has urban economic development impacts (Madaleno et al. 2022). One unexplored element is the influence of local ESOs on entrepreneurs' location decisions. How the proliferation in the number of ESOs in the past decade has influenced the geography of local entrepreneurship is an open question, as well as how these organizations impact their participants' subsequent location decisions. This paper takes up the latter question.

Specifically, the paper traces start-ups' post-incubator locations to understand how local ESOs shape the geography of local entrepreneurial ecosystems. The paper hypothesizes that location decisions may be grouped into three motivations: 1) economic, 2) home/place-bias, and 3) external forces (e.g., VC requires a move to their location). To study movement patterns the paper provides an in-depth, quantitative analysis of start-ups in Atlanta Georgia, a growing technology hub. The paper compares location decisions over the past 10 years for firms that used two different types of incubators (one university based and one private located in different neighborhoods). The paper's quantitative, empirical analysis uses a new dataset on Georgia entrepreneurship (PLACE: Georgia) that combines data from National Establishment Time Series, business registrations, web scraped ESO participation archives, Crunchbase, Patents View, company websites, and others, supplemented with informational interview data.

Preliminary analysis of firm moves indicates most movement occurs within metropolitan Atlanta, to the northeast economic region of the state, and out of state. The contributions of this paper are, first, to advance theory on the geography of entrepreneurial ecosystems and firms, and second, to add to the literature on entrepreneur location decisions a consideration of the role of ESOs. The paper concludes with practical implications for local economic development practitioners seeking to support entrepreneurship and technology-based economic development activity that is spatially inclusive.

Citations

- Adler, P., Florida, R., King, K., & Mellander, C. (2019). The city and high-tech startups: The spatial organization of Schumpeterian entrepreneurship. *Cities*, 87, 121-130.
- Madaleno, M., Nathan, M., Overman, H., & Waights, S. (2022). Incubators, accelerators and urban economic development. *Urban Studies*, 59(2), 281-300.
- Dahl, M. S., & Sorenson, O. (2012). Home sweet home: Entrepreneurs' location choices and the performance of their ventures. *Management Science*, 58(6), 1059-1071.
- Donegan, M., & Lowe, N. (2020). Going local: Placing entrepreneurial microgeographies in a larger regional context. *Industry and Innovation*, 27(8), 871-891.
- Fang, L., Adelakun, F., & Goetemann, T. (2022). Brewing entrepreneurship: Coffee and startups. *Journal of Planning Education and Research*, 0739456X211067272.

Key Words: incubator, start-up location, location choice, entrepreneurial support organization, entrepreneurial ecosystem

JOB TRAINING AND CLIMATE JUSTICE: PAVING THE WAY FOR VULNERABLE RESIDENTS

Abstract ID: 1393

Individual Paper Submission

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On his first day in office, President Biden rejoined the Paris Agreement, which highlights the importance of a national approach to climate change mitigation, one that seeks to further climate justice, as it “tak[es] into consideration vulnerable groups, communities and ecosystems,” and “integrat[es] adaptation into relevant socio-economic and environmental policies and actions, where appropriate” (United Nations, 2016). Additionally, President Biden signed a series of environmental executive orders on January 27, 2021, which will be “empowering American workers and businesses to lead a clean energy revolution that achieves a carbon pollution-free power sector by 2035”. The creation of clean energy jobs (henceforth green jobs) is central to these executive orders, which will be implemented on different scales and locations across the country. Considering that climate mitigation efforts can unfold on a variety of scales, this study focuses on the local level.

One of the pillars of climate change mitigation should be climate justice, as this framework can foster “a ‘just transition’ to a post-carbon economy and [provide] assistance to disadvantaged communities” (Schlosberg & Collins, 2014, p. 366). If efforts to mitigate climate change are implemented in ways that do not further justice, then the post-carbon economy will replicate the current unequitable global socio-economic structure. Seeing as the built environment contributes to 59% of greenhouse gas emissions, it is imperative to promote changes in cities to move towards carbon pollution-free cities (Fitzgerald, 2020; Mi et al, 2019). In the context of climate justice, such changes can consist in making green jobs available to those who need them the most.

This study investigates how training programs can include disadvantaged residents in the green workforce through training for local “green” jobs. The following research questions are posed: How do local organizations attempt to respond to climate mitigation in ways that promote justice by implementing workforce development and training programs to include disadvantaged residents in the green economy? How do local organizations interact with city governments in the process of implementing green workforce development and training programs?

To answer these questions, we compared 14 different green job training programs across the U.S., conducting in-depth interviews with program staff and analyzing contents of the program materials available online. Examples of such programs are: a program that connects people who have workforce barriers to sustainability-related careers, and another large city’s workforce development program that collaborates with the city’s public housing residents and the sustainability office to work towards carbon emission goals. Using NVivo software, our analysis examined codes such as stipend, partnerships, wraparound services. With the aim of providing good practice on green jobs training initiatives, our findings could assist urban planners and public officials interested in learning how to combat climate change in ways that include disadvantaged residents in the local green economies.

Citations

- Bulkeley, H., Carmin, J., Castán Broto, V., Edwards, G. A., & Fuller, S. (2013). Climate justice and global cities: Mapping the emerging discourses. *Global Environmental Change*, 23(5), 914-925.
- Fitzgerald, J. (2020). *Greenovation: Urban leadership on climate change*. New York, NY: Oxford University Press.
- Mi, Z., Guan, D., Liu, Z., Liu, J., Vigiúí, V., Fromer, N., & Wang, Y. (2019). Cities: The core of climate change mitigation. *Journal of Cleaner Production*, 207, 582-589.
- Schlosberg, D., & Collins, L. B. (2014). From environmental to climate justice: climate change and the discourse of environmental justice. *Climate Change*, 359-374.
- United Nations. (2016). *Paris Agreement*. Paris: United Nations, pp.1-27.

Key Words: climate justice, green jobs, workforce development, disadvantaged residents, post-carbon economy

A NEW INSTITUTIONAL CONSTRUCTION OF SKILL

Abstract ID: 1442

Individual Paper Submission

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“The Great Resignation,” and employers’ struggles to hire and retain workers spotlighted poor working conditions in the United States. And while the pandemic may be sunsetting, climate change is only just beginning to rise, bringing even more economic restructuring. It is time for new economic thinking.

One paradigm to abandon in the transition to innovative, equitable, and sustainable futures is the “skills-mismatch” explanation for income inequality. This flawed theory suggests that impoverished workers struggle because they lack in-demand skills or the right education credentials, rather than because employer practices suppress wages or keep

quality jobs inaccessible, particularly for workers of color. Coded language for certain skills and discourses of individual responsibility enable employers to justify occupational segregation and wage suppression and to jettison their responsibility to invest in worker skills and career mobility (Wurhurst et. al., 2017; Cottom, 2017; Iskander, 2021).

As these critiques imply, skill is not simply the outcome of individual effort or applied learning. It is a contested concept that can demean and debase some workers, while holding up others' contributions. An alternative to skills-mismatch theory does not reject skill. It recognizes mediating institutions that engage employers around the evolving politics of skills by shaping its interpretation and building mutual responsibility for its development.

We present research in support of a new institutional construction of skill, meaning that institutions may influence and support skill reinterpretation for the benefit and inclusion of frontline workers. While others (Wurhurst et. al., 2017) analyze social constructions of skill, an institutional reframing analyzes the “ecosystems and exoskeletons” surrounding firms that influence and condition workforce development (Lowe, 2022). We examine the constellation of partners supporting workforce development who foster inclusive innovation by using the ambiguity of skill to jointly (re)construct systems that uphold skill as an avenue for workforce gains and improved business and organizational strategy, particularly in light of technological change.

We feature four case studies of different aspects of a new institutional construction of skill in advanced manufacturing settings. Qualitative interviews across ecosystems of organizations, including firms, workforce intermediaries, education partners, business associations, and community organizations, show how partners influence inclusive innovation. In Buffalo, intra-regional institutional threads buttress implementation of robots that absorb “dull, dirty, and dangerous” roles, leaving higher-paying, rewarding responsibilities to people in communities experiencing the impacts of historic disinvestment. In Orlando, pathways out of low-quality hospitality and service roles and into and into family-supporting career pathways in advanced manufacturing reflect cross-sectoral institutional mechanisms. In Baton Rouge, pathways into existing career opportunities in the energy sector with an eye towards renewable energy futures exhibit cross-temporal threads. Finally, a national virtual reality training company demonstrates an enterprise-oriented approach to build clear career pathways for previously difficult-to-fill roles.

For practitioners, these cases identify important institutional mechanisms for generating and sharing resources that elevate worker priorities, but benefit firms as well, with potential for regionally-reinforcing positive returns. For theory building, these cases initiate a working understanding of the construction of institutions that influence inclusive and innovative behavior within and across firms.

Citations

- Cottom, T. M. (2017, February 22). The Coded Language of For-Profit Colleges: The Industry Refuses to Acknowledge its Success is Predicated on Inequality. *The Atlantic*.
- Iskander, N. (2021). *Does Skill Make Us Human?: Migrant Workers in 21st Century Qatar and Beyond*. Princeton: Princeton University Press.
- Lowe, N. (2022). *Putting Skill to Work: How to Create Good Jobs in Uncertain Times*. Cambridge, Massachusetts: The MIT Press.
- Warhurst, C., Tilly, C., & Gatta, M. (2017). A New Social Construction of Skill. In J. Buchanan, D. Finegold, K. Mayhew, & C. Warhurst (Eds.). *The Oxford Handbook of Skills and Training*. Oxford: Oxford University Press.

Key Words: work, skills, labor markets, jobs, businesses

AIRPORT-LINKED ECONOMIC DEVELOPMENT IN A VUCA WORLD: EVIDENCE ON DYNAMIC CHANGES IN THE BIRTH OF ENTERPRISES FROM SINGAPORE

Abstract ID: 1527

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Before the COVID-19 pandemic, cities worldwide tended to concentrate multibillion-dollar investments in hub airports as transportation nodes to manage global traffic growth and as employment subcenters to drive local economic growth. According to a series of urban location theories, the development and management of airport transportation systems were supposed to reduce system operating costs, expand intercity access to numerous resources and markets, attract speed-sensitive firms/tourists, and produce business opportunities and innovations in and around airport districts, called “Airport City,” as well as airport-connected economic zones/business centers and corridors, called “Aerotropolis.” The vision of airport-linked economic development, or the Airport City/Aerotropolis development model, has gained political priority from city leaders and policy makers in Asia and the Middle East for

global competitiveness and entrepreneurship. On the other hand, several scholars and planners have questioned the long-term sustainability of such aviation-centric economic development models in a volatility, uncertainty, complexity, and ambiguity (VUCA) world (e.g., Charles et al., 2007).

Indeed, a variety of contemporary business studies have addressed growing concerns about the significance of globally disruptive forces (e.g., financial crisis, pandemic, natural disaster, terrorism, war) in influencing the development, management, and/or performance of urban systems across sectors, including air transportation, trade and supply chain, and tourism in the presence of VUCA conditions (Gudmundsson et al., 2021; Mack et al., 2015; Uğur and Akbiyik, 2020). While public policy responses to global risk exposures appeared to vary per region, country, or city under different geopolitical circumstances and cultural norms, the nonlinearity and unforeseeability of future demand for intercity mobility/connectivity (flows and interactions) commonly necessitate proactive city leaders and strategic policy makers to take not only more “integrated” systems solutions across sectors at multiple geographic scales but also more “adaptive” planning approaches to airport-linked economic development under changeable conditions (Kwakkel et al., 2010). Nonetheless, there is still a paucity of long-term information and in-depth knowledge of the interplays between globally disruptive forces and urban business transformations for systemic and flexible investment decisions in cities with hub airports based on possible development scenarios.

To fill the information and knowledge gaps, this research attempts to provide scientific evidence on dynamic changes in the birth (and/or death) of enterprises using a case study method. More specifically, the empirical work spatiotemporally visualizes and statistically estimates binomial probability (1/0) from the ACRA business registration dataset for key industrial sectors across the island-wide commercial territories and airport-linked planning units of Singapore with the development and management of world-class transportation and land use systems, in response to a series of global risk events (or selected disruptive forces) over the last three decades (since the 1990s), covering the global financial crisis and pandemics. The uneven distribution patterns of changes in the birth and/or death of multi-scale business entities (e.g., high-tech manufacturing and advanced business services in airport-linked industrial parks and local retailers and restaurants in airport-linked major hotel districts and tourism destinations) are very likely to indicate both the effectiveness of massive airport system investment for the global competitiveness of cities and the criticalness of adaptive transportation-land use rezoning coordination (as well as flexible governmental assistance and inclusive financial support) during emergencies for the long-term sustainability of airport-linked economic development or the Airport City/Aerotropolis development model in a VUCA world.

Citations

- Charles, M. B., Barnes, P., Ryan, N., & Clayton, J. (2007). Airport futures: Towards a critique of the aerotropolis model. *Futures*, 39(9), 1009-1028.
- Gudmundsson, S. V., Cattaneo, M., & Redondi, R. (2021). Forecasting temporal world recovery in air transport markets in the presence of large economic shocks: The case of COVID-19. *Journal of Air Transport Management*, 91, 102007.
- Kwakkel, J. H., Walker, W. E., & Marchau, V. A. W. J. (2010). Adaptive airport strategic planning. *European Journal of Transport and Infrastructure Research*, 10(3) 249-273.
- Mack, O., Khare, A., Krämer, A., & Burgartz, T. (Eds.). (2015). *Managing in a VUCA World*. Springer.
- Ugur, N. G., & Akbiyik, A. (2020). Impacts of COVID-19 on global tourism industry: A cross-regional comparison. *Tourism Management Perspectives*, 36, 100744.

Key Words: Airport Investment, Economic Development, Adaptive Transportation-Land Use Planning, Sustainability, VUCA World

URBAN RESTRUCTURING OF TOKYO AND MONETARY EASING AS DEVELOPMENTAL STATE INTERVENTIONS

Abstract ID: 1611

Individual Paper Submission

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Tokyo faces a looming condition of “post-growth” (Hirayama & Izuhara, 2018) marked by decades-long deflation, population aging, growing care gaps, and nation-wide population decline projected from the current 126 million to 88 million by 2065. Despite the inevitable shrinkage, however, Japan’s developmental state continues to (re)develop central Tokyo where over 300 urban revitalization projects are underway. While the developmental state has historically marshalled land development and Tokyo’s world city making as a vital engine of national economic growth (Machimura, 1992), urban restructuring of central Tokyo has gained a heightened significance for the developmental state in the time of post-growth.

What planning and policy tools has the developmental state mobilized to intensify massive spatial restructuring of central Tokyo as a way to overcome limits to growth? What economic growth imaginaries are produced and

materialized by the urban restructuring processes? This paper examines these questions with due consideration to the role of Bank of Japan's unconventional monetary easing (e.g. quantitative and qualitative easing) in economic development strategies. Growing impacts of monetary easing warrant a critical scrutiny for understanding the role of public finance in relation to financialization and urban redevelopment (August et al, 2021). To answer these questions, this paper draws on qualitative data from policy reports and semi-structured interviews with Tokyo's development experts and policy planners. This paper also analyzes statistical data from the Bank of Japan and the Japan's Association for Real Estate Securitization.

The paper argues that unconventional monetary easing, coupled with a special economic zone program and fiscal investments in infrastructure renewals for Tokyo Olympics & Paralympics 2020, has created a condition for speculative urbanization in central Tokyo. The monetary base expanded considerably from JPY109 trillion in 2010 to JPY540 trillion (about \$5 trillion) in 2020, while the ratio of real estate investment relative to the GDP reached the highest in the last 40 years. Numerous world city projects are remaking Tokyo in the name of efficient circulation to attract global capital and tourists. Planners envision that increasing the speed of people's flow across places, despite depopulation, would break the condition of economic stasis. Under the context of abundant money supply, regional banks in Tokyo's peripheries are increasing their translocal investments in Japan's Real Estate Investment Trusts (REITs) whose assets tend to concentrate in central Tokyo. This paper demonstrates uneven effects of monetary easing that has deepened socio-spatial inequalities between central Tokyo and its peripheries. This is a challenge that planners have to confront in responding to dramatic population changes, as Japan's post-growth condition is not an exception but prefigures systemic crises and peak populations among other economies where massive monetary easing has become integral to government's economic strategies.

Citations

- August, M., Cohen, D., Danyluk, M., Kass, A., Ponder, C. S., & Rosenman, E. (2021). Reimagining geographies of public finance. *Progress in Human Geography*.
- Hirayama, Y., & Izuhara, M. (2018). *Housing in post-growth society: Japan on the edge of social transition*. New York: Routledge.
- Weber, R. (2015). *From boom to bubble: How Finance Built the New Chicago*. Chicago: University of Chicago Press.
- Machimura, T. (1992). The urban restructuring process in Tokyo in the 1980s: Transforming Tokyo into a world city. *International Journal of Urban and Regional Research*, 16(1), 114-128.

Key Words: Monetary easing, Urban revitalization, Post-growth, Tokyo, Developmental state

RETAIL CLOSURES IN CAMPUS-ADJACENT NEIGHBORHOODS FOLLOWING THE COVID-19 PANDEMIC

Abstract ID: 1622

Individual Paper Submission

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The COVID-19 pandemic has had many significant impacts on the global, national, and local economies. Current estimates suggest that upwards of 100,000 retail businesses and outlets have closed as a result of the pandemic. In this presentation, we present findings from our study of the impact of COVID-19 related college and university campus shutdowns on area retail. Given that student-oriented retail has grown as a strategy for campus-adjacent commercial development, we are hypothesizing that the sudden shutdown of many college and university campuses in March 2020, and subsequent delayed or hybrid campus reopening in the subsequent academic terms, presented student- and campus-dependent retail with a higher-probability of closure than their non-campus adjacent counterparts. Using data on campus closures and reopenings from Ann Arbor, Michigan and New Haven, Connecticut, and pre- and post-pandemic retail data derived from Yelp! we will present both exploratory and results from logistic regression analysis to identify the relationship between campus-adjacent retail and closures. Using a spatial buffer to distinguish between campus adjacent businesses and all other businesses, our preliminary exploratory analysis shows higher closure rates closer to campuses. This research supports the premise that college and university campus-facing retail is highly sensitive to campus planning, operations, and growth. The abrupt closures and shifts in modes of instruction may hold lasting consequences on university-driven commercial development, campus adjacent revitalization efforts and the attractiveness of campus-adjacent neighborhoods for off-campus housing and student living.

Citations

- Coulson, J., Roberts, P., & Taylor, I. (2015). The future of the campus: Architecture and master planning trends. *Perspectives: Policy and Practice in Higher Education*, 19(4), 116–121. <https://doi.org/10.1080/13603108.2015.1026421>
- Dyason, D., & Kleyhans, E. (2021). The displacement of retail spending by students in host cities owing to Covid-19: A case study. *Tydskrif Vir Geesteswetenskappe*, 61(1), 350–366. <https://doi.org/10.17159/2224-7912/2021/v61n1a20>
- Revington, N., Moos, M., Henry, J., & Haider, R. (2020). The urban dormitory: Planning, studentification, and the construction of an off-campus student housing market. *International Planning Studies*, 25(2), 189–205. <https://doi.org/10.1080/13563475.2018.1552565>
- Smith, D. P., Sage, J., & Balsdon, S. (2014). The geographies of studentification: ‘Here, there and everywhere’? *Geography*, 99(3), 116–127. <https://doi.org/10.1080/00167487.2014.12094405>
- Wiewel, W., Kunst, K., & Dubicki, R. (2007). *University Real Estate Development: Campus Expansion in Urban Settings* (Working Paper WPO7WW1). Lincoln Institute of Land Policy.

Key Words: COVID-19, Campus Planning, Retail, Economic Development, Community Development

IMPACTS OF PROXIMITY TO FIXED-GUIDEWAY TRANSIT SYSTEMS ON THE LONGEVITY OF BUSINESSES IN THE CENSUS MOUNTAIN DIVISION

Abstract ID: 1636

Individual Paper Submission

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In the U.S., approximately twenty percent of new businesses have experienced business failure within one year since 2005. Given that the physical location of a business establishment represents the extent of its accessibility and performance to deliver products or services to customers, it is important to identify factors affecting whether, and if so, how much business establishments can fail in the market over time.

Emerging in ecology, the term resilience has been widely accepted by urban planners in a variety of contexts, primarily in climate change and natural disaster planning research. From an urban economic perspective, the concept of economic resilience can be measured by changes in the duration of businesses in response to their individual characteristics and their surroundings. Nevertheless, due to limited availability of time-series business microdata, there have been only a few studies that examines factors affecting the probability of business survival. Particularly, almost no studies on the impacts of fixed guideway transit development on change in the probability of business survival exist due to a lack of conceptualization and an operational research framework for measuring business survival as a measure of economic resilience (Martin & Sunley, 2015).

To achieve this research goal, this study explores the effects of proximity to fixed-guideway transit systems on the duration of business establishments in three urban areas within the Census Mountain Division as case studies. How do fixed-guideway transit routes affect the longevity of new and existing businesses as a proxy measure for the extent of economic resilience?

Using survival data analysis techniques, this study estimates the likelihoods of each business establishments being survived longer depending on proximity to its nearest fixed-guideway transit stations--that is, a light rail transit station. This study assumes that the estimated hazard ratios of business failure as an event can be determined as a function of the distance from their nearest fixed-guideway transit station, showing that business establishments located close to fixed-guideway transit stations are more likely to survive longer and expansion of high-quality fixed-guideway transit systems can play a significant role in strengthening the overall economic resilience. Using 0.5 million ReferenceUSA business microdata for three urban areas--Salt Lake-West Valley, Utah, Denver-Aurora, Colorado, and Phoenix-Mesa, Arizona, this study develops a set of survival data models to test impacts of transportation infrastructure on increasing the duration of business establishments over different time periods and to different business cohorts.

The multilevel cohort-based survival data regression model results show that business establishments located near the fixed-guideway transit station are more likely to have the lower hazard ratio of business failure, meaning that the probability of a business establishment being failed in the market can be determined as a function of distance from the fixed-guideway transit station. Frailty scores of business closure estimated from the Cox Proportional Hazard Ratio regression models suggests that Census block groups close to the LRT stations tend to have lower hazard ratios of business failure across all business cohorts. Prediction of frailty scores using the survival data regression models can help planners and decision-makers develop more targeted policy development for sustainable economic development and establish an in-depth understanding of the feasibility of transit-oriented development in terms of business survival.

Citations

- Martin, R., & Sunley, P. (2015). On the notion of regional economic resilience: Conceptualization and explanation. *Journal of Economic Geography*, 15(1), 1–42.
- Renski, H. (2008). New firm entry, survival, and growth in the United States: A comparison of urban, suburban, and rural areas. *Journal of the American Planning Association*, 75(1), 60–77.
- Renski, H. (2011). External economies of localization, urbanization and industrial diversity and new firm survival. *Papers in Regional Science*, 90(3), 473–502.
- Baumöhl, E., Iwasaki, I., & Kocenda, E. (2019). Institutions and determinants of firm survival in European emerging markets. *Journal of Corporate Finance*, 58, 431–453.
- Nelson, A. C., Stoker, P., & Hibberd, R. (2019). Light rail transit and economic recovery: A case of resilience or transformation? *Research in Transportation Economics*, 74, 2–9.

Key Words: business survival, light rail transit, survival data analysis, Census mountain division, economic resilience

MAKING A MOVE: PANDEMIC PLACE-MAKING, TALENT ATTRACTION AND ECONOMIC DEVELOPMENT

Abstract ID: 1679

Individual Paper Submission

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Prior to the global pandemic, there was consensus that city-regions play a key role in anchoring and coordinating the global economy. Cities – especially larger ones, but also their mid-sized counterparts – were viewed as important sites for the generation of new ideas, products, and firms. Moreover, firms in newer tech-based industries have tended to favour urban locations to access talent, knowledge infrastructure, and other critical amenities and resources. The advent of the pandemic has led to debate over the future of cities as the primary engines of economic growth, innovation and development (Bailey et al. 2020; Nathan 2020; Florida et al. 2021). Driving this point home, several prominent tech companies, including Shopify and Facebook, announced very early in the pandemic that they would be shift a high proportion of their workforce to remote work. And indeed, several analysts suggested that a high proportion of work could be conducted off-site (Dingel and Neiman 2020).

While the debate about the locational choices and organizational practices of firms remains an open question, individual jurisdictions were not passive agents standing on the sidelines as firms made decisions regarding their workforce. Indeed, economic development offices across the United States and elsewhere began to develop strategies for attracting a presumed group of suddenly mobile workers. One widely reported upon platform, MakeMyMove.com, became a clearinghouse for communities that had established such programs. The landing page for the MakeMyMove website announces, “Get paid to do what you love, in a place that you love. Communities across the U.S. are paying remote workers to relocate.” The onset of the pandemic accelerated an already existing trend whereby second-tier cities and smaller communities introduced incentive packages to attract highly skilled workers to their communities. Some places, such as Tulsa, Oklahoma, were early adopters of this strategy: Tulsa Remote was designed with a \$10,000 cash incentive to assist remote workers in moving to and buying a home in their community. The Tulsa campaign is widely acknowledged as one of the first campaigns to specifically attract remote workers. However, since March 2020, the number of jurisdictions using this particular strategy has multiplied, as many office-based workers found themselves working from home with no clear idea of if – and when – they may return to their office. Due to the relative novelty of such programs, very little is known about the contours of these programs and how cities positioned themselves to attract footloose talent.

In this paper, we examine the incentive relocation programs for 63 jurisdictions listed on MakeMyMove.com. The website features structured details about the communities, their incentive packages, and eligibility criteria. We systematically classified and coded the information presented, including key amenities and lifestyle features. We then analyzed the content of the website to glean how communities positioned themselves, through the use of financial and other incentives, cultural amenities and other place-based assets. Overall, our analysis provides a window into the contemporary landscape of incentives aimed at a highly skilled, remote workforce rather than firms. It is instructive regarding the types of incentives used and how jurisdictions use tropes related to the ‘creative class’ imaginary. We also frame our findings in terms of the much longer debate in economic development planning regarding talent attraction, noting that this current round of economic development practices build on traditions developed over two decades.

Citations

- Nathan M, Overman H. 2020. Will coronavirus cause a big city exodus? *Environment and Planning B: Urban Analytics and City Science*. 47(9):1537-1542. doi:10.1177/2399808320971910

- Florida R, Rodríguez-Pose A, Storper M. 2021. Cities in a post-COVID world. *Urban Studies*. doi:10.1177/00420980211018072
- Dingel, J.I., and B. Neiman. 2020. How many jobs can be done at home? NBER Working Paper, no. 26948. Cambridge, MA: National Bureau of Economic Research.
- Bailey, D.; Clark, J., Colombelli, A., et al. (2020): Regions in a time of pandemic, *Regional Studies*, 54 (9), pp.1163–1174; DOI: 10.1080/00343404.2020.1798611.

Key Words: talent attraction, place branding, incentives, mobility

MUNICIPAL ARTS AND CULTURAL PLANS: MOTIVATIONS, ACTORS, AND IMPACTS

Abstract ID: 1720

Individual Paper Submission

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Arts and cultural planning, a sub-field of city and regional planning, has become an increasingly adopted component of economic and community development strategies. Arts and cultural programming and investments contribute to placemaking, neighborhood redevelopment, downtown revitalization, healthy communities, and historic preservation, although critics point out that many of the positive economic impacts of such efforts support economic growth for the elite rather than an expanded set of constituencies and communities. In many cities in the US, these efforts are guided by municipal-level arts and cultural planning documents, which are often generated outside of traditional planning offices and departments. Previous research has explored how these municipal arts and cultural plans address issues of diversity, equity, and inclusion, draw upon universities and colleges as arts anchor institutions, and plan for placemaking and placekeeping. Yet we still know little about the motivations, processes, actors, and impacts behind the creation of these plans. In this study, we investigate why and how communities create arts and cultural plans; how different stakeholders view the importance of these plans; how they are connected to general planning practice; their long-term contributions and concerns; and barriers to implementation.

In this paper, we report the results of a national electronic survey conducted in spring 2022 of US city planners and arts and cultural planners in 64 cities with arts and cultural plans for a total population of 128 practitioners. Our survey asks about the roles of different actors in arts and cultural planning processes; how different local government actors use the plan; how well the plan aligns with actual arts and cultural activities; and to what extent and in what ways the plan has been implemented (and barriers to implementation). We hypothesize that arts and cultural plans are on the periphery of more traditional planning practices and that priorities differ between general planning departments and those departments or bodies that conduct arts and cultural planning. We expect these thematic or topical plans to be less well-utilized by general planners given that they tend to have more of a marketing philosophy and are less connected to the master, general, or comprehensive plans that guide overall city growth and development. However, we think that there is great potential for arts and cultural planning and general planning to align to address economic, equity, and cultural goals and for arts and cultural plans to be a more robust tool for cities and communities, just as parks and recreation plans or transportation plans may align with or act as components of a comprehensive plan. We expect the results of this applied research to contribute to practical knowledge to improve collaborations between sectors as well as contribute to a better theoretical understanding of the role of arts and cultural planning in the planning field at large. We also hope this research will contribute to scholarly debates about the nature of plan implementation.

Citations

- Loh, Carolyn G., Amanda Ashley, Rose Kim, Leslie Durham, and Karen Bubb. "Placemaking in Practice: Municipal Arts and Cultural Plans' Approaches to Placemaking and Creative Placemaking." (in press) *Journal of Planning Education and Research*.
- Loh, Carolyn G., Amanda J. Ashley, Karen Bubb, and Leslie Durham. (2021). "Our Diversity is our Strength: Explaining Diversity, Equity, and Inclusion Emphasis in Municipal Arts and Cultural Plans." *Journal of the American Planning Association*. DOI: 10.1080/01944363.2021.1936127.
- Ashley, Amanda J., Carolyn G. Loh, Karen Bubb, and Leslie Durham. (2021) "Diversity, Equity, and Inclusion Practices in Arts and Cultural Planning." *Journal of Urban Affairs*. <https://doi.org/10.1080/07352166.2020.1834405>.
- Ashley, A. J. (2015). Beyond the aesthetic: The historical pursuit of local arts economic development. *Journal of Planning History*, 14(1), 38-61.
- Loh, Carolyn. (2019). "Placemaking and Implementation: Revisiting the Performance Principle." *Land Use Policy* 81, 68-75.

Key Words: arts and culture, economic development, creative economy, implementation

DOES TECHNOLOGICAL GROWTH-INDUCED MIGRATION LEAD TO INCOME CONVERGENCE? THE CASE OF INDIA'S EARLY 2000S TELECOM BOOM

Abstract ID: 1771

Individual Paper Submission

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Does the growth of virtual communication technologies enhance or diminish the pull of cities for migrants? Do changes in migration patterns following technological shocks influence income convergence across regions? Social scientists, in particular urban economists and economic geographers, have been asking these questions since the 1990s (Gaspar and Glaeser, 1998, Moretti, 2012, Storper and Venables, 2004). We address these issues in this paper by studying the impact of mobile phone infrastructure expansion or telecom expansion on internal migration in India following the 2001 auction that allocated licenses to mobile phone service providers, or telecom operators, bidding for the 1800 MHz band of spectrum, and explore the implications of technology-induced mobility for income convergence across urban areas of India. We demonstrate that India's telecom expansion during the early 2000s increased net rural to urban migration by 13 million, out of which 4 million moved for employment. Next, we find that the wealthiest 20% of Indian cities received the most migrants, and hence, felt the greatest impact of the resulting labor supply shock. This should have led to income convergence, *ceteris paribus*. However, we find that telecom growth-induced mobility increased the inter-urban nominal consumption and wage dispersion by 0.02 standard deviation points. We argue that skill-based sorting of migrants could partly explain the migration-induced income divergence. We find that rural residents with STEM education were 0.7 percentage points more likely to move to urban areas than those without STEM education, because of the telecom shock, even though both groups earned a similar migration premium of almost 50%. We speculate that this skill-based sorting occurred due to highly skilled individuals having more access to mobile phones, a telecom-growth induced change in the industry mix, and the relocation of firms employing low-skilled labor from urban to rural areas. More broadly, our findings indicate that technological change can influence the structure of urban economies, the pace of urbanization, and the types of migrants drawn to cities, which has implications for urban housing policies and economic development.

Citations

- Gaspar, J., & Glaeser, E. L. (1998). Information technology and the future of cities. *Journal of urban economics*, 43(1), 136-156.
- Moretti, E. (2012). *The new geography of jobs*. Houghton Mifflin Harcourt.
- Storper, M., & Venables, A. J. (2004). Buzz: face-to-face contact and the urban economy. *Journal of economic geography*, 4(4), 351-370.

Key Words: Migration, Technology, Convergence, Sorting, India

ARE POLICIES LOOKING FOR PERSISTENTLY HIGH-GROWING FIRMS FUTILE? : THE VARIANCE IN THE GROWTH PATTERNS AMONG SMALL- AND MEDIUM-SIZED HIGH-GROWING FIRMS IN SOUTH KOREA

Abstract ID: 1860

Individual Paper Submission

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There is an ongoing fascination with high-growing firms in the public domain. Thus, many policy initiatives or policy-related studies have strived to identify firms that sustain high-growth for a stretched period of time. Existing empirical studies, however, have consistently found that high-growth firms (henceforth HGFs) are short-lived one-hit wonders (Holzl, 2013; Coad et al, 2014). This is more likely so for small- and medium-sized enterprises (SMEs) because of their limited internal resources to repeat the high-growth within a short period of time. However, this aspect has been less discussed so far.

To fill the chasm, this research explores different growth patterns of high-growing SMEs. More specifically, it looks at the annual growth rates of HGFs after drawing HGFs by using the OECD definition. While there is no concrete agreement made on how to define high growth firms, the OECD definition is the one that has been commonly used both in policy and research circles: 'all enterprises with average annualised growth greater than 20% per annum, over a three-year period, and with ten or more employees at the beginning of the observation period (Eurostat-OECD, 2008, p 61)'. It measures firm growth by taking the mean growth rate, or size difference between the starting year and the ending year.[1] Therefore, it omits the naturally occurring ups and downs of firm growth within the three-year

observation period.

Building on the OECD definition, this research will perform another level of analysis to complement what we currently overlook: the annual growth rate of HGFs within the three-year period. In doing so, this research will use the small and medium-sized firm data for eight major cities in South Korea between 2017 and 2020.

The results show that even during a three-year observation period, HGFs exhibited different growth patterns which are associated with firm characteristics. Most micro-HGFs achieve only one-time sharp growth (more than 72.8% at once, One-time HGFs). HGFs that are bigger and more mature show two times of high-growth during the observation period (Two-times HGFs). More than 80% of HGFs are One-time HGFs while Two-times HGFs are only 12%. Lastly, firms that sustain their high-growth for three consecutive years (Three-times HGFs) accounted only for approximately one percent.

It is revealing that, unlike the policy preference, most SMEs cannot sustain their high-growth in a consecutive manner even for three years. A large proportion of SMEs can achieve high-growth only once but their growth rate is high enough to be equalized with the rate of 20 % annual growth for three years. These results resonate with the existing empirical studies arguing that HGFs are short-lived one-hit wonders. On the other hand, it debunks the relevance of the policy direction that trying to target persistent high-growing firms. This policy preference might be misled by the tiny minority cases of exemplary HGFs such as Apple, Google, and Amazon. If most HGFs can sustain their high-growth only for such a short period, then the HGF related policies aiming to find sustainable growing firms, particularly in the context of SMEs, should be reoriented. This research concludes by discussing some alternative policy directions.

[1] The Eurostat-OECD manual (2008) states that ‘It is sufficient to consider only the population of active enterprises reaching the employee threshold (Nt) in year xx-3 and to measure the number of employees in year xx’ (p61).

Citations

- Coad A, Daunfeldt S, Johansson D, and Wennberg K (2014) Whom do high-growth firms hire? *Industrial and Corporate Change* 23(4): 293–327.
- Eurostat-OECD (2008) Manual on Business Demography Statistics. European Commission.
- Holzl, W (2014) Persistence, survival, and growth: A closer look at 20 years of fast-growing firms in Austria. *Industrial and Corporate Change*, 23(1), 199-231

Key Words: small-and medium sized high-growth firms, micro-high-growth firms, growth patterns of firms, policies for firm growth, South Korea

“CITIES TOO BUSY TO HATE”: COMMUNITY ECONOMIC DEVELOPMENT THROUGH A DIVERSITY IDEOLOGY LENS

Abstract ID: 1875

Individual Paper Submission

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In metropolitan economies across the U.S., racial and economic residential segregation, fragmented networks of social capital and cohesion, elevated housing costs, and stagnant wages contribute to a substantial and widening racial wealth gap that burdens Black and Latinx individuals, families, and communities (Bhutta et al., 2020). Local stakeholders often portray aggregate economic growth as a panacea that will alleviate economic inequalities, address social problems, and provide widespread opportunity — justifying business attraction strategies instead of investments in communities (Kantor et al., 1997). Displacement fueled by tech-sector fueled growth will disproportionately affect marginalized communities (Parilla & Liu, 2018; Zandiatashbar & Kayanan 2019), and the absence of discussion centering Black and Latinx workers in local economy implies acceptance of this consequence.

In 2017, Amazon released a request for proposal (RFP) for its new second headquarters. They received responses from entities such as municipal and state governments, chambers of commerce, and business alliances who each justified why their jurisdiction was an ideal location for Amazon’s HQ2, its estimated \$5 billion investment, and the approximately 50,000 jobs with an average salary of \$100,000. The RFP outlines Amazon’s preferences and criteria, such as a population of over one million people; a downtown project site; a suitable labor force; fiber internet infrastructure; a stable business climate; and transportation connectivity. Additionally, the RFP lists “Cultural Community Fit” as one of eight key decision drivers. Within this category, Amazon states it values the “presence and support of a diverse population”. The RFP, however, does not elaborate on its definition of “a diverse population” or give indications of how cities might respond to the prompt. Without guidance on how to respond to this element,

competition for Amazon's HQ2 presents an opportunity to observe how local stakeholders define and portray diversity in their firm recruitment.

This project uses diversity ideology as a framework to examine how proposals for Amazon's second headquarters (HQ2) reflect applicants' beliefs and value systems around racial and ethnic diversity, equity, and inclusion. In our sample of 70 proposals, respondents layered four primary tactics: disregard, limited engagement, acknowledgement without culpability, and value claiming. Prominent approaches included avoidance of any discussion of diversity, objectification of racial and ethnic minority populations as an economic or cultural input, and the assertion a racially and ethnically diverse workforce is an attainable goal while utilizing stereotypes. Each of these approaches reflects different ways racial and ethnic minority populations remain marginalized, even when firms actively solicit information on their presence and support.

Equitable economic development encompasses the capabilities of individuals to find meaningful careers, achieve mobility, avoid displacement, and enjoy high-quality of life. Atlanta, Georgia's proposal dismissed concerns of racial injustice by referencing its historic label as a "city too busy to hate". Many proposals echoed this ethos: productive, progressive, international metropolises where diversity is present but unobtrusive, and where prejudice and injustices are artifacts of the past. Our analysis suggests persistent support for the creation and reinforcement of a hierarchy using a growth model, which does not value the individual employee, let alone historically marginalized populations.

Our coding framework can be applied broadly to economic development initiatives, plans, and policies. Local policy makers involved in local economic development can reflect on current practices and refocus goals to include equity and justice principles, centering the experiences of marginalized groups as a central tenet of success, instead of narrowly focusing on growth as an isolated goal (Fainstein 2010).

Citations

- Bhutta, N., Chang, A. C., Dettling, L. J., & Hsu, J. W. (2020, September 28). Disparities in Wealth by Race and Ethnicity in the 2019 Survey of Consumer Finances. Board of Governors of the Federal Reserve System. <https://www.federalreserve.gov/econres/notes/feds-notes/dispairities-in-wealth-by-race-and-ethnicity-in-the-2019-survey-of-consumer-finances-20200928.htm>
- Fainstein, S. S. (2010). *The Just City* (Davis Library). Ithaca?: Cornell University Press. <https://catalog.lib.unc.edu/catalog/UNCb6410878>
- Kantor, P., Savitch, H. V., & Haddock, S. V. (1997). The Political Economy of Urban Regimes: A Comparative Perspective. *Urban Affairs Review*, 32(3), 348–377. <https://doi.org/10.1177/107808749703200303>
- Parilla, J., & Liu, S. (2018). Examining the local value of economic development incentives. Washington, DC: Brookings Institution. https://www.brookings.edu/wp-content/uploads/2018/02/Report_examining-the-local-value-of-economic-development-incentives_brookings-metro_march-2018.pdf
- Zandiatashbar, A., & Kayanan, C. M. (2020). Negative consequences of innovation-igniting urban developments: Empirical evidence from three US cities. *Urban Planning*, 5(3), 378.

Key Words: diversity ideology, community development, economic development, equitable development

CAN YOUR ZIP CODE HELP YOU FIND A JOB? AN EXPLORATION OF NEIGHBORHOOD FACTORS AND (RE)EMPLOYMENT

Abstract ID: 1887

Individual Paper Submission

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This study uses a unique micro-dataset of unemployment insurance (UI) program participants to study how personal and neighborhood factors influence one's chances of returning to employment. We draw upon the economic mobility, occupational change, and workforce development literatures to develop a conceptual framework for understanding how personal, spatial, social, and institutional factors shape one's employment prospects. Building upon this framework, we estimate a multi-level model where personal attributes combine with neighborhood contextual factors to determine the likelihood of (re)employment using data from the Colorado unemployment program tracking system for the pre-COVID years of 2017 through 2019.

Although purely correlative, our analysis reveals several interesting insights. First, and not surprisingly, personal attributes are the dominant predictors of (re)employment. Educational attainment has the largest positive impact, with age, race (black), ethnicity (Hispanic), and gender (female) also having positive and significant effects. In contrast, displaced homemakers, low-income individuals, and persons with disabilities are at a profound disadvantage in finding employment. Participants in UI-related training programs also have a higher chance of (re)employment, as are those living in areas with higher transit use. However, we cannot say for certain whether it is

superior transit access that helps them secure employment, or some related factor. Place-bound social influences also shape one's ability to capitalize upon meaningful job opportunities. Neighborhood wealth is positive and significant to (re)employment, although the education level of one's neighborhood is not. Likewise, while overall area poverty rates are insignificant, high poverty among one's own racial group lowers chances of finding employment – providing possible evidence of the importance of social networks within one's likely peer group over general area characteristics.

Citations

- Galster, G. C. (2012). The mechanism (s) of neighbourhood effects: Theory, evidence, and policy implications. In *Neighbourhood effects research: New perspectives* (pp. 23–56). Springer.
- George Galster & Patrick Sharkey. (2017). Spatial Foundations of Inequality: A Conceptual Model and Empirical Overview. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 3(2), 1. <https://doi.org/10.7758/rsf.2017.3.2.01>
- Knaap, E. (2017). The Cartography of Opportunity: Spatial Data Science for Equitable Urban Policy. *Housing Policy Debate*, 27(6), 913–940. <https://doi.org/10.1080/10511482.2017.1331930>
- Gabe, T., Abel, J. R., & Florida, R. (2019). Can Workers in Low-End Occupations Climb the Job Ladder? *Economic Development Quarterly*, 33(2), 92–106. <https://doi.org/10.1177/0891242419838324>

Key Words: neighborhood effects, (re)employment, spatial mismatch, economic mobility

WHEN MATURE CLUSTERS INNOVATE: TRACING HIGH POINT'S TRANSITION FROM SEASONAL FURNISHING RETAIL TO AN EMERGENT DESIGN-HUB

Abstract ID: 1901

Individual Paper Submission

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How and under conditions do mature clusters transform and remake themselves? What are the mechanisms through which innovation occurs, especially in places where the inertia of old identities and prominent historical legacies can create resistance to change and promote status quo?

The creation of extra-local, bridging ties, some argue, can help mature clusters overcome the 'paradox of embeddedness' (Uzzi 1997, Granovetter 1983; Grabher 2005; Stolarick and Florida, 2006). Others argue that changes within local institutional environments can shape a cluster's capacity for adaptation and dynamism (Hassink 2010). Yet others point to the importance of entrepreneurial intermediaries that can support innovation and new knowledge creation (Rantisi 2014, Bathelt and Cohendet 2014). Although all agree on the significance of linkages to cross-cutting knowledge networks for innovation in mature industry clusters, the mechanisms and conditions under which they are created remain insufficiently explored.

In this paper we use qualitative methods and network analysis to unpack the institutional processes and interlocking networks through which High Point's traditional furniture cluster is transforming from a seasonal showroom-space anchored by its famed furniture Market to a year-round 'design-hub' that is recombining existing and new resources in innovative ways.

North Carolina's furniture cluster, despite maintaining national economic relevance, has shed nearly half its employment base in recent decades, largely due to offshoring (Florida 2012). Despite this decline, data show that pre-production services—furniture design, engineering and all manner of other design services—have gained in employment with the greatest wage increases across all segments (Brun et al. 2013; Debbage, Walcott 2010).

This rise of design that is evident in the date, is manifest in the rise of new institutions in High Point, most notably, Congdon Yards, a mixed-use campus housing offices and studios, an event center, a 20,000 square foot design center that opened in 2019, and The Generator, a 6,000 square foot pay-per-use prototyping facility housing millions of dollars of state-of-the-art furniture and other design equipment. Tenants range from design firms, the city's chamber of commerce, to home-furnishings materials consultancies and a textiles firm, leading to new synergies between textiles and furniture via design. Despite only opening to the public in 2021, several local home-furnishings related SMEs, as well as design firms, have already used The Generator for batch production. Through a collaboration between The Generator and a local community college, the Chamber is seeking to launch a new CNC certification program. Congdon Yards and The Generator are managed by the city's chamber of commerce and both facilities already under expansion.

Through 17 semi-structured interviews with public and nonprofit organizations, industry associations, and manufacturers in High Point, and a network analysis of boards of 26 local associations spanning fourteen civic

organizations, two economic development organizations, and ten industry-related associations in High Point, representing a cumulative 650 seats on local boards, we show how and why the Chamber of Commerce, a relatively weak body for decades, succeeded in fostering major innovations in the cluster. We argue that underneath the story of the rise of design in High Point is the story of land development. With the market under constant threat from other furniture markets, the Chamber and a group of local CEOs combined forces to change City Council politics and through them, zoning. This created new downtown redevelopment organizations which in turn facilitated access to the design community—as drivers of mixed-use spaces. Through them, furniture and textiles are becoming spatially and structurally reintegrated in new ways.

Citations

- Brun, Lukas. Buciuni, Giulio. Frederick, Stacey. Gereffi, Gary. Xiao, Yanyun. (2013). The Furniture Value Chain in North Carolina. Duke Global Value Chains Center.
- Debbage, Keith. Walcott, Susan. (2010). Asset Mapping The North Carolina Furniture Industry Cluster. UNC Greensboro.
- Rantisi, M. (2014). Exploring the role of industry intermediaries in the construction of ‘Local Pipelines’: The case of the Montreal Fur Garment Cluster and the rise of Fur–Fashion connections. *Journal of Economic Geography*. 955-971.
- Granovetter M. (1983) The strength of weak ties: a network theory revisited. *Sociological Theory* 1, 201–233.
- Schlichtman, J. John. (2020). Big City Problems: Private Equity Investment, Transnational Users, and Local Mobilization in the Small City. *City & Community*, 19:1.

Key Words: High Point, Innovation, Mature industries, Design and recombination, Interlocking networks

UNIVERSITIES AND HUMAN CAPITAL DEVELOPMENT IN THE UNITED STATES: REGIONAL PATTERNS AND IMPACTS

Abstract ID: 1930

Individual Paper Submission

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Public colleges and universities play an important role in the formation of human capital through the attraction, training, and often local-regional retention of students. Much of the existing research on the subject examines one stage in this process, one type of institution, and/or one type of regional environment. While such studies can generate important insights, taking too narrow a perspective on one or more of these elements can lead to distortions about the impact of institutions of higher learning on the regions they serve. This paper adds to the literature by (i) widening the temporal frame of analysis to include the student's journey from hometown to campus and then to additional locations 10 years after graduation, and (ii) by deepening the cross-sectional view of a region's layered institutions to include the many different types of public higher education and the variety of human capital they support. Data from 64 institutions spread across 10 labor market regions under the State University of New York show how institution type corresponds to 1) the geography of populations served, 2) the nature of skills and training supplied, and 3) local/regional retention a decade later. The empirical study also identifies the extent to which factors such as regional variation, degree level, and students' program of study associate with human capital development (e.g., wages, retention) and therefore contributes to a more nuanced understanding of the broader relationship between institutions of higher learning and local/regional human capital formation. In particular, this study illustrates the need to consider higher education's role in multiple stages of regional human capital development, since student inflows at one stage correspond to differential patterns of human capital outflows at another. In the literature, student mobility patterns are usually analyzed through the lens of research institutions and are typically concerned with either student attraction or graduate retention. Consistent with this literature, we find institutional prestige and desirable locations do draw students from farther away. Specialized programs and curricula, often corresponding to the nature of the institution itself (e.g., liberal arts colleges) are also important (potential) human capital attractors. Yet colleges and universities that attract students from outside their region also exhibit lower overall retention rates. This is a finding that previous studies, focused on a single stage in the human capital development process, have not explicitly captured. This raises important questions regarding the relative importance of local versus non-local students on the region—while migrant students provide much-needed revenue and short-term local impacts, retention stretches that impact over a long term with regional spillovers that are difficult to measure. Furthermore, because graduate retention rates are lower than the proportion of students that originate from New York across most institution types, the public state system is generally facilitating outflows of human capital or a broader impact that is difficult to measure. The system trains and then releases human capital into the national and global economy with very limited tracking of this labor. While these net outflows (local-to-global pipelines) do represent regional and state losses in human capital, they also likely represent important social and economic linkages to other parts of the country and the world. The extent to which these linkages feed each region's development is an important area for future research on universities and scalable networks. As a result, this multi-

stage, multi-institution study opens the door to several new research directions and emphasizes the need for collecting comparable human capital data across systems and regions that consider the relative impact of smaller and student-oriented public institutions on localized human capital development over time vis-à-vis large public research institutions.

Citations

- Lawton-Smith, H. & Bagchi-Sen, S. (2012). The research university, entrepreneurship, and development: Research propositions and current evidence. *Entrepreneurship and Regional Development* 24(5-6), 383-404. DOI: 10.1080/08985626.2011.592547
- Faggian, A., Rajbhandari, I., & Dotzel, K.R. (2017). The interregional migration of human capital and its regional consequences: a review. *Regional Studies* 51(1), 128-143. DOI: 10.1080/00343404.2016.1263388
- Bagchi-Sen, S. & Lawton-Smith, H. (2012). The role of the university as an agent of regional economic development. *Geography Compass* 6/7, 439-453. DOI: 10.1111/j.1749-8198.2012.00497.x
- Winters, John V. (2011). Human capital and population growth in nonmetropolitan US counties: The importance of college student migration. *Economic Development Quarterly* 25(4), 353-365. DOI: 10.1177/0891242411418221
- Benneworth, P. & Hospers, G.-J. (2007). The new economic geography of old industrial regions: universities as global-local pipelines. *Environment and Planning C* 25(6), 779-802.

Key Words: universities, human capital, students, regional development

INTEGRATION OR PRECARIZATION? REFUGEE LABOR IN A SEGMENTED LABOR MARKET IN GERMANY

Abstract ID: 1976

Individual Paper Submission

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A big challenge for EU countries receiving a large number of asylum seekers and refugees after 2015 has been their inclusion in the labor market. Germany, which has received almost a half of the asylum seekers arriving in Europe, has taken the lead in these inclusion efforts, where governments at federal, state and municipal levels have invested significant resources to introduce a wide range of integration courses, language courses, vocational training and qualifications programs targeted at refugee employment. Following the National Integration Bill in 2016, the federal government has adopted a strategy of active and early labor market integration of refugees into the labor market. The current approach, however, is steered by the assumption that refugees have to be pressured to find employment and get integrated into the labor market as quickly as possible. This approach puts little emphasis on job quality and the matching of skills and qualifications with the job, while typically channeling refugees into sectors characterized by low-pay, instability, and poor working conditions. If they are lucky enough to find jobs in low-wage sectors, many 'integrated' refugees will remain in precarious segments of the labor market with limited chances of upward labor market mobility. The government's approach, on the other hand, also includes recent attempts to attract highly skilled immigrants and refugees, following the Skilled Worker Immigration Act introduced in 2020, which provide assistance and incentives for employers who are interested in hiring highly skilled foreigners.

This paper argues that 1) Refugee labor market inclusion is characterized by segmentation and precarity, which leave low-skilled refugees and refugees with insecure legal status vulnerable for exploitation. 2) The government approaches labor market integration in a way that maximizes the profit German economy can draw from refugee labor. 75 in-depth interviews conducted between September 2020 and December 2021 with civil society organizations, representatives of state agencies, professional associations, and other actors in three cities, Berlin, Hamburg, and Munich, indicate precarity, contingent work, and exploitation. This paper first discusses this inclusion approach and the local factors that shape refugees' employment experiences in three German cities from a comparative perspective. Second, it discusses the strategies developed by non-profit organizations and refugees in each city to cope with uncertainty and hurdles faced by refugees who are segmented into the jobs at the bottom of the labor market.

Citations

- Hinger, S. (2020). Integration Through Disintegration? The Distinction Between Deserving and Undeserving Refugees in National and Local Integration Policies in Germany, in S. Hinger, and R. Schweitzer (Eds.) *Politics of (Dis)Integration*, SpringerOpen, IMISCOE Research Series, pp. 19-40.
- Maroufi, M. (2017). Precarious Integration: Labour Market Policies for Refugees or Refugee Policies for the German Labour Market? *Refugee Review Special Focus Labour*, An e-publication of the Emerging Scholars & Practitioners on Migration Issues, Volume III, November 2017

- Schwenken, H. (2021). Differential inclusion: the labour market integration of asylum-seekers and refugees in Germany, in B. Galgóczi (Ed.) *Betwixt and between: integrating refugees into the EU labour market*, ETUI, pp. 135-164.

Key Words: refugees, labor market, immigrant integration, civil society, non-profit organizations

ORGANIZING THE IMPERIAL PRECARIAT: PACIFIC ISLANDERS AND ETHNIC BOUNDARY-MAKING UNDER 21ST-CENTURY EMPIRE

Abstract ID: 2013

Individual Paper Submission

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Amidst the continued expansion and degradation of low-wage industries in the United States, our growing multiscalar labor and community organizing infrastructure offers a central pathway through which low-wage workers and communities of color address injustice not only at the workplace, but across a wide range of policy and issue domains—from housing to healthcare and the environment (Doussard 2020). While much is known about how labor and community organizations serve low-wage Asian, Black and Latinx workers, not much is known at all about how they serve low-wage Pacific Islander workers or low-income Pacific Islander communities more generally.

Addressing this knowledge gap is politically salient today for at least three pertinent reasons. First, Pacific Islanders constitute a relatively small share (1 percent) of the total US population, but are currently one of the fastest-growing ethnoracial groups in the nation. Second, as Indigenous peoples displaced from our Pacific Island homelands because of historical colonialism and ongoing legacies of 21st-century empire, our stories are also deeply aligned with our field's revitalized (albeit still inadequate) commitments to racial justice and decolonization. And third, to address the heightened vulnerabilities of Pacific Islander communities to the devastating impacts of COVID-19, Pacific Islander-serving labor and community organizations have seen an influx of national and state resources (e.g. funding, technical assistance), prompting increased formalization and coordination across space and scale.

Against this political and institutional backdrop, this research pursues two central questions: (1) What are the key challenges facing the nascent labor and community organizational infrastructure for Pacific Islanders in the continental United States? and (2) How do labor and community organizations mediate the relationship between low-wage Pacific Islander workers and the 21st-century US empire? Drawing on a national survey of Pacific Islander-serving labor and community organizations in the continental US, I provide basic descriptive statistics to highlight key organizational and network features of these organizations. In addition to the standard capacity issues that accompany nonstate planning efforts with small, geographically disperse communities, I show that these organizations also face the unique challenges of Pacific Islander ethnic boundary-making (Wimmer 2013)—wherein strong historical legacies of single-ethnic Pacific Islander organizing impedes the formation of broader panethnic, trans-Indigenous or multiracial coalitions.

Then, focusing on the “best-case” local context of Los Angeles, with its storied legacy of multiracial labor and community organizing and its vibrant Pacific Islander community, I offer an in-depth institutional study of how these complex dynamics of ethnic boundary-making are articulated in place. Drawing on interviews with local labor standards enforcement agency officials, industry experts, Pacific Islander-serving labor and community organizational staff and low-wage Pacific Islander workers in the retail and home health care industries, I show how ethnic boundary-making processes unfold at the local level—largely to the detriment of Pacific Islander workers at the bottom of the labor market. At the same time, the relatively recent emergence and formalization of explicitly pro-Indigenous and panethnic Pacific Islander/Oceanic organizations seemingly hold promise as progressive sites of ethnic boundary-making amenable to broader and stronger labor and community organizing coalitions.

Ultimately, this project offers two main contributions to planning scholarship. First, given the growing centrality of race to labor and community organizing practice (Lesniewski and Doussard 2017), this research emphasizes the utility of understanding the geographically uneven processes of ethnic boundary-making as part of building broader and stronger labor and community organizing coalitions. Second, it extends the subfield of Indigenous Planning beyond its traditional domains of land and natural resource management (Lane and Hibbard 2005; Hibbard, Lane, and Rasmussen 2008) to the (low-wage) labor market, which functions as a complex site of Indigenous dispossession and Indigenous resurgence.

Citations

- Doussard, Marc. 2020. “The Frontier of Equity Politics: Denver and the Future of Community-Labor Coalitions after Organized Labor.” *Cities* 96. <https://doi.org/10.1016/j.cities.2019.102450>.

- Hibbard, Michael, Marcus B. Lane, and Kathleen Rasmussen. 2008. "The Split Personality of Planning: Indigenous Peoples and Planning for Land and Resource Management." *Journal of Planning Literature* 23 (2): 136–51. <https://doi.org/10.1177/0885412208322922>.
- Lesniewski, Jacob, and Marc Doussard. 2017. "Crossing Boundaries, Building Power: Chicago Organizers Embrace Race, Ideology, and Coalition." *Social Service Review* 91 (4): 585–620. <https://doi.org/10.1086/694692>.
- Wimmer, Andreas. 2013. *Ethnic Boundary Making: Institutions, Power, Networks*. New York, NY: Oxford University Press.

Key Words: Indigeneity, Race, Ethnicity, Labor, Organizing

SPLINTERING SILICON VALLEY? THE IMPACT OF THE COVID-19 PANDEMIC ON THE EMPLOYMENT LOCATION PREFERENCE OF HIGH TECH WORKERS

Abstract ID: 2024

Individual Paper Submission

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For decades, cities and regions across the globe have tried to emulate the economic success of California's Silicon Valley. Evoking the semiconducting element's name as part of their economic development strategies to attract increasingly mobile capital investment, local policymakers have dubbed their towns Silicon Gulch, Silicon Prairie, or Silicon Beach in attempt to capture high technology investment and build an economically competitive cluster. Although early attempts to copy Silicon Valley focused on attracting high-tech manufacturing in sectors such as semi-conductors or computer assembly, recent strategies focus instead on inculcating an entrepreneurial environment and attracting a workforce with high-tech skills (Etzkowitz, 2019). While such efforts have had some limited success, Silicon Valley still remained the dominant location for innovation as measured by venture capital invests, patent filings, and the number of start-ups (Fuerlinger & Garzik, 2022). Prior to the pandemic, Silicon Valley and the wider Bay Area were also one of the top locations for high-tech workers to locate, which in turn helped spark a housing affordability crisis and widespread gentrification.

However, the COVID-19 pandemic and state mandated stay at home orders forced a radical shift in the geography of work, with millions of workers across a wide swath of industries shifting from working at traditional offices to their living rooms. While, millions of workers who previously worked at factories, farms, hospitals, restaurants and other "essential" roles were unable to work from home, the geography of jobs that could be performed from home varied greatly by region. According to Dingel and Neiman (2020), the Bay Area region had the highest share of remote-eligible jobs (51 percent) at the start of the pandemic. As the pandemic continued over more than two years, there were increasing media reports of workers moving away from expensive coastal cities and permanently relocating to lower-cost regions; a shift that even caused a temporary, but pronounced drop in rents in the Bay Area.

As COVID-19 case counts have fallen in early 2022 and some workers are returning to their offices, there are suggestions that the pandemic served as a profound shock to the preferences of workers both in terms of their willingness to commute to an office (Bote, 2022) as well as their desire to live and play in dense urban centers. As the Sharon Zukin (2020) notes, these shifts could "weaken the value of the city's fixed capital of buildings and land, its social capital of institutional networks and communities, and its human capital of workers with tech skills."

The degree to which these impacts will occur and the degree to which tech-work in general will relocate away from core regions like Silicon Valley is an empirical question. To assess the degree to which such a shift is underway, we designed a survey of high-tech workers in the Bay Area, distributed it through various online forums for tech-workers, and used paid ads on social media to attract respondents. With a sample of over 900 respondents, we found that 20 percent moved during the pandemic because of remote work options and an additional 23% expressed an interest in moving. An examination of the destination zip codes of workers who relocated during the pandemic showed a shift towards less dense neighborhoods. However, most moves were not to distant regions or second tier tech hubs, but were to more peripheral, lower cost parts of California where larger homes could be afforded. The high rate of interest in relocating and the preference for increased working from home could have profound economic development impacts for core parts of Silicon Valley and the Bay Area generally.

Citations

- Bote, J. (2022, April 4th, 2022). San Francisco Leads the nation in no one wanting to work in an office, and it's costing the city. *San Francisco Chronicle*.
- Dingel, J., & Neiman, B. (2020). *How Many Jobs Can be Done at Home?* White Paper. Becker Friedman Institute, University of Chicago. Chicago, IL. Retrieved from <https://bfi.uchicago.edu/working-paper/how-many-jobs-can-be-done-at-home/>

- Etzkowitz, H. (2019). Is Silicon Valley a global model or unique anomaly? *Industry and Higher Education*, 33(2), 83-95. doi:10.1177/0950422218817734
- Fuerlinger, G., & Garzik, L. (2022). Silicon Valley Innovation System. In *Successful Innovation Systems* (pp. 225-247): Springer.
- Zukin, S. (2020). Planetary Silicon Valley: Deconstructing New York's innovation complex. *Urban studies*, 58(1), 3-35. doi:10.1177/0042098020951421

Key Words: Silicon Valley, COVID-19, Relocation, High-tech industry, Suburbanization

THE FALSE PROMISES OF OPPORTUNITY ZONES: HOW A “FLEXIBLE” TAX INCENTIVE PROVED RIGID AND UNDERMINED CITY DESIRED ECONOMIC DEVELOPMENT

Abstract ID: 2031

Individual Paper Submission

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The federal Opportunity Zone (OZ) program was created as part of the Tax Cuts and Jobs Act (TCJA) in 2017 and aims to bring private investments into economically distressed neighborhoods. The OZ program operates through providing preferential tax treatment to individuals or businesses who invest their capital gains into OZs. OZs were designated in all 50 US states, Washington DC, and Puerto Rico between April and June of 2018, making over 8,700 census tracts eligible for the program's incentives. The choices for which census tracts to designate as OZ were left to states' governors who often called upon the expertise and local knowledge of local county and city governments to collaboratively choose OZs. States could nominate a quarter of their eligible tracts with eligibility being broadly defined, making about 57% of the US's census tracts eligible to be designated as OZs.

There is belief amongst OZ supporters that attributes of the OZ program and key differences from previous place-based federal programs will make OZs successful. In a 2018 congressional hearing titled “The Promise of Opportunity Zones,” expert witnesses centered their arguments for why OZs would be successful around two main points, reliance on local expertise to designate zones and determine needed development, and the program's flexibility to support an array of development types that would respond to unique community needs (U.S. Congress. Joint Economic Committee 2018). Despite the advertised strengths of the program, the OZ program has targeted tracts against city government recommendations (Wessel 2021) and has facilitated investments into projects that did not respond to locally identified needs (Kim 2021). While researchers have pointed out the ways the federally-determined structure of incentives is likely to attract investment in less risky real-estate projects in comparatively well-off spaces (Gelfond and Looney 2018; Jordan 2020), little is known about how city governments developed targeting schemes and collaborated with States to target OZs or how they perceive the program's ability to deliver on its promises to respond to unique community needs.

Through interviews with local government officials in Houston, Miami, Milwaukee, and St. Louis, this paper chronicles city government experiences with OZ targeting and implementation. Early findings suggest city governments were limited in their ability to target tracts to be designated as OZs, with State Governors often designated OZs in areas city governments did not identify as priorities and were perceived as not needing incentives to attract investment. Additionally, while city governments came up with sophisticated data-driven approaches and community engagement strategies to help target zones, local economic development practitioners expressed regrets about some areas they targeted. These regrets stem from how quickly States and the Federal Government required tract nominations from city governments and fundamental misunderstandings about how the program worked early on.

This research will inform how federal place-based economic development incentives can be better targeted towards localities with lessons learned from on-the-ground implementation experiences. Additionally, since divergences in visions to implement the OZ program exist between state and city governments, this paper can suggest practices for better collaboration between higher- and lower-levels of government for implementing economic development policy.

Citations

- Gelfond, Hilary, and Adam Looney. 2018. “Learning from Opportunity Zones: How to Improve Place-Based Policies.” Washington, DC: Brookings Institution.
- Jordan, Bre. 2020. “Denouncing the Myth of Place-Based Subsidies as the Solution for Economically Distressed Communities: An Analysis of Opportunity Zones as a Subsidy for Low-Income Displacement.” *Colum. J. Race & L.* 10: 65.
- Kim, Minjee. 2021. “How Do Tax-Based Revitalisation Policies Affect Urban Property Development? Evidence from Bronzeville, Chicago.” *Urban Studies*, 0042098021995148.

- U.S. Congress. Joint Economic Committee. 2018. The Promise of Opportunity Zones?: Hearing before the Joint Economic Committee, Congress of the United States, One Hundred Fifteenth Congress, Second Session, May 17, 2018. Washington: Washington?: U.S. Government Publishing Office, 2018. <https://catalog.lib.unc.edu/catalog/UNCb9453949>.
- Wessel, David. 2021. Only the Rich Can Play: How Washington Works in the New Gilded Age. New York: Public Affairs.

Key Words: Place-Based Economic Development, Tax Incentives, Opportunity Zones

BREWERY DISPERSION: RECONSIDERING THE ROLE OF PLANNERS IN ENCOURAGING ECONOMIC DEVELOPMENT THROUGH BEER TOURISM

Abstract ID: 2052

Individual Paper Submission

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Since at least the late 1980s, craft beer has exponentially grown as an industry in the United States in terms of production, overall sales, and number of breweries. In particular, the physical establishments and culture of craft breweries have caught the attention of urban planning and geography scholars for multiple related reasons. Craft breweries contribute to economic development through “beer tourism”; are touted as prime catalysts of adaptive reuse, as well as neighborhood preservation and revitalization (Reid, 2018); and have a positive effect on residential property value (Nilsson & Reid, 2019) and reductions in crime (Nilsson et al., 2020). Craft breweries are also understood to be significant agents of place-making and social interaction in neighborhoods (Nelson, 2020). These positive externalities have drawn increasing attention to the geographic location of craft breweries. Most of the literature to this point has examined the tendency of breweries to concentrate and the benefits accrued to them through agglomeration (Nilsson et al., 2018). Planning and policy solutions to increase brewery entrepreneurship and tourism have been based on these presumptions. However, agglomeration of breweries has not been proven to occur in all contexts and time frames. As such, this paper asks the question, is agglomeration a universal strategy of all craft breweries in the United States across contexts and time periods?

To answer this question, I begin by revisiting classic economic location theory from Harold Hotelling and August Lösch. An examination of the work of these two theorists reveals that agglomeration does not naturally occur in new brewery markets, but rather craft breweries will choose to disperse to maximize their market area. To test these theories, I use GIS pattern analysis to investigate three uncanny cases: Montgomery County (a mostly rural brewery market), San Diego between the years of 1989 and 1996 (a historical case of a major brewery market), and Fort Worth (an emerging urban brewery market). Using data from Brewers Association, local data sources, and PubQuest—an app that locates breweries throughout the United States—breweries are located for each of the three cases. Afterward, multi-distance spatial cluster analysis and average nearest neighbor analysis are utilized to determine clustering or dispersion with statistical significance in each of the three cities. The typical Ripley’s K function is supplemented with average nearest neighbor analysis because the cases contain less than thirty points of data. Using average nearest neighbor analysis Montgomery County and the historical case of San Diego exhibited dispersion, and Fort Worth displayed slight dispersion.

These findings suggest the need to reconsider the types and timing of planning and policy interventions. The paper particularly focuses on three possibilities in this regard. First, instead of focusing on zoning reform, which is only helpful later in the formation of a brewery market, planners could collaborate with city councils to enact reform that would make brewery entrepreneurship easier. Second, planners can combine the goals of economic and community development to encourage equitable revitalization of neighborhoods. Last, planners can creatively encourage brewery patronage through elements of public engagement. Ultimately, this paper indicates the need for more research into brewery location including GIS analysis of more cases, qualitative research, and in-depth case studies.

Citations

- Nelson, V. (2020). “Consuming local: product, place, and experience in visitor reviews of urban Texas craft breweries.” *Leisure Studies*, 1-15.
- Nilsson, I., Reid, N., & Lehnert, M. (2018). “Geographic Patterns of Craft Breweries at the Intraurban Scale.” *The Professional Geographer*, 70(1), 114-125.
- Nilsson, I. & Reid, N. (2019). “The value of a craft brewery: On the relationship between craft breweries and property values.” *Growth and Change*, 50, 689-704.
- Nilsson, I., Wartell, J., and Reid, N. (2020). “Craft Breweries and Neighborhood Crime: Are They Related?” *Papers in Applied Geography*, 6(3), 256-271.
- Reid, N. (2018). “Craft breweries, adaptive reuse, and neighborhood revitalization.” *Urban Development Issues*, 57, 5-14.

Track 3 Posters

GEOGRAPHICAL CHANGE OF THE BIRTH AND DEATH OF SERVICE ESTABLISHMENTS IN THE CATERING INDUSTRY AFTER COVID-19 IN SEOUL, KOREA

Abstract ID: 1321

Poster

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Background and Purpose

The COVID-19 pandemic has posed unprecedented challenges in cities and regions around the world. Adopting social distancing policies as a response to the pandemic reduced human mobility, which had a heterogeneous socioeconomic impact on regions (Trasberg & Cheshire, 2021; Zhai, Liu, & Peng, 2021). Previous literature dealing with the economic impact of social distancing emphasized that the decrease in the floating population caused by social distancing has led to various shocks in sales in the face-to-face service sector and increases in business closure (Gunay & Kurtulmus, 2021). Despite the growing importance of exploring entrepreneurship dynamics at a micro-regional level due to the deterioration of the service sector, most previous research has focused on geographical human mobility changes (Eom et al., 2021; Nikiforiadis et al., 2022). Only a few studies have attempted to explore the relationship between mobility changes and urban entrepreneurship.

In this background, our study explores how geographical changes in the floating population due to social distancing in Seoul in December 2020 appear differently according to urban spatial characteristics and empirically analyzes how these changes affect the birth and death rate of catering establishments. Our study addresses two research questions: (1) How do changes in the floating population appear depending on the spatial characteristics after social distancing? (2) How do these changes affect the births and deaths of catering establishments?

Data and Methods

To examining the changes in human mobility after social distancing, we used De Facto Population data from Seoul Metropolitan Government. De Facto Population data is mobile big data based on long-term evolution signal and it widely used to investigate the human mobility pattern in research. And to investigate the relationship between change of human mobility patterns and entrepreneurship dynamics in catering industry, The Trade Area Analysis Service from Seoul Public Data were used. Our methodology consisted of the following. First, 425 administrative districts (dong) of Seoul were classified into four types by performing time-series clustering based on the trend change of floating population from January 1, 2020, to June 6, 2021. Second, exploratory spatial data analysis was performed to see how social distancing influenced the floating population across the classified cluster. Third, by using a spatial fixed effects model, we empirically analyzed how these changes affect the birth and death rates of catering establishments.

Findings and implications

After social distancing in Seoul, the change in the floating population of Seoul compared with the same period of the previous year ranged from -34.2% to +2.7%, indicating the variation depends on the type of dong-level cluster characteristics. In the case of areas belonging to clusters with a high proportion of commercial areas, the number of floating populations in the evening and birth rate of catering establishments decreased dramatically; in commercial areas near residential districts, the rate slightly increased. Empirical results also show the decrease of the floating population had a significant relationship with the change in the birth and death rates of catering establishments. From these findings, our study suggests implications for planners by providing a better understanding of the relationship between human mobility changes caused by social distancing and entrepreneurship in the catering industry.

Citations

- Eom, S., Jang, M., & Ji, N. S. (2021). Human Mobility Change Pattern and Influencing Factors during COVID-19, from the Outbreak to the Deceleration Stage: A Study of Seoul Metropolitan City. *The Professional Geographer*, 1-15.

- Gunay, S., & Kurtulmus, B. E. (2021). COVID-19 social distancing and the US service sector: What do we learn?. *Research in International Business and Finance*, 56. <https://doi.org/10.1016/j.ribaf.2020.101361>
- Nikiforiadis, A., Mitropoulos, L., Kopelias, P., Basbas, S., Stamatiadis, N., & Kroustali, S. (2022). Exploring mobility pattern changes between before, during and after COVID-19 lockdown periods for young adults. *Cities*, 103662.
- Trasberg, T., & Cheshire, J. (2021). Spatial and social disparities in the decline of activities during the COVID-19 lockdown in Greater London. *Urban Studies*. <https://doi.org/10.1177/00420980211040409>
- Zhai, W., Liu, M., & Peng, Z.-R. (2021). Social distancing and inequality in the United States amid COVID-19 outbreak. *Environment and Planning A: Economy and Space*, 53(1), 3–5.

Key Words: COVID-19, Social Distancing, Entrepreneurship Dynamics, Spatiotemporal Big Data, Spatial Econometrics

Track 4 – Environmental Planning & Resource Management

Rack 4 Pre-Organized Session Summaries and Abstracts for the Sessions

OVERCOMING ANALYSIS PARALYSIS IN COLLABORATIVE GOVERNANCE AND THE ROLE OF STRATEGIC DOING

Pre-Organized Session 68 - Summary

Session Includes 1382, 1383, 1384

Collaborative Governance in the Era of Climate Change The lack of federal and state policy leadership related to climate change is leading many cities to explore collaborative approaches to reducing greenhouse gas emissions or adapting to the new realities of a changing climate. These collaborative approaches are fostering new regional initiatives, which largely rely on the shared benefits of working across jurisdictions to voluntarily implement strategies. In this pre-organized session, researchers examine the findings from individual efforts and cross-case comparisons.

Objectives:

- Understand strategies for implementation through collaborative regional strategies
- Understand range of structures for supporting climate change collaboratives

THE POWER OF COLLABORATING WITHOUT AUTHORITY: MAKING PROGRESS THROUGH REGIONAL CLIMATE COLLABORATIVES IN FLORIDA

Abstract ID: 1382

Abstract within Pre-Organized Session 68

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For over a century, regional planning has responded to the need for collective action on complex social and ecological issues that cross jurisdictional and sectoral boundaries. Various paradigms to achieve regional governance have been attempted, with new regionalism dominating since the 1990s. New regionalism is characterized by voluntary networks of multiple, cross-sector stakeholders (public, private, non-profit, non-governmental, and others) working together towards a common goal and focuses on governance arrangements (voluntary, informal, and horizontally linked institutions) rather than government structures (formal, vertical layers of political authority). Although widely practiced, new regionalism has seen mixed success. Challenges with new regionalism are many: the tension between local autonomy and regional needs, lack of effective regional institutions and funding, inadequate regional identity and social or civic capital, and lack of regional consensus. Successful new regionalism efforts depend upon a foundation of regional civic infrastructure supported by vertical and multilevel political power.

Florida was a leader of regional efforts to attend to environmental and growth management in the 20th century establishing Water Management Districts in 1972 through the Water Resources Act, and Regional Planning Councils (RPCs) in 1980 although interlocal agreements had created regional councils as early as the 1960s. RPCs have been under attack since the governorship of Rick Scott placed state planning institutions in the crosshairs of state policy. In the context of federalism, regional planning entities like Florida's RPCs have virtually no authority to make policy level decisions to address the problems they are purported to deal with (growth management, affordable housing, transportation, emergency management, public health, economic development, and more). They have limited responsibility to address these issues only insofar as they are able to obtain grants and support from their council members who include elected officials from their affiliated local governments as well as gubernatorial appointees.

As climate change impacts become increasingly salient, regional climate collaboratives have emerged as a way to address cross jurisdictional planning and capacity building to facilitate more effective climate mitigation and adaptation. Regionalism has been touted as a way forward where local capacity is limited, issues extend beyond local scales, and higher-level governments eschew direct climate action (Shi et al. 2015, Shi 2017). In recent years, new regional bodies to address climate change have been established in SE Florida (Vella et al., 2016), the Tampa Bay region, East Central Florida, and Northeast Florida. Other areas of the state in the Panhandle and Southwest are

considering similar models. Moreover, regional climate collaboratives were specifically targeted for funding to address sea level rise adaptation efforts in 2021 legislation that committed nearly \$1 billion to such projects. Regionalism, it seems, has found a new purpose and newfound legitimacy in the state.

While regional efforts lack regulatory teeth, funding resources, and jurisdictional control of land management decisions, they draw on other sources of influence and power. The purpose of this paper is to explore the impacts that these entities are having in Florida in the face of climate change and sea level rise. Specifically, the project aims to understand how regional activities influence policy both upstream (at the state level) and downstream (at the local level). This research is based on a range of data sources including a 2019 statewide survey of coastal planners and managers, a review of comprehensive plans from coastal jurisdictions, and preliminary case studies of four regional climate collaboratives. Through these data sources we shed light on how regional climate collaboratives have influenced state policies and facilitated uptake of local planning policies and practices that could make progress on planning for sea level rise.

Citations

- Innes, J. E., & Booher, D. E. (2010). *Planning with Complexity: An introduction to collaborative rationality for public policy*. New York, New York: Routledge.
- Margerum, R. (2011). *Beyond Consensus: Improving Collaborative Planning and Management*. MIT Press: Cambridge MA.
- Shi, L. (2017). A new climate for regionalism: metropolitan experiments in climate change adaptation. Massachusetts Institute of Technology. <https://dspace.mit.edu/handle/1721.1/111370>
- Vella, K., Butler, W., Sipe, N., Chapin, T., & Murley, J. (2016). Voluntary Collaboration for Adaptive Governance: The Southeast Florida Regional Climate Change Compact. *Journal of Planning Education and Research*, 36(3), 363-376.
- Weir, M., Rongerude, J. and Ansell, C. 2009. "Collaboration Is Not Enough: Virtuous Cycles of Reform in Transportation Policy." *Urban Affairs Review*, 44: pp. 455 - 489.

Key Words: collaborative governance, regionalism, climate change

REACHING FOR CLIMATE COLLABORATION THROUGH COUNTY MITIGATION PLANNING: A WISCONSIN CASE STUDY

Abstract ID: 1383

Abstract within Pre-Organized Session 68

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Across the United States (and globally) communities and regions are wrestling with issues around climate change adaptation and mitigation strategies. For too many communities and local governments, including those seeking to coordinate their actions across jurisdictions, those issues can involve continuing challenges from the general public or elected office. Whereas planners and climate activists across scales are advancing comprehensive goals and priorities to reduce greenhouse gas emissions and better prepare communities to be more resilient ahead of intensified natural disasters, efforts to coordinate meaningful implementation actions among local jurisdictions remain challenging. County-level Natural Hazard Mitigation Plans (NHMP) offer a process and structure to improve communication and coordination across local jurisdictions and potentially lead to more robust collaborative governance arrangements.

Building upon programs in multiple coastal states, the Disaster Mitigation Act of 2000 created a national program in the United States that incentivized counties to create NHMPs. While somewhat prescriptive, county NHMPs, funded through federal planning grants, identify local risks and priorities around flooding and other potential hazards, and once approved by the US Federal Emergency Management Agency (FEMA), become vehicles for funding mitigation actions, including for hazard risks that are amplified due to climate change. Experiences with NHMPs vary substantially within and across states.

Dane County, Wisconsin, pursued a collaborative, multi-jurisdictional approach to their natural hazard planning process based on a five-year cycle of engagement with residents, built environment professionals, and governmental departments/agencies. This multi-jurisdictional NHMP approach emphasizes coordinating with local jurisdictions for risk assessment, incorporating local priorities via "annex" within the county plan, and committing to continued active engagement beyond the planning process. Engagement requirements, data documentation, community-based assessments, and mitigation strategy development are all included in each local jurisdiction's annex. This process provides the county and local jurisdictions with unique benefits for identifying priority actions and creating opportunities to collaborate around funding and implementation actions.

This paper uses the Dane County experience as a case study to explore challenges of collaboration across jurisdictions

to identify, prioritize, and implement climate adaptation and disaster mitigation actions. Drawing from interviews, surveys, and other data sources, authors will describe one county's efforts at multi-jurisdictional planning and the associated challenges and opportunities when reaching for climate collaboration through county hazard mitigation plans.

Citations

- Edelenbos, J., N. Bressers, and P. Scholten (eds.). 2013. *Water Governance as Collective Capacity*. Burlington, VT: Ashgate Publishing Company.
- Margerum R.D. and C.J. Robinson (eds.). 2016. *The Challenges of Collaboration in Environmental Governance*. Northampton, MA: Edward Elgar Publishing.
- Schwab, J.C. (ed). 2010. *Hazard Mitigation: Integrating Best Practices into Planning*. Planning Advisory Service Report Number 560. Chicago: American Planning Association. 145 pp.
- Wisconsin Initiative on Climate Change Impacts (WICCI). 2022. *Wisconsin's Changing Climate: Impacts and Solutions for a Warmer Climate*. University of Wisconsin-Madison Nelson Institute for Environmental Studies. 89 pages

Key Words: collaboration, hazard mitigation, climate adaptation, environmental governance

OVERCOMING ANALYSIS PARALYSIS IN COLLABORATIVE GOVERNANCE AND THE ROLE OF STRATEGIC DOING

Abstract ID: 1384

Abstract within Pre-Organized Session 68

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Collaboration has been increasingly used to address complex regional problems that cross political boundaries and jurisdictions. The roles, approaches and implementation issues associated with collaboration strategies and networks have been widely discussed in the research literature (Forester, 2013; Healey, 1997; Innes & Booher, 2010; Koppenjan, 2008; Margerum, 2011). There has been less analysis of the approaches and deliberations associated with convening collaborative efforts (Vella et al., 2016). Some researchers have identified common processes and issues, but there has also been criticism of the lack of concrete progress and implementation of regional efforts (Margerum, 2011; Shi, 2020; Shi et al., 2015). This article examines a cross section of 11 case studies using document analysis, report reviews, and interviews with twenty one key staff. The forty five to sixty minute interviews explored the steps in the convening process, and the key factors or barriers related to tangible progress. One of the key factors that emerged was the need to develop “small wins,” “momentum,” or “tangible reportable progress.” Using a framework called Strategic Doing (Morrison et al., 2019), I conduct a post-hoc qualitative analysis of these strategies and compare them to the strategic doing framework. The goal is to test the steps and approaches of strategic doing to determine if it can be a framework to assist climate collaboratives in moving their deliberations and efforts toward tangible outcomes.

Citations

- Shi, L. (2020). From Progressive Cities to Resilient Cities: Lessons from History for New Debates in Equitable Adaptation to Climate Change. *Urban Affairs Review*, 1078087419910827. <https://doi.org/10.1177/1078087419910827>
- Morrison, E., Hutcheson, S., Nilsen, E., Fadden, J., & Franklin, N. (2019). *Strategic Doing: Ten Skills for Agile Leadership*. Wiley. <https://books.google.com/books?id=xUaWDwAAQBAJ>
- Vella, K., Butler, W. H., Sipe, N., Chapin, T., & Murley, J. (2016). Voluntary Collaboration for Adaptive Governance: The Southeast Florida Regional Climate Change Compact. *Journal of Planning Education and Research*, 36(3), 363–376. <https://doi.org/10.1177/0739456X16659700>
- Koppenjan, J. (2008). Creating a playing field for assessing the effectiveness of network collaboration by performance measures. *Public Management Review*, 10(6), 699–714.
- Margerum, R. D. (2011). *Beyond consensus: Improving collaborative planning and management*. MIT Press.

Key Words: Climate resilience, Collaborative governance, Regional planning

A GRAND CHALLENGE IN URBAN GREENING: BALANCING NATURE CONTACT BENEFITS, EQUITY, AND ECO-GENTRIFICATION

Abstract ID: 1100

Roundtable

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Municipal leaders worldwide are showing substantial interest in urban greening, defined as a social practice of organized or semi-organized efforts to introduce, conserve, or maintain outdoor vegetation in urban areas. This encompasses incentives, policies, and programs to vegetate urban landscapes through implementation of green roofs and walls, rainwater harvesting gardens, and transformation of post-industrial spaces into new types of green spaces and parks. It also includes large-scale urban tree planting initiatives (TPIs). Over the past decade, there has been a seven-fold increase in scholarly use of terms denoting TPIs; this reflects a bloom of interest in urban greening research and practice, and a potentially important chapter in the historic arc of city greening (Eisenman et al. 2021).

There are a wide range of social and environmental benefits of urban greening including but not limited to cooling air temperature, managing stormwater, providing wildlife habitat, and enhancing human health; this includes a robust body of scholarship that consistently finds improved mental health and stress-related outcomes from viewing and spending time in or near vegetated spaces (Hartig et al. 2014). Yet, urban greening interventions can also generate disbenefits such as falling limbs, pollen-associated allergenicity, and increased real estate values that may spur gentrification and displacement of vulnerable residents. This latter issue has prompted calls for greening “just enough” (Wolch, Byrne, and Newell 2014), and it has given rise to a growing body of scholarship on green gentrification and procedural justice (Anguelovski and Connolly 2022; Carmichael and McDonough 2018).

All of this sets up a grand challenge: how do municipal leaders promote and implement greening initiatives in a way that maximizes benefits while minimizing disbenefits? This is an issue of pressing concern, as the vast majority of people worldwide are projected to live in urban areas by the end of this century, and the need for nearby nature becomes increasingly urgent. Moreover, populations that are at risk of displacement from green gentrification are also the people who might especially benefit from urban greening, given research showing links between historical racism, housing segregation, and canopy cover (Locke et al. 2021). Balancing the tradeoffs of urban greening is further complicated by poor communication between different disciplines such as environmental psychology, landscape architecture, political science, and urban forestry. This, however, represents an opportunity for urban planners, whose interdisciplinary orientation and role as conveners and facilitators is unique. This roundtable discussion seeks to advance a conversation on this important topic by convening leading scholars on the mental health benefits of nature contact, eco-gentrification and equity, and urban greening, with an eye towards generating constructive directions for transdisciplinary research and practice.

Citations

- Anguelovski, Isabelle, and James J. T. Connolly, eds. 2022. *The Green City and Social Injustice: 21 Tales from North America and Europe*. Routledge Equity, Justice and the Sustainable City. Abingdon, UK; New York, NY: Routledge.
- Eisenman, Theodore S., Tamsin Flanders, Richard W. Harper, Richard J. Hauer, and Katherine Lieberknecht. 2021. “Traits of a Bloom: A Nationwide Survey of U.S. Urban Tree Planting Initiatives (TPIs).” *Urban Forestry & Urban Greening* 61 (June): 127006. <https://doi.org/10.1016/j.ufug.2021.127006>.
- Hartig, Terry, Richard Mitchell, Sjerp de Vries, and Howard Frumkin. 2014. “Nature and Health.” *Annual Review of Public Health* 35 (1): 207–28. <http://proxy.library.upenn.edu:3003/doi/abs/10.1146/annurev-publhealth-032013-182443>.
- Locke, Dexter H., Billy Hall, J. Morgan Grove, Steward T. A. Pickett, Laura A. Ogden, Carissa Aoki, Christopher G. Boone, and Jarlath P. M. O’Neil-Dunne. 2021. “Residential Housing Segregation and Urban Tree Canopy in 37 US Cities.” *Npj Urban Sustainability* 1 (1): 1–9. <https://doi.org/10.1038/s42949-021-00022-0>.
- Wolch, Jennifer R., Jason Byrne, and Joshua P. Newell. 2014. “Urban Green Space, Public Health, and Environmental Justice: The Challenge of Making Cities ‘Just Green Enough.’” *Landscape and Urban Planning* 125: 234–44. <http://linkinghub.elsevier.com/retrieve/pii/S0169204614000310>.

Key Words: urban greening, nature contact, eco-gentrification, green infrastructure, equity

CLIMATE JUSTICE AND PLACE

Abstract ID: 1350

Roundtable

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LAMB, Zachary [University of California Berkeley] zlamb@berkeley.edu, participant
RIVERA, Danielle [University of California Berkeley] dzrivera@berkeley.edu, participant
SUBRAMANYAM, Nidhi [University of Toronto] nidhi.subramanyam@utoronto.ca, participant
TURNER, V. Kelly [University of California Los Angeles] vkturner@ucla.edu, participant

Climate justice has taken on a global value form, a way to measure and communicate how the burdens of climate change are disproportionately distributed across the planet. International-scale solutions to the climate crisis and climate injustice are thus oriented around the pursuit of commensurability across emissions sources, sinks, costs, and benefits (De Lucia, 2009). Yet, far from being universal, climate injustices—often revealed during sudden or slow onset weather events—harm health and disrupt livelihoods (UNHCR, 2020) in ways that are highly contingent and intimately connected to place-based environmental transformations. In this roundtable, we explore experiences with place-making, place-keeping, displacement, and emplacement in the context of the climate crisis (Butts & Adams, 2020; Porter et al., 2020; Raven, 2020). Key questions driving our discussion include: how do local institutions enable and subvert climate justice? How does climate resilient place-making leverage climate-induced migrant flows? How do planners incorporate the climate crisis and climate justice concerns into their routines, and how are practices adapting? We highlight strategies that a variety of frontline communities and climate planners are using to redefine place and identity in relation to climate refuge, haven, resettlement, and emplacement, and examine how place-based discourses of climate comport with experiences of residents and new migrants. Drawing from field work in India, Sub-Saharan Africa, North America, and other regions, we engage in a comparative discussion around place-based climate injustice experiences with agrarian distress, food insecurity, flooding, and heat waves.

Citations

- Butts, D., & Adams, H. (2020). Weather Contracts: Capturing a sense of weather for place-based adaptation to climate change. *Global Environmental Change*, 63(June), 102052. <https://doi.org/10.1016/j.gloenvcha.2020.102052>
- Lucia, V. De. (2009). Hegemony and Climate Justice: A Critical Analysis. In S. Böhm & S. Dabhi (Eds.), *UPSETTING THE OFFSET: THE POLITICAL ECONOMY OF CARBON MARKETS*. Mayfly. <https://ssrn.com/abstract=1525813>
- Porter, L., Rickards, L., Verlie, B., Moloney, S., Lay, B., Latham, B., Anguelovski, I., Pellow, D., Porter, L., Bosomworth, K., Rickards, L., Verlie, B., Moloney, S., Lay, B., Latham, B., BCNUEJ, I. A., Pellow, D. N., Naarm/Birrarrung-ga, Porter, L., ... Lay, B. (2020). Climate Justice in a Climate Changed World. *Planning Theory and Practice*, 21(2), 293–321. <https://doi.org/10.1080/14649357.2020.1748959>
- Raven, P. G. (2020). Experts in their own tomorrows. In C. Courage, T. Borup, M. R. Jackson, K. Legge, A. McKeown, L. Platt, & J. Schupbach (Eds.), *The Routledge Handbook of Placemaking* (pp. 148–158). Taylor & Francis Group. <https://doi.org/10.4324/9780429270482-20>
- United Nations High Commissioner for Refugees. (2020). Legal Considerations Regarding Claims for International Protection Made in the context of the Adverse Effects of Climate Change and Disasters. <https://doi.org/10.1093/ijrl/eeab026>

Key Words: Climate Justice, Placemaking, Environmental Justice, Neoliberalism, Extreme Weather

Track 4 Individual Paper Submissions

WINTER STORM URI AND THE TEXAS ENERGY CRISIS: IMPLICATIONS FOR CLIMATE AND ENERGY JUSTICE IN SAN ANTONIO, TX

Abstract ID: 1026

Individual Paper Submission

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Winter Storm Uri hit Texas in February 2021, leaving millions of people without power. This winter storm and resulting energy crisis provide an example of failed climate planning and insufficient preparedness for cold weather events (Doss-Gollin et al. 2021). However, it also presents an opportunity to understand response and resiliency during climate change-related events in Texas, a state where climate change remains a controversial topic.

Previous research has uncovered the environmental justice concern of disparate impacts of ecosystem services in San Antonio, TX (Yi et al. 2019) as well as the relationship between social vulnerability, heat, and emergency medical service incidents (Zottarelli et al. 2020). However, research on climate and energy justice is falling behind in San Antonio as the threat of climate change-related events intensifies. Thus, there is a need for evidence-based research on the energy crisis and planning implications for infrastructure needs to protect vulnerable Texas communities. To understand community resiliency, it is important to assess communities' perceived impacts during the crisis. One way to assess this is to study how elected officials, utility entities, and energy providers communicated with communities before, during, and after the crisis through social media. Recent literature showed increasing use of social media platforms for communications during disasters (Lovari and Bowen 2020; Palen and Hughes 2018). When such discussions lead toward agreement amongst populations, they contribute to community resiliency (Singleton, Kumar, and Li, 2018). However, in an analysis of social media data from the Tianjin Port Explosion, Deng et al. (2020) found that there was a mismatch between the information the public wanted and what officials were communicating to them.

We collected Twitter data from San Antonio's elected officials, utility providers, and the public during a four-week timeframe covering the pre-, during, and post-disaster period. We used the natural language processing techniques of topic modeling, sentiment analysis, and semantic analysis to understand what each user group was discussing and prioritizing using keywords related to the crisis context. We also conducted a keyword analysis on City Council meeting minutes to determine how crisis communications on Twitter were translated into action. Through these analyses, we tested the following hypotheses: 1) Communities within San Antonio experienced disproportional impacts from Winter Storm Uri; and 2) Elected officials' disaster response through social media platforms was not enough to address the needs of vulnerable communities.

From our preliminary analysis, we found variations in sentiment and centrality (i.e., priority) of the keywords between Twitter user groups. When the storm hit (Week 2), the keywords "freeze" and "pipes" had negative sentiments from each user category. However, keywords that relate to resiliency, such as "crisis" and "emergency", showed more variation among groups over time, perhaps reflecting disparities in disaster preparedness between communities and levels of leadership. Notably, "climate change" was largely absent from the conversation over the entire data collection period. In fact, climate change was absent as a node for all elected officials and energy providers, while the public tweeting from San Antonio showed higher centrality, indicating the public's stronger perception of the linkage between the crisis and climate change. Once we complete our analysis using socioeconomic data and council minutes, we expect to find whether the needs and wants of the disadvantaged communities impacted by the storm were heard by their elected representatives and led to appropriate actions (e.g., distribution of emergency resources). These results will be an important contribution toward climate and energy justice in San Antonio as the city must grapple with its resiliency, both physical and perceived, when planning for imminent climate change-related events.

Citations

- Deng, Qing, Yang Gao, Chenyang Wang, and Hui Zhang. 2020. "Detecting Information Requirements for Crisis Communication from Social Media Data: An Interactive Topic Modeling Approach." *International Journal of Disaster Risk Reduction* 50 (November): 101692. <https://doi.org/10.1016/j.ijdrr.2020.101692>.
- Doss-Gollin, James, David J Farnham, Upmanu Lall, and Vijay Modi. 2021. "How Unprecedented Was the February 2021 Texas Cold Snap?" *Environmental Research Letters* 16 (6): 064056. <https://doi.org/10.1088/1748-9326/ac0278>
- Lovari, Alessandro, and Shannon A. Bowen. 2020. "Social Media in Disaster Communication: A Case Study of Strategies, Barriers, and Ethical Implications." *Journal of Public Affairs* 20 (1): e1967. <https://doi.org/10.1002/pa.1967>.
- Singleton, Sydney, Sathish A P Kumar, and Zhenlong Li. 2018. "Twitter Analytics-Based Assessment: Are the United States Coastal Regions Prepared for Climate Change?," 6.
- Zottarelli, Lisa K, Hatim O Sharif, Xiaohu Xu, and Thankam S Sunil. 2020. "Effects of Social Vulnerability and Heat Index on Emergency Medical Service Incidents in San Antonio, Texas, in 2018." *Journal of Epidemiology and Community Health*, October, jech-2019-213256. <https://doi.org/10.1136/jech-2019-213256>.

PREACT: PLANNING FOR RESILIENCE AND EQUITY THROUGH ACCESSIBLE COMMUNITY TECHNOLOGY

Abstract ID: 1029

Individual Paper Submission

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The types of planning changes we make today for a sustainable future often don't align with very real community concerns — especially in low income communities. Scientific research is pointing to the severity of urban heat island effects, the climate pressures on aging housing and civic infrastructure, the need for a transition to distributed and renewable energy resources, the challenge of weatherization of buildings, and the need to invest now in resilience planning such as green space and flood protection and mitigation (Gill et al. 2018; Weber et al. 2015). However, residents may view the focus on long-range planning and climate as ignoring their immediate needs, and thus feel further excluded from planning decision-making and priority setting. Or they may perceive investments in sustainability as contributing to green gentrification (Anguelovski et al 2019, Pearsall 2010; Shokry et al 2020).

Expanding on the authors' GI Equity Index framework, PREACT (Planning for Resilience and Equity through Accessible Community Technology, NSF-SCC Planning Grant 2125375), is a multipurpose and multi-scalar climate preparedness and neighborhood planning software application informed by community need and community assets.

The PREACT Planning team is working to design a process and planning tool that will:

- take into account the needs and experiences of community members, designing a model of technology co-production that addresses community needs and allows for the integration of social and scientific data for more informed decision- making.
- enable users to specify a geographical area of interest, choose from and weigh the importance of a range of factors relevant to a climate planning concern, and generate a map indicating the areas of greatest vulnerability.
- also help identify ways to systematically address vulnerabilities through support for existing community assets, opportunities to reinvest in social, ecological, and physical infrastructure in communities, better local enforcement of existing public health regulations, and changes in land-use decisions and planning.
- ensure that the data and assumptions that underpin PREACT are more representative of community needs and informed by lived experience through the inclusion of citizen groups and citizen science.
- open up opportunities for a more deliberative dialogue among citizens, scholars, government, and business about needs and preferences for policy interventions.
- create a technological tool that empowers citizens and makes the government more responsive to community needs.

The paper will highlight existing progress on the NSF-SCC Planning Grant and our efforts to develop a theoretical and actionable framework for a more nuanced and citizen driven approach to responsive climate planning, preparedness, and justice.

Citations

- Anguelovski, I., Connolly, J. J., Pearsall, H., Shokry, G., Checker, M., Maantay, J., ... & Roberts, J. T. (2019). Opinion: Why green “climate gentrification” threatens poor and vulnerable populations. *Proceedings of the National Academy of Sciences*, 116(52), 26139-26143.
- Gill, S. E., Handley, J. F., Ennos, A. R., & Pauleit, S. (2018). Adapting cities for climate change: The role of the green infrastructure. *Planning for Climate Change: A Reader in Green Infrastructure and Sustainable Design for Resilient Cities*, 33(1), 195–205.
- Pearsall, H. (2010). From brown to green? Assessing social vulnerability to environmental gentrification in New York City. *Environment and Planning C: Government and Policy*, 28(5), 872-886.
- Shokry, G., Connolly, J. J., & Anguelovski, I. (2020). Understanding climate gentrification and shifting landscapes of protection and vulnerability in green resilient Philadelphia. *Urban Climate*, 31, 100539.
- Weber, S., Sadoff, N., Zell, E., & de Sherbinin, A. (2015). Policy-relevant indicators for mapping the vulnerability of urban populations to extreme heat events: A case study of Philadelphia. *Applied Geography*, 63, 231–243. <https://doi.org/10.1016/j.apgeog.2015.07.006>

Key Words: Climate Justice, Resilience, Smart and Connected Cities, Community Engagement, Environmental Justice

RESOURCE PROTECTION IN OREGON

Abstract ID: 1034

Individual Paper Submission

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Oregon is the ninth largest American state, with an area of approximately 250,000 square kilometers and a geography that includes a 583-kilometer coast, two significant mountain ranges, a desert, and many other natural and man-made resources. It has a population of approximately 4.2 million, three quarters of which live in the Willamette Valley, which has an area of approximately 14,000 square kilometers. As with almost any place in America, there are political and legal conflicts over the use of natural and man-made resources on private and public lands. There is a vigorous property rights movement throughout the United States, which comes into conflict with the rights of indigenous peoples, minimum instream flow requirements, and other public rights. It is useful to have a legal regime that minimizes those types of conflicts and provides a level of consensus over the use of those resources.

Over the past half-century, such a regime has been crafted in Oregon. That regime brings together various interests to support the planning and regulation of fifteen categories of natural and man-made resources. In addition to the broad constituency for wilderness areas and fish and wildlife habitat, those interests include users of recreation trails and scenic waterways, supporters of historic and cultural preservation, purveyors of energy and mineral resources, and the more conservation-oriented Portland metropolitan area. The result is a system that holds its own against private property rights absolutists.

This paper addresses protections for natural and man-made resources in the context of Oregon's statewide land use planning program. It discusses the history, evolution, and mechanics of such protections, which generally take the form of comprehensive plan policies and land use regulations. It also analyzes and evaluates the current system and its prospects for improvement.

Citations

- The Quiet Revolution Goes West: The Oregon Planning Program 1961–2011, 45 J. MARSHALL L. REV. 357, 367–72 (2012)
- Oregon Revised Statutes Chapter 197
- Oregon Administrative Rules Chapter 660, Division 033

Key Words: Natural Resources

DOES CLIMATE INVESTMENT INTENSITY GREEN GENTRIFICATION?

Abstract ID: 1045

Individual Paper Submission

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Climate change has negatively impacted human health, livelihoods, and key infrastructure in urban areas, especially within communities with economically and socially marginalized residents. To reduce exposure and vulnerability to climate change, public climate investment, mainly in urban green infrastructures, plays a key role in accelerating urban climate adaptation and improving urban resilience (IPCC, 2021). In California, California Climate Investments (CCI) supports a series of projects statewide to reduce greenhouse gas emissions and deliver other economic, environmental, and public health by distributing the proceeds from the carbon credit auction of California Cap-and-Trade, one of the largest carbon markets in the United States. These investments, however, have been shown to have a limited positive impact on vulnerable communities and are always accompanied by displacement and gentrification caused by rising property value and rents, which will damage long-term social equity and environmental justice.

This study examines the impact of climate investment on gentrification in the San Francisco-Oakland-Berkeley Metropolitan Statistical Area (SFOB MSA) between 2015 and 2020. The CCI invested in 262 climate-related projects within SFOB MSA from 2015 to 2020 with the whole investment amount of approximately 1.2 billion US dollars. We use California Climate Investment Implemented Project Dataset (CCIIP) from California Air Board with detailed investment information and American Community Survey (ACS) 5-year Estimate Data. We construct the climate

investment index to show the spatial distribution of investments with the consideration of spillover effects of investment spatially. We also identify the gentrified area where middle- and upper-class gentlemen moved in and replaced residents of low-income communities, and identify gentrification types by implementing spatial analysis and the K-Means clustering algorithm. In the end, we conduct a time-series statistical analysis on climate investment intensity and the identified gentrification types, as well as the demographic characteristics of different communities in SFOB MSA.

Our preliminary results show that (1) Green gentrification occurred, especially within disadvantaged communities, between 2015 and 2020 associated with the implementation of climate investments; (2) The degree and characteristics of gentrification are influenced by the intensity and type of investments; (3) Public transportation investment, as the largest part of CCI, has shown the most significant impact on the gentrified process. These results can provide empirical knowledge of the relationship between climate investment and green gentrification, which government and planners could use to better conduct climate infrastructure plans to minimize the negative impact on disadvantaged communities and realize the environmental justice we pursued.

Citations

- Intergovernmental Panel on Climate Change Working Group II. 2022. "IPCC Sixth Assessment Report: Climate Change 2022: Impacts, Adaptation and Vulnerability." Geneva: Intergovernmental Panel on Climate Change (IPCC). <https://www.ipcc.ch/report/ar6/wg2/>.
- Zuk, Miriam, Ariel H. Bierbaum, Karen Chapple, Karolina Gorska, and Anastasia Loukaitou-Sideris. 2018. "Gentrification, Displacement, and the Role of Public Investment." *Journal of Planning Literature* 33 (1): 31–44. <https://doi.org/10.1177/0885412217716439>.
- Checker, Melissa. 2011. "Wiped Out by the 'Greenwave': Environmental Gentrification and the Paradoxical Politics of Urban Sustainability." *City & Society* 23 (2): 210–29. <https://doi.org/10.1111/j.1548-744X.2011.01063.x>.
- Whittington, Jan, and Catherine Lynch. 2015. *Climate-Informed Decisions: The Capital Investment Plan as a Mechanism for Lowering Carbon Emissions*. Policy Research Working Papers. The World Bank. <https://doi.org/10.1596/1813-9450-7381>.

Key Words: Public Climate Investment, Green Gentrification, Spatial Analysis

INTEGRATING TRANSFORMATIVE CLIMATE RESILIENCE IN RE-URBANIZATION PROCESSES. THE CASE OF VILLA 20, BUENOS AIRES. ARGENTINA

Abstract ID: 1051

Individual Paper Submission

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Practices and policies around informal settlement upgrading or re – urbanization developed well before climate change risks were a global concern, and actually much of what good informal settlement up grading provides reduces climate related risks. However anticipatory some of the measures undertaken, there has been little recorded experiences and lessons of informal settlement re – urbanization processes that include a climate resilience lens, much less a transformative one, were aspects of equity, justice and power distribution in decision making gain prevalence (Satterthwaite et al 2020). Notions of decarbonization rarely guide informal settlement re urbanization policies and practices. In addition, a growing body of literature points to the need for caution in framing resilience and climate adaptation related interventions as benefiting everyone, therefore the need to incorporate equality and justice dimensions (Meerow and Newell 2016, Leal Filho, W. et al 2021).

The paper aims to contribute to understand pathways for transformative resilience (Pelling 2011) by responding to the following: 1. Which are the barriers for strong community - local government partnerships to assess and incorporate future risk levels and reduce carbon footprints in informal settlement re urbanization processes?, 2. Which are the appropriate social settings that allow the exploration of innovative tools and frameworks to advance in transformative climate resilience in complex urban settings?, and 3. To what extent new frameworks and alternative practices such as the use of green infrastructure approaches can serve as a means to solve structural-deficits and incorporated as part of routine design, and not as complement that can only be thought of once urgent issues are resolved by conventional means?. Though responses to these questions are context specific some generalizations for the Latin American context can be made.

This research builds from a lived experience: the ongoing re-urbanization process in Villa 20, an informal settlement in the City of Buenos Aires (Argentina) that has a strong participatory platform made up of multiple spaces and devices for consensual decision-making that guide the re-urbanization process (Almansi et al 2020). In Villa 20, several interrelated projects have started to focus on sustainability. In particular, the Transformative Urban Coalitions (TUC) of the International Climate Initiative (IKI) is connecting decarbonization with urban inequalities and urban justice. As researcher and country coordinator of the TUC project in Argentina responses to the above questions derive from 1. Literature review, 2. Actor mapping, 3. Results of surveys and interviews to local actors and base line, 4. Participation in spaces of consensual decision making and co – design, 5. Participation in bi-lateral meetings with local actors (government and none-governmental). Results from this research will provide a valuable contribution to planning, implementation and policy making around re – urbanization processes and the possibilities of decarbonization in cities of the global south.

Citations

- Almansi, F, Motta, M y Hardoy, J. (2020). Incorporating a resilience lens into the social and urban transformation of informal settlements: the participatory upgrading process in villa 20, Buenos Aires (2016-2020). *Environment and Urbanization*, Vol 32, No 2, p. 407 – 428. 1–22. DOI: 10.1177/0956247820935717. <https://journals.sagepub.com/doi/full/10.1177/0956247820935717>
- Leal Filho, W. et al (2021) Whose voices, whose choices? Pursuing climate resilient trajectories for the poor. *Environmental Science and Policy* 121: 18-23
- Meerow, S. and J. P. Newell (2016): Urban resilience for whom, what, when, where, and why? *Urban Geography*. <http://dx.doi.org/10.1080/02723638.2016.1206395>
- Pelling, M. (2011). *Adaptation to Climate Change: From Resilience to Transformation*. New York: Routledge.
- Satterthwaite D., D. Archer, S. Colenbrander, D. Dodman, J. Hardoy, D. Mitlin and S. Patel (2020). Building Resilience to Climate Change in Informal Settlements. *One Earth*, 2: 143 -156. <https://doi.org/10.1016/j.oneear.2020.02.002>

Key Words: decarbonization, green infrastructure, informal settlements, transformative resilience, re urbanization

HOW THE LOSS AND RESTORATION OF URBAN STREAMS RE-SHAPES CITIES: A COMPARATIVE MORPHOLOGICAL ANALYSIS OF SEOUL’S CHEONGGYEcheon RESTORATION AND ZÜRICH’S STREAM DAYLIGHTING

Abstract ID: 1061

Individual Paper Submission

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The unprecedented 20th century urbanization led to the culverting, hence, the disappearance of streams from urban landscapes, severing their urban socio-spatial connections (Broadhead, Horn, & Lerner, 2015). Arising environmental and climate change concerns prompted the reversal of culverting practices through “daylighting” buried urban streams (Wild, Dempsey, & Broadhead, 2019)—impacting, in new ways, these streams’ connections to their surrounding urban morphology. This study investigates the hitherto unexplored urban morphological impacts of urban streams’ loss and eventual restoration through daylighting (Khirfan, Mohtat, & Peck, 2020) through a cross-national comparative study of two fundamentally different approaches to stream restoration in Seoul (S. Korea) and Zürich (Switzerland). While Seoul restored one 7km stretch of the Cheonggyecheon stream in 2004, Zürich has daylighted over 25km of streams spread throughout its urban fabric since 1988 (L. Khirfan, M. L. Peck, & N. Mohtat, 2020). This study is, therefore, multi-layered, comparing: how over time, each city’s streams were lost and restored; how these streams’ loss and restoration impacted urban morphology; and how the two different approaches to stream restoration bear on the socio-spatial connections among other parameters.

Our methodology includes historic archival research, spatial analysis, and a systematic content analysis literature review (L. Khirfan, M. Peck, & N. Mohtat, 2020). Through historic archival research, we acquired historical maps and aerial photos, for each of Seoul and Zürich, before and after the loss of their urban streams. We also acquired contemporary GIS spatial data for Seoul (2015) and Zürich (2020). We georeferenced and digitized the historic maps and aerial photos using ArcGIS: a 500-meter buffer around Seoul’s Cheonggyecheon and Zürich’s twelve districts. The ensuing spatial data led to a multi-layered comparative analysis. Firstly, for each city, we compared how the urban morphological arrangements, namely the town plan’s street networks, building footprints, and urban blocks changed over time vis-à-vis its urban streams. Secondly, combining the spatial data and the systematic content analysis literature review facilitated comparing Seoul’s stream restoration and Zürich’s stream daylighting approaches. Spatially, the comparison contrasted the two approaches’ impacts on the longitudinal connections (the socio-spatial routes along the streams), the lateral connections (like bridges and dams); and the vertical connections (riverbanks) (Kondolf & Pinto, 2017). The literature review facilitated comparing the two approaches along

nine parameters, namely: area, cost, ecology, hydrology, politics and policy, economy, public participation, socio-cultural dimensions, and infrastructure.

The findings reveal how twentieth century urban development that led to the loss of Seoul's and Zürich's streams also severed their longitudinal, lateral, and vertical connections with urban morphology. Both cities opted to 'restore' their urban streams albeit for different reasons. Seoul's mega-project that daylighted 7km of the Cheonggyecheon centred on place making and city branding while Zürich's incremental policy that daylighted over 25 kilometers of small stream segments throughout the city was economically driven by the need to separate clean run-off from the sewage system. These different scales and rationales also differently impacted the ensuing morphological connections. Where Seoul's Cheonggyecheon restoration entailed major morphological changes, Zürich's daylighting bore minimal morphological impacts. Yet, both are effective nature-based solutions that contribute to climate adaptation and mitigation, albeit differently.

Citations

- Broadhead, A. T., Horn, R., & Lerner, D. N. (2015). Finding lost streams and springs captured in combined sewers: a multiple lines of evidence approach. *Water and Environment Journal*, 29(2), 288-297. doi:10.1111/wej.12104
- hirfan, L., Mohtat, N., & Peck, M. (2020). A systematic literature review and content analysis combination to "shed some light" on stream daylighting (Deculverting). *Water Security*, 10, 100067. doi:https://doi.org/10.1016/j.wasec.2020.100067
- Khirfan, L., Peck, M. L., & Mohtat, N. (2020). Digging for the truth: A combined method to analyze the literature on stream daylighting. *Sustainable cities and society*, 59. doi:https://doi.org/10.1016/j.scs.2020.102225
- Kondolf, G. M., & Pinto, P. J. (2017). The social connectivity of urban rivers. *Geomorphology*, 277, 182-196. doi:https://doi.org/10.1016/j.geomorph.2016.09.028
- Wild, T. C., Dempsey, N., & Broadhead, A. T. (2019). Volunteered information on nature-based solutions—Dredging for data on deculverting. *Urban Forestry & Urban Greening*, 40, 254–263. doi:10.1016/j.ufug.2018.08.019

Key Words: Urban streams, Stream daylighting, Urban morphology, Nature-based solutions, Climate adaptation

RESPONDING TO THE PLASTIC CRISIS: LOCAL GOVERNMENT PLASTIC BANS AND CONSUMER BEHAVIOR TOWARDS SINGLE-USE PLASTIC BAGS IN TARLAC, PHILIPPINES

Abstract ID: 1062

Individual Paper Submission

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The global plastic system has been recognized for its contribution to severe environmental problems (Nielsen et al., 2020). Growing concerns in regards to the environmental impacts of single-use plastics have led to plastic bans and taxes. However, past studies have suggested that a myriad of factors influence an individual's single-use plastic consumption habits. For example, Jakovcevic et al. (2014) conducted field studies to test the effects of a charge for single-use plastic bags that was implemented in Buenos Aires City, Argentina. Results demonstrated an increase in reusable bag use since the plastic charge, and the majority of consumers reported that they brought their own bags to protect the environment (Jakovcevic et al., 2014). Similarly, Ari and Yilmaz (2017) found single-use plastic bag reduction rates to be high among individuals who are aware of the impacts of plastic bags on the environment, and who feel a sense of social pressure. In a comparative study of three Northern Philippine municipalities that do not have plastic bans, Crowley (2020) concluded that single-use plastic bag consumption levels were significantly higher in a municipality that provides plastic shredding and recycling compared to two other municipalities that do not provide such a service. Jia et al. (2019) suggest that behavior theory is a suitable method for assisting policy makers with motivating plastic mitigation actions. This theory tells us that an individual makes a demand decision by examining behavioral costs and benefits that come from values in consumption activities (Jia et al., 2019).

Variations in single-use plastic consumption habits are apparent in the Central Philippine Province of Tarlac where a provincial plastic ban was recently adopted by the Governor, but it has not been enforced uniformly throughout Tarlac's seventeen municipalities. The purpose of this research is to incorporate behavior theory to examine the relationship between local plastic bans and individual consumer behaviors pertaining to the consumption of single-use plastics. To address this research question, residents of municipalities in Tarlac with varying levels of plastic ban enforcement were surveyed. Questions pertained to demographic information, frequency of reusable shopping bag use, willingness to pay for a reusable shopping bag, weekly consumption levels of single-use plastic bags, availability of plastic bags at local stores, and perceptions of the environmental impacts of plastics. A multinomial logistic regression model was run to examine factors that influence the overall frequency of using reusable shopping bags

with the following three levels: most of the time, sometimes, and never. A weighted least square regression model was run to examine factors that influence weekly single-use plastic bag consumption levels. Results suggest that a variety of demographic factors, perceptions of the environmental impacts of plastics, and the municipality's plastic ban enforcement level were significant predictors of the frequency of using reusable shopping bags, and the weekly single-use plastic bag consumption levels. Such findings are crucial for understanding effective planning practices for enforcing plastic bans, and motivating individual consumers to make conscious decisions to reduce their single-use plastic consumption levels.

Citations

- Ari, E., & Yilmaz, V. (2017). Consumer attitudes on the use of plastic and cloth bags. *Environment. Development and Sustainability*, 19, 1219-1234.
- Crowley, J. (2020). Plastic bag consumption habits in the Northern Philippines. *Resources, Conservation & Recycling*, 160, 104848.
- Jakovcevic, A., Steg, L., Mazzeo, N., Caballero, R., Franco, P., Putrino, N., & Favara, J. (2014). Charges for plastic bags: Motivational and behavioral effects. *Journal of Environmental Psychology*, 40, 372-380.
- Jia, L., Evans, S., van der Linden, S. (2019). Motivating actions to mitigate plastic pollution. *Nature Communications*, 10, 4582.
- Nielsen, T.D., Hasselbalch, J., Holmberg, K., & Strippel, J. (2020). Politics and the plastic crisis: A review throughout the plastic life cycle. *WIREs Energy and Environment*, 9, e360.

Key Words: Plastic bans, waste management, behavior theory, environmental management, Philippines

ATTAINING CLIMATE JUSTICE THROUGH THE ADAPTATION OF URBAN FORM TO CLIMATE CHANGE: FLOOD RISKS IN TORONTO

Abstract ID: 1063

Individual Paper Submission

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Entrenched cost-benefit rationales underlying most urban form adaptations to climate change unequally exacerbate vulnerabilities and hazard exposures, hence, engender risk inequalities and trigger climate injustice (cite Long & Rice). The three pillars of justice redress climate injustice, namely: distributive justice (the just spatial distribution of adaptation responses); procedural justice (the fairness of decision-making processes); and recognitional justice (the legitimization of marginalized groups) (Klinsky & Mavrogianni, 2020; Schlosberg, 2001). We assessed the extent of the theoretical and empirical integration of these pillars in the planning scholarship through a systematic review of urban climate justice vis-à-vis adaptation interventions that revealed a lack of such integration (Mohtat & Khirfan 2021).

To overcome these omissions, we develop a theoretical framework that connects the climate justice pillars with urban form adaptive interventions for managing climate change-induced floods. Specifically, we: 1) capitalize on the distributive justice's interconnections with differential vulnerabilities, flood exposures, and the adaptive capacity of urban form to identify areas that unequally experience flood risks; 2) expand upon the connections among recognitional justice, epistemic justice (Fricker, 2007), and local experiential knowledge (LEK) to determine the root causes of the risk inequalities; 3) draw on the collaborative planning theory (Godschalk and Mills 1966), to advance the procedural justice in urban form adaptation. We operationalize our theoretical framework using a multi-criteria model whose variables and indicators assess the spatial distribution of social vulnerabilities, exposure, and urban form's adaptive capacity. Our model underscores participatory mapping that includes vulnerable groups' LEK. Specifically, this model facilitates an assessment of "who" is unequally at-risk to flooding events; "where" are they located; "why" they are unequally vulnerable; and "how" can urban form adaptive interventions advance climate justice.

We test our model in Toronto, Ontario where we operationalize our spatial multi-criteria model firstly, through weighted overlay analysis using ArcGIS and an online survey of 120 Toronto-based flooding experts the results of which identified four priority neighborhoods at a disproportionate risk of floods. Surely, these are inner-city high density tower communities with old infrastructure and low-income, racialized, and migrant populations – typical of postwar tower block communities across North America and Europe.

Secondly, we focused on green and blue infrastructure (GBI) planning in one of these neighborhoods, Thorncliffe Park, where we conducted an online survey of its residents and in-depth interviews with its community leaders and flooding experts to investigate how residents' LEK has been recognized in adaptation decisions. Lastly, we performed an online participatory-mapping activity during which neighborhood residents identified locations requiring GBI and overlaid their maps with land use run-off coefficients to inform future planning of site allocations for GBI. Our

findings from Thorncliffe Park reveal that notwithstanding its vulnerability to flooding, its residents' primary concerns are housing and subsistence needs – needs at the core of structural vulnerabilities, hence, our recommendation for planning interventions to combine adaptation interventions and socio-cultural needs central to vulnerability.

Citations

- Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*: Oxford University Press.
- Godschalk, D. R., & Mills, W. E. (1966). A collaborative approach to planning through urban activities. *Journal of the American Institute of planners*, 32(2), 86-95.
- Klinsky, S., & Mavrogianni, A. (2020). Climate justice and the built environment. *Buildings and Cities*, 1(1), 412-428.
- Schlosberg, D. (2001). Three dimensions of environmental and ecological justice. *European Consortium for Political Research Annual Joint Sessions*, Grenoble, 6-11.

Key Words: Climate justice, flooding risk, urban form, green and blue infrastructure, social vulnerability

TRAITS OF A BLOOM: TREE PLANTING INITIATIVES AND IMPLICATIONS FOR URBAN PLANNING RESEARCH AND PRACTICE

Abstract ID: 1129

Individual Paper Submission

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Municipal leaders worldwide are showing substantial interest in urban greening. This encompasses incentives, policies, and programs to vegetate urban landscapes, and it often includes urban tree planting initiatives (TPIs). Over the past decade there has been a seven-fold increase in scholarly use of terms denoting TPIs, and roughly two-thirds of associated studies address TPIs in the United States (U.S.). This reflects a bloom of scholarly interest in TPIs that is also reflected in practice. Indeed, contemporary TPIs and associated programs may reflect a significant chapter in the historical arc of urban greening that has direct implications for landscape planning and design norms. Yet, there has been limited research on contemporary TPIs as historically situated cultural phenomena (Pincetl et al., 2013), and there has been no nationwide assessment of TPIs across municipal scales.

Addressing these gaps, this presentation will report on findings from a survey of 41 TPIs in the United States (Eisenman et al., 2021), reporting on typical traits of U.S. TPIs across six themes: background, dates and goals, public awareness, funding and governance, planting, and stewardship. Respondents identified over 115 traits that distinguish TPIs from typical urban tree planting activity, suggesting that TPIs are a discrete form of urban forestry. Over two-thirds of TPIs are funded separate from traditional urban forestry; this supports concerns noted in previous urban planning scholarship that lack of institutionalization raises questions about the long-term viability of large scale tree planting programs as a form of living green infrastructure (Young, 2011).

TPIs mobilize political and financial resources for program launch, tree purchasing, and planting, but there may be a need for greater investment in stewardship activities and the social infrastructure that undergirds green infrastructure, especially in post-industrial towns that face distinct challenges associated with population decline (Breger et al., 2019). Large shade trees for ecosystem services and native trees are the principal factors informing TPI species lists. Beautification and regulating ecosystem functions are, in turn, the principal potential benefits animating tree planting goals, yet few TPIs have conducted research to assess the fulfillment of associated outcomes. This echoes concerns that the magnitude of ecosystem function benefits of urban trees may be overstated (Pataki et al., 2021).

This study provides a foundation for future scholarship on TPIs, and a basis to investigate the normative implications of TPIs for landscape planning and design in urban settings. Importantly, city planners do not have a significant presence this line of scholarship, and this presentation aims to encourage increased engagement of urban planning researchers on TPIs.

Citations

- Breger, B. S., Eisenman, T. S., Kremer, M. E., Roman, L. A., Martin, D. G., & Rogan, J. (2019). Urban tree survival and stewardship in a state-managed planting initiative: A case study in Holyoke, Massachusetts. *Urban Forestry & Urban Greening*, 43, 126382.

- Eisenman, T. S., Flanders, T., Harper, R. W., Hauer, R. J., & Lieberknecht, K. (2021). Traits of a bloom: A nationwide survey of U.S. urban tree planting initiatives (TPIs). *Urban Forestry & Urban Greening*, 61, 127006.
- Pataki, D. E., Alberti, M., Cadenasso, M. L., Felson, A. J., McDonnell, M. J., Pincetl, S., Pouyat, R. V., Setälä, H. M., & Whitlow, T. H. (2021). The benefits and limits of urban tree planting for environmental and human health. *Frontiers in Ecology and Evolution*, 9.
- Pincetl, S., Gillespie, T., Pataki, D. E., Saatchi, S., & Saphores, J.-D. (2013). Urban tree planting programs, function or fashion? Los Angeles and urban tree planting campaigns. *GeoJournal*, 78(3), 475–493.
- Young, R. F. (2011). Planting the living city: Best practices in planning green infrastructure – results from major U.S. cities. *Journal of the American Planning Association*, 77, 368–381.

Key Words: urban greening, green infrastructure, tree planting initiatives, ecosystem services, landscape planning and design

FACTORS INFLUENCING CITIES TO IMPLEMENT CLIMATE ADAPTATION PLANNING

Abstract ID: 1143

Individual Paper Submission

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This paper will examine the factors influencing cities to implement climate adaptation planning. Despite the imminent threat of climate change, few U.S. cities are adapting to it. A 2011 survey of 248 U.S. cities engaged in sustainable development found that 55% were discussing climate adaptation activities. Yet, in 2021, only 73 of those had a plan addressing adaptation. What factors enabled these cities to implement adaptation planning? How can the success be replicated in other places? Therefore, it is essential to identify the conditions that allowed those cities to advance in the policy process.

The research uses the 2011 survey of cities developed by Dr. JoAnn Carmin at MIT (Massachusetts Institute of Technology) in partnership with ICLEI (Local Governments for Sustainability), augmented with new complementary secondary data from sources such as Yale Climate Opinion, FEMA, Georgetown Climate Center, and the Census. Carmin's research group identified the general stage of adaptation efforts in cities worldwide and factors that hindered them from engaging in climate adaptation. However, it focused on the first step of the policy process, agenda-setting, when an issue becomes a priority for action. Unfortunately, no study has assessed how cities move from discussing climate adaptation to addressing it in a plan. Evaluating the 2011 sample, I found out that, despite a ten-year timeframe, only 29% of cities previously engaged in sustainable development have a plan addressing climate adaptation. Therefore, the current state of knowledge of what influences a city, from discussing adaptation to formulating a plan, is uneven and incomplete.

Climate adaptation is a prime example of urban innovation, defined as new ideas designed and implemented. Cities identified climate change as a problem and are trying to address the issue spontaneously. There is no requirement from the state or Federal government to coerce cities to adapt; they did it independently. According to the diffusion of innovation theory, by studying why early adopters engage in innovation, our insight into the likelihood of adoption among followers is enhanced. Early adopters are involved in climate adaptation (Abunnasr, Hamin, & Brabec, 2015). Therefore, the central goal of this study is to explore the factors influencing climate adaptation through the lenses of innovation theory. For this study, innovators and early adopters are the cities that embraced climate adaptation by declaring engaged in adaptation in the 2011 survey and had a plan by 2021.

Innovation is influenced by motivation, perception of need, resources, and engagement in learning networks. I use logistic analysis to assess how these factors influenced a city to engage in adaptation and implementation. Preliminary results suggest communities with a strong perception of need from public officials and citizens are more likely to become innovators and early adopters of climate adaptation. They also have strong motivation variables; they have specific learning partners and higher financial resources.

As organizations successfully innovate, others are more inclined to adopt it since the risks are lower. But when a plan is the "innovative product," just following a similar document structure will not ensure success. Instead, it is necessary to consider the process and underlying factors that led the early adopter to their innovation. Thus, there is a critical need to determine why some cities take action to adapt to a changing climate. Nurturing climate adaptation in the broader community will be challenging without this knowledge.

Citations

- Carmin, J., Nadkarni, N., & Rhie, C. (2012). Progress and challenges in urban climate adaptation planning: results of a global survey. Cambridge, MA: Massachusetts Institute of Technology.

- Abunnasr, Y., Hamin, E. M., & Brabec, E. (2015). Windows of opportunity: addressing climate uncertainty through adaptation plan implementation. *Journal of Environmental Planning and Management*, 58(1), 135-155.
- Shi, L., Chu, E., & Debats, J. (2015). Explaining progress in climate adaptation planning across 156 US municipalities. *Journal of the American Planning Association*, 81(3), 191-202.
- Mohr, L. B. (1969). Determinants of innovation in organizations. *American Political Science Review*, 63(1), 111-126.
- Downs Jr, G. W., & Mohr, L. B. (1979). Toward a theory of innovation. *Administration & Society*, 10(4), 379-408.

Key Words: climate adaptation, urban innovation, innovation theory, adaptation plans, urban plans

A HEDONIC APPROACH TO COASTAL RESILIENCE IN POST-HURRICANE MARIA'S PUERTO RICO

Abstract ID: 1187

Individual Paper Submission

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Five years have passed since Hurricane Maria devastated Puerto Rico. Throughout its coastal regions, loss in natural infrastructure elements such as beach width reduction, coastal dune flattening (Barreto-Orta et al. 2019; Mayer et al. 2018), coastal wetland loss, live coral cover reduction and fragmentation, and damaged seagrass beds (Hernandez-Delgado et al. 2018; NOAA 2018) were identified after the 2017 hurricane season. Current field work conducted by our research team has shown that widespread physical and natural infrastructure damage is still observed in vulnerable coastal communities.

The Commonwealth of Puerto Rico and local municipal governments are seeking economic development opportunities after experiencing three events with devastating consequences in a five-year period (2017-2022): Hurricane Maria in September, 2017, a magnitude 6.4 earthquake on January 7, 2020, and the COVID-19 pandemic. Economic development in coastal regions of Puerto Rico has partly focused on commercial and housing construction projects. In 2021, 3,277 construction permits were approved by the Puerto Rico Permits Management Office along coastal municipalities (Centro de Periodismo Investigativo, 2022). Rebuilding efforts which include new housing, business and hotel development along coastal regions may lead to increased vulnerability due to the increasing likelihood of sea level rise, coastal erosion and storm surge.

If resilient outcomes are sought as part of a post-Maria coastal development effort, current coastal physical and social vulnerability should be considered to guide any development and reconstruction efforts. To achieve this end, an accessible and replicable coastal vulnerability indicator framework has already been designed to assist commonwealth and federal policy makers in the allocation of funding for coastal recovery (Santiago et al., 2020). The index can also serve as input to the construction permitting process.

Our main research question is: Do homeowners implicitly consider the value of coastal environmental protection attributes when purchasing a property? We seek to enhance the current coastal vulnerability profile by incorporating results from a first stage Hedonic valuation model to assess the value attributed by coastal homeowners to environmental attributes that may provide protection to their properties, including beach width, erosion and accretion levels, flood zone location, coastal type and elevation. Hedonic valuation estimates would allow stakeholders to assess vulnerability from a different angle, through estimates of monetary losses resulting from increased erosion rates, decreases in beach width, and changes in coastal type, flood zone location and elevation. Our hope is that model estimates would assist commonwealth and municipal planning and permitting authorities in the evaluation of coastline development projects, explicitly considering beach width, erosion patterns, and other potential coastal protection resources in the decision-making process.

Citations

- Dundas, S. (2017). Benefits and ancillary costs of natural infrastructure: Evidence from the New Jersey coast. *Journal of Environmental Economics and Management* 85 (2017): 62-80.
- Gopalakrishnan, S., Smith, M., Slott, J. and Murray, A. (2011). The value of disappearing beaches: A hedonic pricing model with endogenous beach width, *Journal of Environmental Economics and Management* 61 (2011): 297-310.

- Jin, D., Hoagland, P., Au, D. and Qiu, J. (2015). Shoreline change, seawalls, and coastal property values. *Ocean and Coastal Management*, 114(2015), 185-193.
- Jinwon Kim, Sukjoon Yoon, Eunjung Yang & Brijesh Thapa (2020) Valuing Recreational Beaches: A Spatial Hedonic Pricing Approach, *Coastal Management*, 48:2, 118-141, DOI: 10.1080/08920753.2020.1732799
- Santiago, L., Barreto, M., Montañez-Acuña, A., Flecha, T., Cabrera, N., Bonano, V., Bracero Marrero, L., and Díaz, E. (2020). A Coastal Vulnerability Framework to Guide Natural Infrastructure Allocation in Compressed Time. *Environmental Management*, 67(1): 67-80.

Key Words: resilience, vulnerability, coastal erosion, extreme weather events

WHOSE CARBON FOOTPRINT? RACE, CLASS AND HISTORICAL CARBON MAPPING

Abstract ID: 1197

Individual Paper Submission

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Over the past two decades, local, state and regional governments have paid increasing attention to household carbon footprints to try and develop policies to limit greenhouse gas emissions. More recently, planning agencies have also been working on climate change mitigation strategies that will address rising sea levels, increasing ferocity of storms and floods, and urban heat waves that will be a part of our ever-warming future. Much of this work has also begun to plan for the reality that climate impacts will not be felt equally, that many of the most historically marginalized communities will be hotter and wetter in the future. This paper, which is part of the “Environmental History of White Flight” project on the history of race, sprawl and sustainability in the American city, looks to combine these two methods of analysis by asking which metropolitan communities have contributed to climate change historically and contemporarily. More broadly, it looks to consider how social processes, such as racism and income inequality, have actually been drivers of climate change.

This project began with an effort to overlay data related to contemporary household carbon use in major American cities with demographic data related to race and income. The goal was to visualize possible correlations between current carbon footprints and race. The initial results can be viewed here: https://ucdscenter.github.io/climate_race_maps/. We did find some relevant connections between household emissions and race, especially as it related to transportation. In cities with stronger public transit systems, communities of color had lower carbon footprints. But one of the larger questions of this project was how the ongoing racialization of metropolitan spaces and infrastructure, particularly all forms of housing and mobility, drove a continued dependence on fossil fuels. Thus we decided that a historical perspective was necessary, and so we began the process of looking for ways to find historic data on household carbon use.

This phase of the project, first, aims to examine historic household carbon emissions of the United States to identify the changing geography of carbon footprints between 1980 and 2017. The estimation uses average household consumption data from the Consumer Expenditure Survey and average household vehicle miles traveled data from the National Household Travel Survey to estimate average household carbon emission in census tract level. The methodology is borrowed from existing research by Jones (2020) and Jones & Kammen (2014) which employed econometrics and input-output model to estimate household carbon emission. This allows us to understand how the geography of carbon emission has changed historically. Then, we address the relationship between carbon emission and demographic information, particularly race and income, to identify which community contributes to the greenhouse gas emissions more, ultimately, to understand whether race and income matter to carbon emission.

The goals of this project are twofold. The first is data exploration, to see which particular places and types of urban development have been the key drivers of carbon use in American cities, and the role of race in those shifts. The second is data visualization, to communicate to officials, planners, advocacy groups and the general public in major American cities how race and resource intensive suburban sprawl are driving America’s metropolitan carbon footprint. We are currently completing our data analysis with the goal of publishing the second phase of historical visualizations by August 2022. This paper will outline project goals and methodology, as well as explore our initial analysis and visualizations.

Citations

- Jones, C., & Kammen, D. M. (2014). Spatial distribution of US household carbon footprints reveals suburbanization undermines greenhouse gas benefits of urban population density. *Environmental Science & Technology*, 48(2), 895-902.
- Jones, C., “Consumption Based Greenhouse Gas Inventory of San Francisco from 1990 to 2015,” Berkeley Energy and Climate Institute, 2020 <https://escholarship.org/uc/item/4k19r6z7>.

- Cohen D. A. and Ummel K. 2019. "Follow the Carbon: The Case for Neighborhood-Level Carbon Footprints." Policy Digest. Kleinman Center for Energy Policy. July 2, 2019. <https://kleinmanenergy.upenn.edu/research/publications/follow-the-carbon-the-case-for-neighborhood-level-carbon-footprints/>
- Yusoff, K. A Billion Black Anthropocenes or None (Minneapolis: University of Minnesota Press, 2019).
- Gioielli, R. "Mobility, Race and Climate in Postwar Atlanta," American Studies (AMSJ), 60 (3-4), 17-42.

Key Words: Climate, Race, Visualization, Sustainability

PLANNING-CENTERED MODEL OF COMMUNITY RELOCATION: LESSONS LEARNED OVER 6 YEARS FROM TYPHOON HAIYAN

Abstract ID: 1199

Individual Paper Submission

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Relocation is associated with adverse outcomes (Ferris, 2011). Past research suggests that relocation disrupts social ties and financial networks, which poor populations – often the target of government-led relocation – heavily rely on (e.g., Vanclay, 2017). Relocation also has a negative psychological impact, as unexpected life events can create emotional stress (Esnard & Sapat, 2014). In post-disaster relocation, new sites are usually prepared in government-owned remote locations in order to develop quickly under time pressure (Balachandran, Olshansky, & Johnson, 2021). However, research findings on negative consequences tend to focus on the early phase of post-relocation and are limited to a longitudinal understanding of the adaptation processes of relocating communities.

This paper longitudinally explores a large-scale relocation of typhoon-affected coastal communities, and presents a new planning-centered model of community relocation, adding a layer to classic resettlement models (Scudder, 1985). It focuses on coastal residents targeted for relocation in the Tacloban City of Leyte Province, the Philippines, affected by 2013 Typhoon Haiyan. The study used an ethnographic approach, including observation, interviews, and unofficial conversations, which lasted from March 2014 to March 2020. Highlights of the research include the changing perception of communities on relocation. To collect data, we conducted semi-structured, open-ended interviews targeting more than 400 residents from both the new relocation sites and original coastal neighborhoods.

There are two major findings. First, there was a noticeable change in the community's perception of relocation. Early on, residents were excited about relocating to the safer yet remote area for security reasons. However, their feelings toward relocation started to change after some time, as their concern shifted from hazard reduction to everyday survival and reestablishing life. In the last phase, residents' feelings toward relocation became optimistic again, as they put effort into improving their living environment to adapt to the new location. Second, despite residents' housing location in the relocation process, whether close to or far from their original neighborhoods, their central concern was securing everyday life and thus continuously improvised ways to survive better. This was especially evident when residents began keeping two houses – one in the original neighborhood and one in the new site. Even when the new housing was ready to live in, residents either kept or built new barracks back in their old neighborhoods. It was critical for them to make a living and connect to the social and economic networks in their original neighborhoods. Such strategies developed in the relocation process support the idea that low-income residents are, in fact, much more innovative and resourceful than what has been presented in earlier research findings.

The proposed planning-centered model of community relocation is based on the finding that residents' perception of relocation changes over time, from reducing hazards to reestablishing life and adapting to a new environment. Despite the changing mindsets and displaced locations of the relocating residents in the relocation process, "sustaining daily life" had always been the central issue for them. Thus, securing life stability should be a central concern when planning relocation while also considering the impact of time on their psychosocial feelings. Therefore, securing access to economic and social opportunities, whether creating new or keeping the old, is vital in every phase of community relocation. Because community relocation is an evolving process and residents are much more resourceful than previously understood, relocating residents would benefit from the opportunity to co-design both the planning and implementation of relocation.

Citations

- Balachandran, B., Olshansky, R. B., & Johnson, L. A. (2021). Planning for disaster-induced relocation of communities., 1-17. doi:10.1080/01944363.2021.1978855
- Esnard, A., & Sapat, A. (2014). Displaced by disaster: Recovery and resilience in a globalizing world. New York: Routledge. doi:10.4324/9780203728291
- Ferris, E. (2011). Planned relocations, disasters, and climate change. Paper presented at the Conference on Climate Change and Migration in the Asia-Pacific: Legal and Policy Responses, Sydney. 1-25.

- Scudder, T. (1985). A sociological framework for the analysis of new land settlements. In M. M. Cernea (Ed.), *Putting people first: Sociological variables in rural development* (2nd ed., pp. 148-187). New York: Published for the World Bank by Oxford University Press. Retrieved from <http://www.loc.gov.proxy2.library.uiuc.edu/catdir/enhancements/fy0638/85011574-d.html>
- Vancly, F. (2017). Project-induced displacement and resettlement: From impoverishment risks to an opportunity for development? *Impact Assessment and Project Appraisal*, 35(1), 3-21. doi:10.1080/14615517.2017.1278671

Key Words: Community relocation, Planning-centered model, Typhoon Haiyan, Longitudinal research, Time

DERIVING SPATIAL CHARACTERISTICS OF URBAN HEAT ISLAND EFFECT BASED ON THE LOCAL CLIMATE ZONE: A CASE STUDY OF SHANGHAI, CHINA

Abstract ID: 1204

Individual Paper Submission

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Local Climate Zones (LCZs) is an urban morphological unit that decipher the principles of urban thermal environment in terms of spatial scale and design elements. LCZs can decipher the principles of urban thermal environment and improve the analysis of blurred urban-rural boundaries in the definition of urban heat island (UHI) effect. Previous studies try to find correlation between LCZ and UHI, however, few have successfully quantified the contribution of each LCZ type to land surface temperature (LST). Also, there is a lack of investigation in proposing spatially targeted strategies for urban development. In this study, we analyze Shanghai's spatial variation using the Local Indicators of Spatial Association (LISAs) and Hot Spots methods. We specify the outliers and clusters of hot/cold islands and further analyze the causality from the perspective of spatial structure, composition, and environment. The LCZ of the central area was mapped using the World Urban Database and Access Portal Tool (WUDAPT) and the characteristic scale of LCZ to UHI was detected by Geodetector. The influence and interactions of LCZs on LSTs were quantified from the perspective of structure type, spatial openness, and development intensity. We found that (1) High-High clusters show a spatial pattern of spreading from the central face to the surrounding belt, which is consistent with the direction and level of urbanization; Low-Low clusters are basically distributed along the coastline; LH-Outliers are divided into four categories: transportation hubs, industrial/industrial parks, CBD and dense residential areas; (2) The optimal study scale is 300 m, with LCZ-1(compact high-rise), LCZ-4(open high-rise), and LCZ-5(open mid-rise) types dominating the central area; (3) The built-up type has a lower explanatory degree than the nature type. The influence of LCZ-G(water) was the largest (influence=0.2260); and (4) LCZs exhibit bi-linear or non-linear enhanced relationships in the interactions. Findings provide urban planners and policy makers with theoretical guidance for climate-sensitive planning.

Citations

- Rowe, P.G., Kan, H., Guan, C. Eds. (2013). *Methodological Notes on the Spatial Analysis of Urban Formation*. Cambridge, MA. Harvard University Graduate School of Design. ISBN: 978-1-934510-35-3.
- Bechtel, B., & Daneke, C. (2012). Classification of Local Climate Zones Based on Multiple Earth Observation Data. *Ieee Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 5(4), 1191-1202. doi:10.1109/Jstars.2012.2189873
- Gao, J., Gong, J., Yang, J. X., Li, J. Y., & Li, S. C. (2022). Measuring Spatial Connectivity between patches of the heat source and sink (SCSS): A new index to quantify the heterogeneity impacts of landscape patterns on land surface temperature. *Landscape and Urban Planning*, 217.doi:ARTN 104260
- Guan, C.*, Peiser, R. (2018) Accessibility, urban form, and property value: A study of Pudong, Shanghai. *Journal of Transport and Land Use*, 11(1) 1057-1080. (SSCI) . doi: 10.5198/jtlu.2018.1318

Key Words: local climate zone, urban spatial pattern, climate adaptation planning, urban heat island, urban morphology

CREATIVE RESPONSES TO THE HIDDEN AND AGING DAM INFRASTRUCTURE

Abstract ID: 1214

Individual Paper Submission

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Dams provide important community benefits, such as flood control, water supply, recreation, and hydropower among others; however, dams are also aging, obsolete in many cases, and failing, threatening human safety, structures, and environmental resources. Since 1980, roughly 1,000 of the 90,000 dams in the United States have failed. The cascading failures of Michigan's Edenville and Sanford Dams in 2020 demonstrated their potential impacts. Though no lives were lost, these failures impacted 2,500 structures, causing nearly \$250 million dollars in damages. Land use changes, unanticipated water volume variation, neglected maintenance, and expensive repairs all increase the risks of dangerous dam failures. Despite the high financial and environmental costs associated with dam failures, there are few strategies and limited funding for proactively managing dams and variable regulations across the US. Although states regulate dams, private owners and public authorities are responsible for managing the dams and their surroundings. In the age of climate change, aging dams are easily overlooked by all of these actors despite their looming danger.

As concerns rise around aging dams and the uncertainty and risk that climate change poses to infrastructure planning, we ask in this project: 1) What creative approaches to dam management are states and local governments pursuing?; and 2) What makes these approaches effective in addressing dam management challenges? Through a national U.S. scan, we selected five existing approaches to dam management as possible strategies for wider implementation: emergency action planning regulations in California; land use planning in Virginia; local taxation authorities in Texas; dam update funding programs in Massachusetts; and expedited dam removals in Pennsylvania. We developed case studies of each approach based on interviews with 21 local and state regulators, dam owners, planners, and non-governmental organization (NGO) partners in dam management; site visits to 10 dams in Massachusetts and Pennsylvania, and document analysis to review key policies, reports, and legislative documents.

The effectiveness of these five approaches depended on interventions from state and local governments and the support of NGOs. State regulations and enforcement in California led to improved adoption of Emergency Action Plans, preparing communities for potential dam breach events. Through data collection and a new state code which prevents development in dam break inundation zones, the Commonwealth of Virginia is deterring development in these zones, and thus reducing flood risk. The Baker-Polito administration for the Commonwealth of Massachusetts is incentivizing dam upgrades and renewals through a new funding program. Pennsylvania actively promotes dam removals through communication programs with dam owners and streamlined permitting processes. Finally, despite an environment of deregulation of dams in Texas, local governments such as Water Control Improvement Districts are developing property taxes to support the maintenance and improvement of their flood control dams. These progressive management efforts often resulted from a combination of experiences with dam breach events, climate change planning efforts, and the support of stakeholders, such as NGO partners, state government officials, or regional planning agencies. Strong NGO participation, in particular, helped initiate and maintain dam modification and removal efforts.

These findings will inform recommendations for improved dam management practices across the U.S. The need for promising practices is especially relevant with the passage of the national Infrastructure Bill - which earmarked \$2.3 billion for dam removals, retrofitting, and rehabilitation. With recent dam failure events looming and climate change effects worsening, strategic use of such funding for infrastructure planning is urgent.

Citations

- Fluixá-Sanmartín, J., Altarejos-García, L., Morales-Torres, A., & Escuder-Bueno, I. (2018). Review article: Climate change impacts on dam safety. *Natural Hazards and Earth System Sciences*, 18(9), 2471–2488. <https://doi.org/10.5194/nhess-18-2471-2018>
- Hansen, H. H., Forzono, E., Grams, A., Ohlman, L., Ruskamp, C., Pegg, M. A., & Pope, K. L. (2020). Exit here: strategies for dealing with aging dams and reservoirs. *Aquatic Sciences*, 82(1), 1–16. <https://doi.org/10.1007/s00027-019-0679-3>
- Congressional Research Service. (2019). *Dam Safety Overview and the Federal Role*.
- Lieb, B. D. A., Casey, M., & Minkoff, M. (2019). AP investigation: Aging US dams pose risk to thousands. Associated Press. Retrieved from <https://apnews.com/article/75b1cd657f3e4fa3be6adaf968eb7df4>
- Michigan Department of Environment, Great Lakes, and Energy. (2020). Preliminary Report on the Edenville Dam Failure, Response Efforts, and Program Reviews. 31. Retrieved from https://www.michigan.gov/documents/egle/egle-EdenvilleDamPreliminaryReport_700997_7.pdf

Key Words: Dams, Infrastructure Planning, Climate Change, Risk, Environmental Planning

RESIDENTIAL MOBILITY AND EXPOSURE TO CLIMATE HAZARDS IN NORTH CAROLINA

Abstract ID: 1217

Individual Paper Submission

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Climate change is anticipated to affect migration patterns through both climate extremes and slow-onset changes such as sea level rise (McLeman & Smit, 2006). Evidence from a range of contexts has shown that extreme weather events (e.g., extreme heat, wildfire, flooding) affect the frequencies and patterns of international and domestic migration (Berleemann & Steinhardt, 2017). However, residential mobility can also exacerbate exposure to climate extremes. In the US, migration has led to increases in the population exposed to coastal hazards and in wildfire-prone areas (Climate Central & Zillow, 2018; Radeloff et al., 2018). The extent to which residential mobility increases or decreases exposure to climate hazards is likely to vary substantially across groups. For example, socioeconomically and demographically vulnerable subpopulations may be more likely to be displaced by climate extremes due to older, low-quality housing, but may also face resource constraints that prevent them from moving to safer places. Wealthier households have the resources to out-migrate, but those resources can also serve to protect themselves in place.

How is exposure to climate hazards influenced by residential mobility, and how does this relationship differ across groups? While most studies have focused on the effects of climate extremes on migration, here we examine the reverse: how an individual's migration history affects their exposures by either moving away from or towards hazardous areas. We leverage a unique dataset of individual address histories covering over 15M individuals – most living adults ever residing in North Carolina. We use those address histories to track exposures to three different hazards: extreme temperatures, wildfire-induced air pollution (PM_{2.5}), and riverine and coastal floods. We quantify if and how much residential mobility alters lifetime exposure to those hazards for the study population. Since local knowledge may influence decisions about where to move, we examine differences between short- and long-distance moves, as well as differences between people who move often vs. infrequently. Additionally, we compare the impacts of residential mobility on exposure across gradients of social vulnerability at the neighborhood scale, such as socioeconomic status, disability, minority status, and housing type. The results demonstrate where and for whom residential mobility serves as a pathway to safer ground, as opposed to leading to more people in harm's way. Our findings not only reflect the aggregate relationship between migration and exposure to climate hazards, but also how different sub-populations are and are not able to move to protect themselves.

Understanding the diverse relationships between residential mobility and climate hazards can enable more resilient housing and land use planning by indicating where safe housing is necessary and where demand for risky housing may pose challenges in the future. As climate change worsens, considering in- and out-migration in relation to climate risk is increasingly critical for community resilience.

Citations

- Berleemann, M., & Steinhardt, M. F. (2017). Climate change, natural disasters, and migration-a survey of the empirical evidence. *CESifo Economic Studies*, 63(4), 353–385. <https://doi.org/10.1093/cesifo/ifx019>
- Climate Central, & Zillow. (2018). Ocean at the Door: New Homes and the Rising Sea. http://assets.climatecentral.org/pdfs/Nov2018_Report_OceanAtTheDoor.pdf?pdf=OceanAtTheDoor-Report
- McLeman, R., & Smit, B. (2006). Migration as an adaptation to climate change. *Climatic Change*, 76(1–2), 31–53. <https://doi.org/10.1007/s10584-005-9000-7>
- Radeloff, V. C., Helmers, D. P., Kramer, H. A., Mockrin, M. H., Alexandre, P. M., Bar-Massada, A., Butsic, V., Hawbaker, T. J., Martinuzzi, S., Syphard, A. D., & Stewart, S. I. (2018). Rapid growth of the US wildland-urban interface raises wildfire risk. *Proceedings of the National Academy of Sciences*, 115(13), 3314–3319. <https://doi.org/10.1073/pnas.1718850115>

Key Words: climate change, migration

TRACKING AND MINING THE LITERATURE ON CLIMATE CHANGE RESILIENCE IN PLANNING

Abstract ID: 1245

Individual Paper Submission

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As climate change-induced natural disasters increasingly strike cities, how to improve resilience to climate change has become critically important but challenging for urban planning practitioners (Meerow et al., 2016; Sharifi et al., 2017). Although there is increasing literature assessing various mitigation and resilience strategies through different geographic and hazard contexts, it remains unclear what the climate change resilience literature's overall trend, characteristics, and evolutionary patterns are. In addition, it is also not clear what the major research gaps are and what the future research directions are.

This study aims to provide a comprehensive examination of the evolution of the climate change resilience literature, with a focus on planning-related journals. Specifically, the following research questions are addressed: what is the

global trend of scientific publication on climate change resilience in planning? What themes are uncovered from its evolution in various phases? And what are the future directions of research in this field? We investigated these research questions using both bibliometric analysis and text mining methods. The bibliometric analysis is used to explore the meta information of published papers in a broader field, such as topics, authors, affiliations, etc. Text mining method (Fang and Ewing, 2020) is adopted to further extract more information from the full content of the literature and identify specific topic models in the planning field.

Results show that the topic of resilience research to natural disasters has evolved from floods and hurricanes to power and technology. When discussing urban resilience in the planning field, there is an extensive collaboration among scholars from different disciplinary backgrounds, such as geography, environmental science, sociology, public administration, and psychology. In addition, we found that most research focused on vulnerability rather than on resilience itself, and their research focuses have also changed from spatial planning to green infrastructure and environmental justice. Co-occurrence words and topic model reflect the research network on various clusters of themes, such as farm-agriculture-drought, vulnerability-household-income, government (multilevel)-project-funding. The study provides new insights to help us systematically understand the climate change resilience literature. Through this research endeavor, the identified research gaps, needs, and directions will also facilitate future planning practice to enhance resilience to climate change disruptions.

Citations

- Fang, L., & Ewing, R. (2020). Tracking Our Footsteps: Thirty Years of Publication in JAPA, JPER, and JPL. *Journal of the American Planning Association*, 86(4), 470-480.
- Meerow, S., Newell, J. P., & Stults, M. (2016). Defining urban resilience: A review. *Landscape and urban planning*, 147, 38-49.
- Sharifi, A., Chelleri, L., Fox-Lent, C., Grafakos, S., Pathak, M., Olazabal, M., ... & Yamagata, Y. (2017). Conceptualizing dimensions and characteristics of urban resilience: Insights from a co-design process. *Sustainability*, 9(6), 1032.

Key Words: resilience, climate change, planning, text mining, bibliometric analysis

HOW WORLDVIEWS INFORM STAKEHOLDER PREFERENCES FOR COASTAL HOUSING ADAPTATION STRATEGIES

Abstract ID: 1246

Individual Paper Submission

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Coastal communities face unprecedented challenges due to growing flood hazards like sea level rise and storm surge. How should these communities adapt in the face of uncertain flood risk, and how should public dollars be prioritized to aid these communities? Given limited resources and the great number of people and assets at risk in the coastal zone, investing in adaptation strategies will involve equity and efficiency tradeoffs (Chandra-Putra & Andrews, 2019). Some populations may win while others lose. Some strategies may be politically popular in the short run but inefficient over time, and prone to giving a false sense of security. Designing coastal adaptation policies that are socially desirable and politically feasible requires careful risk analysis, evaluation of alternatives, and public engagement. This paper focuses on the engagement piece to better understand the perspectives of decision-makers and residents regarding coastal adaptation strategies in the case study township of Toms River, New Jersey.

The paper builds on prior empirical work that examines the spatial distribution of FEMA funded home buyouts and elevations, two popular coastal adaptation strategies at the household level. To be implemented through FEMA's Hazard Mitigation Grant Program (HMGP), projects must meet a series of criteria, including cost-effectiveness. Prior work on buyouts across the U.S. suggests that the evaluation criteria and processes for approving buyouts may benefit Whiter and wealthier communities while displacing minority and low-income communities (Siders, 2019). In coastal shoreline counties, we find that elevations tend to be in zip codes with higher proportions of White population compared to buyouts. These findings raise concerns about the equity and efficiency tradeoffs of federally funded buyouts and elevations in the coastal zone.

The research for this paper helps build a theory basis to better explain why elevations concentrate in some locations versus others. Building upon prior work on the sociology of climate change, our central research question is: What worldviews inform different stakeholder preferences toward federally funded coastal risk reduction strategies?

We focus on the case study of Toms River, New Jersey, a place which we have identified as having one of the highest proportions of FEMA funded home elevations compared to other coastal municipalities. We conducted 10 interviews with decision-makers at the federal, state, and local levels who are involved in preparing and approving HMGP projects. We also interviewed 10 residents in Ortley Beach, a barrier island community in Toms River that has seen

repetitive loss but prefers to continuously rebuild and elevate as an adaptation strategy. Following Bessette et al., 2017, we use Value-Informed Mental Modeling (ViMM) to unpack how values inform stakeholder preferences. Adopting Kahan's cultural cognition approach to the cultural theory of risk, we use a short form survey to measure worldviews following the interviews (Kahan, 2012). Findings suggest that people with hierarchical-individualistic worldviews tend to prefer that government direct resources toward strategies that enhance their property values.

This research helps fill important gaps in coastal climate adaptation policy and planning. According to Buchanan et al., 2019, "there are limited empirical studies on the influence of households' values and biases on coastal adaptation." By exploring this relationship further, we hope to contribute to a theory basis that can help make sense of larger trends and "promote collective management of public perceptions of risk and the effect of policies for mitigating them" (Kahan, 2012).

Citations

- Bessette, D. L., Mayer, L. A., Cwik, B., Vezér, M., Keller, K., Lempert, R. J., & Tuana, N. (2017). Building a Values-Informed Mental Model for New Orleans Climate Risk Management: Building a ViMM for New Orleans Climate Risk Management. *Risk Analysis*, 37(10), 1993–2004. <https://doi.org/10.1111/risa.12743>
- Buchanan, M. K., Oppenheimer, M., & Parris, A. (2019). Values, Bias, and Stressors Affect Intentions to Adapt to Coastal Flood Risk: A Case Study from New York City. 11, 13.
- Chandra-Putra, H., & Andrews, C. J. (2019). An integrated model of real estate market responses to coastal flooding. *Journal of Industrial Ecology*. <https://doi.org/10.1111/jiec.12957>
- Kahan, D. M. (2012). Cultural Cognition as a Conception of the Cultural Theory of Risk. In S. Roeser, R. Hillerbrand, P. Sandin, & M. Peterson (Eds.), *Handbook of Risk Theory* (pp. 725–759). Springer Netherlands. https://doi.org/10.1007/978-94-007-1433-5_28
- Siders, A. R. (2019). Social justice implications of US managed retreat buyout programs. *Climatic Change*, 152(2), 239–257. <https://doi.org/10.1007/s10584-018-2272-5>

Key Words: Coastal adaptation, Housing, Engagement, Worldviews, FEMA

THE IMPACT OF POST-HURRICANE RECOVERY STRATEGY ON HOUSE RECOVERY: A CASE STUDY OF HURRICANE MICHAEL IN FLORIDA USING STREET VIEW IMAGES

Abstract ID: 1257

Individual Paper Submission

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Postdisaster recovery inevitably involves the tension between speed and quality, which are the two sides of postdisaster recovery. On one hand, speed is the key to ensure local businesses alive and provide short-term and long-term housing for residents and victims. For instance, if it takes two decades for a community to build back, residents and victims may have migrated to other cities. On the other hand, even though expediting recovery is important, it is necessary to spend more time carefully arranging the postdisaster reconstruction. If the community recovers fast, it may imply that there are not adequate discussions with stakeholders. Specially, if the local government aims to reduce risk and rebuild homes shortly after the disaster, the urgent pressure can result in ineffective planning, the unexpected increasing long-term vulnerability of damaged areas.

Despite the importance of the trade-off between speed and quality, it has not been quantitatively examined in previous studies. More specifically, even though the speed and deliberation issue has been discussed theoretically and qualitatively examined on the city or regional level, the problem has not been examined on the parcel level. Specifically, researchers have developed the concept of "time compression" to theorize how the time-compressed environment distorts the recovery quality from the perspective of capital services. However, the theory has not been empirically demonstrated yet. In addition, researchers have qualitatively examined the tension of "speed vs. quality" based on interviews for postdisaster recovery in Japan and Turkey and analyzed the phenomena on a macro level. However, the results indeed are not explicitly enough for guiding the neighborhood recovery, which needs more specific guidance of parcel-level projects.

Therefore, the purpose of this research is to fill these gaps by examining two topics: the impacts of resilience strategies on the housing recovery speed and impacts of resilience strategies on the home sale behavior. Specifically, it would employ Mexico Beach, FL as a study area to examine the effects of local planning on recovery progress. Hurricane Michael, as a Category 5 hurricane, made landfall in northwest Florida on October 10, 2018. Mexico Beach was totally wiped out due to the strong wind and storm surge. For recovery, the city council and planning agency developed two resilience strategies to make the community more resilient: elevation ordinance and wind-load ordinance. Using Mexico Beach as a case study, it firstly employed street view images to quantify the parcel level damage and recovery. Next, it aims to understand the effectiveness of resilience strategy in terms of reducing damage in a natural disaster event.

The result indicates that the resilience strategy would partially slow the recovery progress. In this case, elevating houses may slow the reconstruction speed whereas wind load strategy does not make a difference. This pattern also applies to home sale behavior. That is, if the property is required to be elevated in the reconstruction phase, the odds of the property being sold would increase. These findings are consistent with the “speed vs. quality” issue it stated in the very beginning. By filling the gaps stated earlier, the contribution of this research relies on two aspects: (1) It introduced an approach to examine the “speed vs. quality” problem on the parcel level; (2) It demonstrated that the “speed vs. quality” could happen when the resilience strategy is applied for post-disaster reconstruction.

Citations

- Olshansky, R. B., Johnson, L. A., & Topping, K. C. (2006). Rebuilding communities following disaster: Lessons from Kobe and Los Angeles. *Built Environment*, 32(4), 354-374.
- Olshansky, R. B., Hopkins, L. D., & Johnson, L. A. (2012). Disaster and recovery: Processes compressed in time. *Natural Hazards Review*, 13(3), 173-178.
- Zhai, W., & Peng, Z. R. (2020). Damage assessment using Google street view: evidence from hurricane Michael in Mexico beach, Florida. *Applied geography*, 123, 102252.
- Platt, S., & So, E. (2017). Speed or deliberation: a comparison of post-disaster recovery in Japan, Turkey, and Chile. *Disasters*, 41(4), 696-727.
- Curtis, A., & Fagan, W. F. (2013). Capturing damage assessment with a spatial video: An example of a building and street-scale analysis of tornado-related mortality in Joplin, Missouri, 2011. *Annals of the Association of American Geographers*, 103(6), 1522-1538.

Key Words: Postdisaster Recovery Planning, Recovery Speed, House Recovery, Google Street View Image

MANDATED GREEN INFRASTRUCTURE PLANNING: WHAT MAKES DIFFERENCES?

Abstract ID: 1269

Individual Paper Submission

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A growing number of cities are adopting green infrastructure to address urban issues. In the United States, this trend has been obvious, especially in wastewater and stormwater management (Matsler et al. 2021; Fletcher et al. 2015). In 2007 when the Environmental Protection Agency (EPA) issued a series of policy memos encouraging the use of green infrastructure and acknowledging the economic burdens of local governments and the cost-effectiveness of green infrastructure (EPA 2007). Since then, the federal agency has included green infrastructure terms in some consent decrees to enforce green infrastructure planning and implementation. The term green infrastructure first appeared in a federal consent decree in 2010. Some early adopters started to complete their green infrastructure planning and implementation requirements. This study investigates how green infrastructure provisions in a consent decree have affected local green infrastructure planning through two case studies: Cleveland, Ohio, and St. Louis, Missouri.

Building upon Yin (2018)’s case selection logic, this study selected two cases that “predict contrasting results but for anticipatable reasons (Yin 2018, 55).” Both local governments entered into the federal consent decrees with green infrastructure requirements in the early 2010s and accomplished major compliance projects. Despite similarities in environmental and socioeconomic contexts in postindustrial cities (Schilling and Logan 2008), the EPA’s green infrastructure enforcement approach to each case was drastically different. To understand how such differences in requirements made differences in planning and practice, this study analyzes public documents, including consent decrees, plans, and progress reports, and interviews with green infrastructure program managers at the federal, state, and local governments.

The findings of this study illuminate three aspects of green infrastructure planning and implementation for wastewater and stormwater management, particularly in the federal enforcement context. First, each case shows how the consent decree parties, EPA, state, and local governments negotiated the terms for green infrastructure adoption. Second, the cases describe how the local governments developed and implemented plans for green infrastructure. Finally, in addition to the lessons from early implementation, the cases demonstrate the next steps of local green infrastructure planning, beyond the consent decree mandates.

Citations

- EPA, Environmental Protection Agency. 2007. “Use of Green Infrastructure in NPDES Permits and Enforcement.” Environmental Protection Agency. https://www.epa.gov/sites/production/files/2015-10/documents/gi_memo_enforce_o.pdf.

- Fletcher, Tim D., William Shuster, William F. Hunt, Richard Ashley, David Butler, Scott Arthur, Sam Trowsdale, et al. 2015. "SUDS, LID, BMPs, WSUD and More – The Evolution and Application of Terminology Surrounding Urban Drainage." *Urban Water Journal* 12 (7): 525–42. <https://doi.org/10.1080/1573062X.2014.916314>.
- Matsler, A. Marissa, Sara Meerow, Ian C. Mell, and Mitchell A. Pavao-Zuckerman. 2021. "A 'Green' Chameleon: Exploring the Many Disciplinary Definitions, Goals, and Forms of 'Green Infrastructure.'" *Landscape and Urban Planning* 214 (October): 104145. <https://doi.org/10.1016/j.landurbplan.2021.104145>.
- Schilling, Joseph, and Jonathan Logan. 2008. "Greening the Rust Belt: A Green Infrastructure Model for Right Sizing America's Shrinking Cities." *Journal of the American Planning Association* 74 (4): 451–66. <https://doi.org/10.1080/01944360802354956>.
- Yin, Robert K. 2018. *Case Study Research and Applications: Design and Methods*. Sixth edition. Los Angeles: SAGE.

Key Words: green infrastructure, environmental policy and planning, stormwater management

SAME GOAL FOR CARBON NEUTRALITY, DIFFERENT GROWTH PATHS?

Abstract ID: 1309

Individual Paper Submission

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[Central Theme and Research Objective]

In the process of achieving carbon-neutral goal, enormous costs can be incurred by the supply shock on energy sector. Costs may vary depending on geographical characteristics and socioeconomic conditions of each region. If the central government present a goal for 2050 carbon net zero, could all regions reach the goal without hindering sustainable growth? Or aren't there different optimal sustainable growth paths for each region to be carbon neutral? The purpose of this study is to derive optimal growth paths for regional energy transition that does not hinder regional sustainable growth in the era of carbon neutrality.

[Approach and Methodology]

We selected South Korea's metropolitan local governments, which are vulnerable to energy supply shocks due to their high dependence on energy, as the target area for analysis. First, 15 metropolitan regions were categorized into several types. Through a review of related literature such as national greenhouse gas inventory data and IPCC guidelines, we examined carbon emission characteristics of each regional type, and analyzed regional response to the shock of the 1997 foreign exchange crisis through the vector autoregressive (VAR) model on the basis of carbon emission trend changes. We applied the impulse-response functions derived above to the Hartwick (1977) rule-based optimal model and analyze regional optimal growth paths for energy transition.

[Findings]

As a result of regional types classification analysis, 15 regions could be classified into four regional types (Energy Production Type; Urban Consumption Type; Industrial Type; Absorption Type) according to carbon emission characteristics. Using GRDP (Growth Regional Domestic Product), population, the number of employee in each region as response variables, we analyzed impulse-response on energy sector. We selected GRDP and the number of employee to analyze regional economic growth, and population to analyze regional growth. As a result, the trend fluctuations of regional economic variables were different for each regional type. In the case of Energy Production Type (EPT), supply shock on the energy sector had a significant negative effect on all response variables. On the other hand, there was no significant variation in Urban Consumption Type (UCT) by supply shock for any variable, and the Industrial Type (IT) and Absolute Type (AT) only responded by the number of employees. The patterns of response are different for each regional type in time. Finally, we derived the optimal sustainable growth path for each regional type considering the energy supply shock in the process of transition to a carbon-neutral society in 2050. In the process of reaching carbon neutrality with sustainable growth in 2050, EPT and IT should establish a more gradual growth path before 2030, and CPT has been shown to be the best path to establish a more active carbon neutral growth path than other regions. AT needs to establish a growth path that maintains the status quo in a way that does not damage carbon absorption such as forests as much as possible. In conclusion, optimal sustainable growth path was different for each regional type.

[Discussions]

Due to the limitations of statistical data, this study is localized based on carbon emissions per metropolitan area. There has not enough sample size to analyze impulse-response function. There is also a limitation in that we could not analyze the effect of the supply shock on the AD-AS curve because regional inflation data are not available. In this study, we tried a bold attempt to see the impact of energy supply shock through trends in carbon emissions, but economically and theoretically, sufficient discussion has not been made yet. Therefore, it is necessary to discuss these methodological and planning issues.

Citations

- Park, Ho-Jung. (2021). Is Carbon Neutral Policy Compatible with Sustainable Economic Growth?, *Envir*
- Pisani-Ferry, J. (2021). Climate policy is macroeconomic policy, and the implications will be signi
- ESRB Advisory Scientific Committee. (2016). Too late, too sudden: Transition to a low-carbon economy
- IEA (International Energy Agency). (2021). Net Zero by 2050: A Roadmap for the Global Energy Sector

Key Words: Carbon neutrality (Carbon Net-zero), Climate change, Optimal control theory, Energy transition, Supply shock on energy sector

POLITICAL ECONOMY OF AIR POLLUTION IN KENYA

Abstract ID: 1351

Individual Paper Submission

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Air pollution is a major environmental health risk factor in Nairobi, Kenya. Most research conducted on air pollution in Nairobi has focused on measuring pollution concentrations. Although this research is very important, it is also crucial to understand barriers in the regulatory process that prevents this data from translating into effective action. This article attempts to fill in this gap. It starts by detailing the history of urban planning in Nairobi and its legacy in shaping contemporary urbanization and spatial patterns of air pollution. It then relies on interviews, participant observations, and a close reading of key laws and policies to evaluate current political, institutional, and data-infrastructure gaps in the Kenyan air pollution governance framework that serve as barriers for equitable air pollution mitigation. Finally, it draws on interviews and media analyses to examine the promises and perils of citizen science to improve air quality levels in Kenya. It ends by making policy recommendations to make Nairobi more liveable and breathable in the long term.

Citations

- deSouza, P. Political Economy of Air Pollution in Kenya. *Urban Forum* (2022). <https://doi.org/10.1007/s12132-022-09464-w>
- deSouza, P., 2020. Air pollution in Kenya: a review. *Air Quality, Atmosphere & Health*, 13(12), pp.1487-1495.
- deSouza, P., Nthusi, V., Klopp, J.M., Shaw, B.E., Ho, W.O., Saffell, J., Jones, R. and Ratti, C., 2017. A Nairobi experiment in using low cost air quality monitors. *Clean Air Journal*, 27(2), p.12.

Key Words: air pollution, Kenya, political economy, mixed methods, environmental justice

ADAPTATION IN THE 'VULNERABLE' GLOBAL SOUTH: CASE STUDY OF ADAPTATION PROGRAMING IN PAKISTAN

Abstract ID: 1353

Individual Paper Submission

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As the world hurtles towards 2 degrees Celsius warming, large parts of the world are already facing the brunt of climatic changes in the form of erratic weather patterns, sea level rise, floods, droughts which intersect with interlocking patterns of oppressions, exclusions, and marginalization (Adger et al., 2003; Wisner et. al., 2004). Adapting to these climatic changes is crucial for people at the brink of or in the line of these hazards that impact livelihoods, dwellings, and people's way of being. As climatic hazards come knocking, communities on the ground engage in adaptive practices. However, these practices are largely absent from or do not fit the categories of adaptive actions as conceived in adaptation programs developed by policymakers and planners (Adger, 2006). Enmeshed with global discourse on adaptation, these programs not only regurgitate concepts and methods developed in and by the Global North but also work on an imaginative Global South of 'vulnerable' people (Mikulewicz, 2020). While countries most impacted by climatic changes have emphasized the role of context-specific solutions and importance of local knowledge(s) (UNFCC, 2003; Berkes, 2005), the extent to which this has been incorporated in global programing and translates to action on ground is debatable (Ford et al., 2015).

Drawing on theories from the South that call for epistemologies of the South (Roy, 2009; Santos, 2014; Bahn, 2019), and intersectional feminist theories that emphasize the importance of dialogue in the production of knowledge (Jacobs, 2019) and partial perspectives (Haraway, 1998), I explicate how certain methods in community-based adaptation programs attempt to be radical but fall short of being transformative. I draw on a content analysis of policy and program documents of Oxfam's community-based adaptation programs in Pakistan, supplemented by interviews with project staff ranging from project managers involved in conceptualizing programs to project officers involved in on-ground implementation. I argue that narrow understandings of adaptation potentially recreate universalizing conceptions of Global South's vulnerability and resilience rendering these programs detached from historical contexts, intersectional concerns, and local knowledge(s). Knowledge is created not by way of a dialogue rather through conversations, the contours of which are set by program developers.

The findings of my research have implications for sub-national (provincial) adaptation planning in Pakistan as subnational disaster management agencies not only use findings from Oxfam's adaptation programs in determining funding priorities but also use the same methodologies for subnational surveys mapping vulnerability and resilience in the province. For planning in general, the findings heed to the call from critical planning scholars to decenter EuroAmerican knowledge and imaginations and engage in theorizing from the South. For adaptation solutions to be effective and transformative, they need to be rooted in their historical, socio-economic and political contexts. With impacts of climate change fast exacerbating, adaptation actions short of transformation will do little to bring people out of interlocking webs of vulnerabilities.

Citations

- Haraway, D. (1988). *Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective*. *Feminist Studies*, 14(3), 575–599. <https://doi.org/10.2307/3178066>
- Jacobs, F. (2019). "Black feminism and radical planning: New directions for disaster planning research." *Planning Theory*, 18(1), 24–39
- Santos, Boaventura de Sousa. (2014). *Epistemologies of the South: justice against epistemicide*. Boulder: Paradigm Publishers.
- Roy, A. (2009). "Why India Cannot Plan its cities: Informality, Insurgence and the Idiom of Urbanization" *Planning Theory* 8(1):76-87.
- Mikulewicz, M. (2020). *The Discursive Politics of Adaptation to Climate Change*, *Annals of the American Association of Geographers*, 110:6, 1807-1830, DOI: 10.1080/24694452.2020.1736981

Key Words: Adaptation, Local Knowledge(s), Southern theory, Feminist epistemologies, Intersectionality

EVALUATING THE EFFECT OF HEAT VULNERABILITY ON EMERGENCY MEDICAL SERVICE (EMS) INCIDENTS IN AUSTIN, TEXAS

Abstract ID: 1359

Individual Paper Submission

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Climate change has exacerbated Texas's characteristically hot climate, with hotter days and less reprieve from high temperatures. Urban heat exposure and sensitivity have been a growing concern in urban regions since the effect of urban heat is often considerably greater than that of surrounding rural environments, posing a threat to public health, water supply, and infrastructure (Bixler, 2021). Heat-related illnesses necessitate a rapid response from Emergency Medical Services (EMS), as such illnesses might result in death or severe impairment if emergency care is not provided promptly (Lee, 2022). Despite growing concerns about urban heat waves and relevant health issues in urban areas, limited research has been conducted on the effect of heat vulnerability during summer days on heat-related local emergency medical services incidents (Zottarelli, 2021).

This study investigates the spatial distribution of heat vulnerability in the Austin-Travis County area of Texas, specifically in terms of urban heat exposure, sensitivity, and adaptive capacity. Then, using normalized quantitative indicators and geospatial bivariate maps, we identify neighborhoods with a high degree of heat vulnerability and limited EMS accessibility – in terms of heat-related EMS incidents and response time – to establish risk reduction priority areas. Finally, we investigate the effect of heat vulnerability on heat-related EMS incidents to identify spatial disparities in vulnerable neighborhoods. A total of 28,431 heat-related EMS events were aggregated at the census block group level (N=578), confined to a constrained calendar year from May to September for 2020 and 2021. We used principal component analysis (PCA) to transform the data for greater interpretability and lower complexity, and bivariate mapping to investigate the relationship between heat vulnerability and EMS accessibility. Finally, negative binomial regression was utilized to determine which heat vulnerability indicators are linked with heat-related EMS

events at the block group level. Heat-related EMS calls have increased in block groups with a larger percentage of impervious surfaces, Hispanic populations, those receiving social benefits, households living alone, and the elderly. Furthermore, increased urban capacity, including higher road density, percentage of water area, and green space, is more likely to reduce heat-related EMS incidents.

This study adds insight into the relationship between extreme heat events as chronic disasters and heat-related health issues. This study presents data-driven evidence for planning practitioners to prioritize vulnerable areas and communities to focus local efforts on resolving heat-related health concerns in the neighborhood context. As a result, the study recommends a better-designed heat mitigation and community resilience plan to promote public health.

Citations

- Bixler RP, Yang E, Richter SM, et al. (2021) Boundary crossing for urban community resilience: A social vulnerability and multi-hazard approach in Austin, Texas, USA. *International Journal of Disaster Risk Reduction* 66: 102613.
- Lee K and Brown RD (2022) Effects of Urban Landscape and Sociodemographic Characteristics on Heat-Related Health Using Emergency Medical Service Incidents. *International Journal of Environmental Research and Public Health* 19(3): 1287.
- Nayak, S. G., Shrestha, S., Kinney, P. L., Ross, Z., Sheridan, S. C., Pantea, C. I., Hsu, W. H., Muscatiello, N., & Hwang, S. A. (2018). Development of a heat vulnerability index for New York State. *Public Health*, 161, 127-137.
- Zottarelli LK, Sharif HO, Xu X, et al. (2021) Effects of social vulnerability and heat index on emergency medical service incidents in San Antonio, Texas, in 2018. *J Epidemiol Community Health* 75(3): 271-276.

Key Words: extreme heat, EMS incidents, environmental justice, social vulnerability, climate resilience

PLANNING FOR ADAPTATION: INTEGRATING MITIGATION AND RECOVERY PLANNING IN THE MIDST OF REPETITIVE DISASTER EVENTS

Abstract ID: 1366

Individual Paper Submission

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Communities worldwide have experienced repeated disaster events in quick succession as anthropogenic climate change exacerbates existing risks from natural hazards like hurricanes, floods, and fires (Collins et al. 2019). In the United States, coastal areas, such as the Southeastern states exemplify the new normal of a perpetual process of preparing for a major disaster, recovering from one, and preparing for another close on the heels of the first (National Climate Assessment 2018). For instance, Hurricanes Florence and Michael were separated by only a few weeks in 2018. From 2016 to 2020, Southeastern regions experienced a handful of major declared disasters. The repetitive disasters challenge by states', counties', and municipalities' capacities to cope in addition to adapting. This adds to the need for expanding the knowledge on the conventional framework of a Disaster Mitigation-Preparedness-Response-Recovery cycle.

For planning scholars and practitioners, the dynamics between recovery and mitigation planning practices raise myriad questions about planning processes and plans that need to be updated before the proverbial ink is dried. Additionally, some jurisdictions may never have a chance to complete recovery planning because all their time and effort is spent doing the work of recovery. These dynamics raise questions regarding why some jurisdictions get recovery planning done while others do not, particularly about the networks of people at the local level responsible for planning (Berke et al., 2015; Erärinta & Mladenović, 2021). With that, we ask the following questions: 1) to what extent are hazard mitigation and recovery planning efforts (e.g., plans and planning processes) integrated? 2) to what extent are planning capacities (e.g., technical, and financial support from collaborative entities and federal aids) integrated? And 3) what local factors make a successfully integrated planning network in addition to the factors that fails in doing so?

We tackle these questions using a comparative case study research design, arising from a broader ongoing National Science Funded study (#1760183). We first applied systematic plan quality content analysis methods (Lyles and Stevens 2014) to assess variation of integration of plans and planning processes in 10 counties in Florida, Georgia, and North Carolina. We then used publicly available data on the Federal Emergency Management Agency's Mitigation Assistance, Public Assistance, and Individual Assistance Programs to identify to assess variations in federal funding for risk-reduction and recovery projects. Finally, we conducted digital surveys and semi-structured interviews with key stakeholders in mitigation and recovery planning in each jurisdiction to complement and extend

the plan and funding data. Specific themes we explored across each data set include 1) integration across the plan documents; 2) the collaborative networks of stakeholders with special attention to the provision of technical and financial support in each planning process; and 3) connections to long-term land use planning and other planning processes (e.g., transportation, climate change, housing, etc.).

Our preliminary findings suggest that the mitigation and recovery planning exhibit marked differences in their plan networks and stakeholders' networks involving individuals and agencies being part of the planning team. Mitigation tends to be standardized across counties within each state, while varying across states, consistent with state agency interpretation of the Federal Disaster Mitigation Act of 2000. Recovery efforts are more difficult to characterize. In Florida and Georgia, we found wide variation in plans, stakeholder networks, and funding; in North Carolina, the plans were all nearly identical, but the stakeholder networks and funding vary widely. Our findings speak to the influence of mandates and their interpretation, local stakeholder networks, and access to external funding.

Citations

- Berke, Philip, Galen Newman, Jaekyung Lee, Tabitha Combs, Carl Kolosna, and David Salvesen. "Evaluation of networks of plans and vulnerability to hazards and climate change: A resilience scorecard." *Journal of the American Planning Association* 81, no. 4 (2015): 287-302.
- Collins, M., Sutherland, M., Bouwer, L., Cheong, S. M., Frolicher, T., DesCombes, H. J., ... & Timmermans, M. L. (2019). Extremes, abrupt changes and managing risk.
- Eräranta, S., & Mladenovic, M. N. (2021). Networked dynamics of knowledge integration in strategic spatial planning processes: a social network approach. *Regional Studies*, 55(5), 870-882.
- Lyles, Ward, and Mark Stevens. "Plan quality evaluation 1994–2012: Growth and contributions, limitations, and new directions." *Journal of Planning Education and Research* 34, no. 4 (2014): 433-450.
- National Climate Assessment. Chapter 19: Southeast. (2018) Accessed March 22, 2021 at <https://nca2018.globalchange.gov/chapter/19/>

Key Words: climate risk reduction, hazard mitigation, disaster recovery, planning networks, plan integration

CLIMATE RISK VULNERABILITY TO EXTREME HEAT AND PARTICULATE MATTER: A SPATIOTEMPORAL ANALYSIS USING REALTIME CONCENTRATION OF FLOATING POPULATION IN SEOUL, SOUTH KOREA

Abstract ID: 1369

Individual Paper Submission

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Climate change has augmented the frequency and intensity of extreme heat and air pollution concentration. The recurring summer heatwaves and particulate matter (PM₁₀ and PM_{2.5}) in winter and spring in Seoul, S.Korea, have been considered the "New Normal" that calls for perpetual attention (Kim, 2018). Hence, the climate threat to Seoul's living environment and public health concerns, including the safety of populations vulnerable to climate risks, are snowballing. From an environmental equity perspective, heat-related mortalities and illnesses are unevenly distributed, severely exposing vulnerable populations to extreme heat (Inostroza, Palme, & de la Barrera, 2016; Kim, Deo, Lee, & Yeom, 2017; Wilson & Chakraborty, 2019). Similarly, existing literature demonstrated that exposure and damage to the particulate matter have more detrimental effects on the elderly and children (Ho, Wong, Yang, Chan, & Bilal, 2018). Studies have investigated the static occurrence of heatwaves or particulate matter based on spatial information using urban climate IoT sensing devices in Seoul. However, limited research has examined the spatiotemporal climate risk exposure patterns of vulnerable groups by applying real-time floating population data captured by mobile phone signals.

This study traced the high-resolution climate risk factors, focusing on extreme heat and particulate matters, using IoT environmental sensors deployed throughout Seoul. We combined spatiotemporal climate hazard vulnerability assessment in hour periods with floating population data classified in different age groups. Then, we conducted a T-test to identify the statistical differences in socioeconomic characteristics and infrastructure status between neighborhoods with the lowest and highest climate risks. This study also discussed policy implications for better dealing with the recurring climate hazards.

We collected urban climate sensing data from deployed IoT sensor named Smart Seoul Data of Things (i.e., S-DOT) and floating population data, with a confined timeframe of 43 days with climate risk advisory for extreme heat, PM₁₀, and PM_{2.5}, from April 1, 2020, to March 31, 2021. Through descriptive spatiotemporal analysis and hot-spot analysis, our study found the concentration patterns of extreme heat and particulate matter on abnormally risky days. The results revealed different exposure of climate risk factors to floating populations in age groups across space and time.

Our T-test result showed that neighborhoods with high climate risks appear to be associated with socio-economically vulnerable areas.

For researchers, a framework for urban climate sensing application is suggested for future climate vulnerability assessment research. For planners and policymakers, this study provides empirical research evidence to support smart city approaches pertinent to climate resilience using IoT.

Citations

- Ho, H. C., Wong, M. S., Yang, L., Chan, T.-C., & Bilal, M. (2018). Influences of socioeconomic vulnerability and intra-urban air pollution exposure on short-term mortality during extreme dust events. *Environmental pollution*, 235, 155-162.
- Inostroza, L., Palme, M., & de la Barrera, F. (2016). A heat vulnerability index: spatial patterns of exposure, sensitivity and adaptive capacity for Santiago de Chile. *PLOS one*, 11(9), e0162464.
- Kim, D.-W., Deo, R. C., Lee, J.-S., & Yeom, J.-M. (2017). Mapping heatwave vulnerability in Korea. *Natural Hazards*, 89(1), 35-55.
- Wilson, B., & Chakraborty, A. (2019). Mapping vulnerability to extreme heat events: lessons from metropolitan Chicago. *Journal of Environmental Planning and Management*, 62(6), 1065-1088.

Key Words: climate resilience, extreme heat, particulate matter, IoT, floating population

THE PLAN INTEGRATION FOR RESILIENCE SCORECARD FOR HEAT (PIRSH)

Abstract ID: 1416

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The combination of climate change and the urban heat island (UHI) effect is increasing the number of perilously hot days and the need for communities everywhere to equitably plan for heat resilience (Wilson, 2020). While planners increasingly recognize this imperative, they face many obstacles including a lack of research-based heat guidance for planning processes, underdeveloped regulatory structures, as well as siloed research, decision-making, and community plans (Meerow & Keith, 2021). Planning for heat resilience requires an integrated planning approach that coordinates strategies across community plans and uses the best available heat risk information to prioritize heat mitigation strategies for the most vulnerable communities (Keith, Meerow, Hondula, Turner, & Arnott, 2021).

With support from NOAA and in partnership with the American Planning Association, we developed a methodology for assessing heat resilience planning. We adapted the Plan Integration for Resilience Scorecard approach, originally developed for flood risk (Berke et al., 2015), to the unique challenges of extreme heat. The resulting Plan Integration for Resilience Scorecard for Heat (PIRSH) methodology was piloted in five geographically diverse U.S. communities (Boston, MA, Baltimore, MD, Fort Lauderdale, FL, Seattle, WA, and Houston, TX). We developed a typology of heat mitigation strategies through an expert elicitation and literature review process. For each city, two researchers independently analyzed all policies in the comprehensive plan, hazard mitigation plan, climate action plan, and climate change adaptation, resilience, or sustainability plan, if relevant. Policies were only included if they had the potential to impact on urban heat, were place-specific, and contained a recognizable policy tool. Policies were then scored based on whether they would likely mitigate heat ('+1'), worsen heat ('-1'), or the impact was unclear from the description in the plan ('Unknown'). Scored policies were mapped to relevant census tracts across the cities to evaluate their spatial distribution and net effect on heat resilience. The resulting PIRSH scorecard was then compared with heat exposure and vulnerability data to assess policy alignment with heat risks and to identify opportunities for improved planning. The results showed that across all five cities, plans contained many policies that would likely impact urban heat, but this was rarely acknowledged. Policies that provided enough detail to be scored were much more likely to enhance heat resilience than worsen it. Some categories of policy tools and heat mitigation strategies were more common than others.

Citations

- Berke, Philip, Newman, Galen, Lee, Jaekyung, Combs, Tabitha, Kolosna, Carl, & Salvesen, David. (2015). Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard. *Journal of the American Planning Association*, 81(4), 287–302.
- Keith, Ladd, Meerow, Sara, Hondula, David M, Turner, V Kelly, & Arnott, James C. (2021). Deploy heat officers, policies and metrics. *Nature*, 598(7879), 29–31.
- Meerow, Sara, & Keith, Ladd. (2021). Planning for Extreme Heat: A National Survey of U.S. Planners. *Journal of the American Planning Association*, 0(0), 1–16.
- Wilson, Bev. (2020). Urban Heat Management and the Legacy of Redlining. *Journal of the American Planning Association*, 86(4), 443–457.

Key Words: urban heat island, climate change, plan integration, heat mitigation, network of plans

THE IMPACTS OF THE SPATIAL PATTERN OF GREEN INFRASTRUCTURE ON LAND SURFACE TEMPERATURE

Abstract ID: 1422

Individual Paper Submission

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Extreme heat has been one of the greatest challenges brought by climate change. It leads to more deaths than any other climate-related disaster combined in the United States, and is believed to adversely affect urban sustainability by deteriorating air pollution, increasing energy and water consumption, impairing urban residents' health, and disturbing ecological cycles (Zawadzka et al., 2021). Urban areas are suffering more from it due to the Urban Heat Island (UHI) effect caused by the increase in impermeable land uses and anthropogenic heat emissions. (Yang et al., 2021; Feyisa et al., 2014). In response to this challenge, green infrastructure (GI) planning has been introduced as a cost-effective, environmentally friendly, and politically acceptable strategy. GI can mitigate the UHI effects and create comfortable urban thermal environments due to its capacity of reducing air and surface temperatures through shading and evapotranspiration (Yang et al., 2021).

However, GI is unevenly distributed across communities with varying socioeconomic statuses, exacerbating geographical inequalities in urban thermal environments (Venter et al., 2020; Feyisa et al., 2014). Moreover, despite a growing body of literature on the impacts of area, species composition, and shape of GI on its mitigation services for the UHI effect, few researchers have paid attention to the effects of morphological attributes of GI distribution. Therefore, in order to empirically examine the disparities in the distribution of urban thermal environments and spatial pattern of GI among communities, and to address the research gap, this study investigates two questions: 1) Do thermal environments and spatial patterns of GI vary across census tracts with different socioeconomic statuses? 2) Does the spatial pattern of GI distribution significantly impact its capacity to mitigate UHI effects?

This pilot study takes 47 census tracts adjacent to the campus of The Ohio State University in Columbus, Ohio, as study cases. These are part of the broader urban heat problem highlighted by Climate Central, a science and news organization dedicated to studying climate change and its impacts. They also vary in demographic characteristics such as household income and racial diversity. This study uses Land Surface Temperature (LST) to reflect urban heat environments, and measure the spatial pattern of GI distribution in each tract by calculating parameters including Patch density (PD), Edge density (ED), Mixed Variance (MV), Aggregation Index (AI), and Eccentricity Index (EI) in ArcGIS (Zawadzka et al., 2021; Zhu et al., 2021). We categorize tracts into three groups based on their average LST, and conduct an Analysis of variance (ANOVA) to examine whether race composition, household income, educational attainment, employment rate, as well spatial patterns of GI distribution vary significantly among these groups. Furthermore, based on the parameters of spatial pattern, this study conducts the Spatial Durbin Model (SDM) to analyze whether the spatial pattern of GI distribution has significant impacts on LST and to measure the intensity of its influence. Since it is acknowledged that the area and biomass of GI can significantly impact LST, this study also calculates the Normalized Difference Vegetation Index (NDVI) and Normalized Difference Water Index (NDWI) based on land cover data using ArcGIS and incorporates them into the SDM analysis.

This study helps fill the research gaps in GI planning by empirically examining the inequality distribution of urban heat environments across communities with diverse socioeconomic statuses and by taking the issue of spatial pattern into GI planning. The results also suggest a more effective and distributionally equitable GI planning strategy.

Citations

- Feyisa, G. L., Dons, K., & Meilby, H. (2014). Efficiency of parks in mitigating urban heat island effect: An example from Addis Ababa. *Landscape and Urban Planning*, 123, 87–95.
<https://doi.org/10.1016/j.landurbplan.2013.12.008>

- Venter, Z. S., Shackleton, C. M., van Staden, F., Selomane, O., & Masterson, V. A. (2020). Green Apartheid: Urban green infrastructure remains unequally distributed across income and race geographies in South Africa. *Landscape and Urban Planning*, 203. <https://doi.org/10.1016/j.landurbplan.2020.103889>
- Yang, G., Yu, Z., Jørgensen, G., & Vejre, H. (2020). How can urban blue-green space be planned for climate adaption in high-latitude cities? A seasonal perspective. *Sustainable Cities and Society*, 53. <https://doi.org/10.1016/j.scs.2019.101932>
- Zawadzka, J. E., Harris, J. A., & Corstanje, R. (2021). Assessment of heat mitigation capacity of urban greenspaces with the use of InVEST urban cooling model, verified with day-time land surface temperature data. *Landscape and Urban Planning*, 214. <https://doi.org/10.1016/j.landurbplan.2021.104163>
- Zhu, S., Du, S., Li, Y., Wei, S., Jin, X., Zhou, X., & Shi, X. (2021). A 3D spatiotemporal morphological database for urban green infrastructure and its applications. *Urban Forestry and Urban Greening*, 58. <https://doi.org/10.1016/j.ufug.2020.126935>

Key Words: Green infrastructure, Spatial pattern, Land surface temperature, Climate justice, Ecosystem services

RESILIENCE POLICY PORTFOLIO: A REVIEW OF HAZARD RESILIENCE POLICIES IN THE UNITED STATES

Abstract ID: 1437

Individual Paper Submission

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This paper presents a review and analysis of the policy choices available to local communities to improve resilience to the spectrum of natural hazard events. It draws on the extensive natural hazard literature developed over the past five decades to provide a useful summary of what is known about policies intended to improve community resilience. Much of the previous research on natural hazards has focused on a single hazard. This paper takes a multi-hazard approach and attempts to tailor policy responses to specific combinations of hazard and community types. When considering various disaster risk reduction and resilience policy choices and investments, local jurisdictions can sometimes lack the background and the risk analysis tools necessary to properly evaluate the combined efficacy of potential policy portfolios. This paper reviews the extensive natural hazard literature to develop a comprehensive list of hazard mitigation and resilience policies and interventions that are currently being implemented across the United States. We then identify the most widely used policies and provide a more in-depth discussion of how those policies operate to improve resilience. We review the available research on the effectiveness of those policies. Hazards vary in terms of their spatial extent and their damage mechanisms. Communities vary widely in terms of their social and economic characteristics as well as their planning and administrative capacity. Based on the extensive natural hazard literature community factors such as rate of growth and economic vitality have been shown to affect the success of policy interventions. Similarly, the spatial extent of the hazard and the amount of lead time available before a hazard event shape the appropriateness of individual policy interventions. Based on the results of previous studies we suggest what of policies are most likely to be effective for particular types of communities that are facing particular types of hazards (e.g., fast growing communities facing a flood hazard vs. slow growing community facing a tornado risk). Where available from the literature we present examples of return-on-investment (ROI) or benefit-cost ratios (BCRs) for various policy measures in particular types of communities. This research is intended to support and extend the development of the Interdependent Networked Community Resilience Modeling Environment (IN-CORE) being developed by the NIST-funded Center for Risk-Based Community Resilience Planning. These policies are included as a part of this risk modeling and decision support software framework designed to help local jurisdictions develop effective hazard resilience policy portfolios.

Citations

- Burby, R. J., Beatley, T., Berke, P. R., Deyle, R. E., French, S. P., Godschalk, D. R., Kaiser, E. J., Kartez, J. D., May, P. J., Olshansky, R., Paterson, R. G., Platt, R. H., (1999). Unleashing the Power of Planning to Create Disaster-Resistant Communities. *Journal of the American Planning Association*, 65(3), 247–258. <https://doi.org/10.1080/01944369908976055>
- Dillard, M. K., Helgeson, J. F., and Cauffman, S. A., (2018). Implementation of the NIST Community Resilience Planning Guide for Buildings and Infrastructure Systems, NISTIR-8231, Gaithersburg, MD. <https://doi.org/10.6028/NIST.IR.8231>
- Godschalk, D. R., Rose, A., Mittler, E., Porter, K., & West, C. T., (2009). Estimating the value of foresight: aggregate analysis of natural hazard mitigation benefits and costs, *Journal of Environmental Planning and Management*, 52:6, 739-756, <https://doi.org/10.1080/09640560903083715>

- Highfield, W. E., and Brody, S. D., (2013). Evaluating the Effectiveness of Local Mitigation Activities in Reducing Flood Losses. *Natural Hazards Review*, 14(4), 229–236. [https://doi.org/10.1061/\(asce\)nh.1527-6996.0000114](https://doi.org/10.1061/(asce)nh.1527-6996.0000114)
- Peacock, W. G., Meyer, M. A., Van Zandt, S., Grover, H., Jacobs, F. (2019). The Adoption of Hazard Mitigation and Climate Change Adaptation Policies, Programs, and Actions by Local Jurisdictions along the Gulf and Atlantic Coasts. In M. K. Lindell (Ed.), *The Routledge Handbook of Urban Disaster Resilience* (pp. 1–39). <https://doi.org/10.4324/9781315714462>

Key Words: Hazards, Resilience, Mitigation, Risk, Policy

RISK-SHIFT IN URBAN CLIMATE PLANNING

Abstract ID: 1460

Individual Paper Submission

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Urban land use intervention has become a central mechanism for climate action, but the extent to which such interventions determine who should experience greater or lesser degrees of risk and where that risk should be concentrated is not always acknowledged. Rather, debates about urban land-use-based climate interventions sometimes stay at the surface level, for example when they become embedded in the politics of “neighborhood character” effects from increased density.

This paper seeks to decidedly embed land-use-based climate action within a deeper “riskscape” framework. It asks: How do land-use-based greenhouse gas reduction strategies reorder the local geography of risk for urban residents?

The paper employs a mixed methods approach to examine what happens from the resident view when targeted development zones are used as a primary tool within urban and regional planning for climate mitigation and are coupled with high profile climate adaptation measures. It draws from roughly fifty interviews with developers, policymakers, planners, and neighborhood activists completed in 2019 in two cities – Austin, Texas and San Francisco, California. These interviews provide insight into how people perceived new land-use-based climate interventions focused on increased density and green climate resilient infrastructure within targeted development zones. I supplement the qualitative findings with a spatial autoregressive analysis that measures the extent to which the priority development areas in Austin and San Francisco predict more intense processes of gentrification for neighborhoods within them, and thus increase at least the perceived risk of displacement that comes along with gentrification.

The interviews and spatial analysis show how and why the relative weighting by residents of local social and ecological risks shifts over time as these interventions roll out. This shift occurs differently depending upon social status and geography. I argue that this means that urban climate interventions are not fundamentally about reducing risk, but rather about reordering the spatial dimension of risk – or creating a new riskscape pattern – within cities. This reordering occurs specifically through the perceived interactions across social and ecological risks that become clear within my interviews and the gentrification-oriented changes that are clear within my spatial analysis.

Overall, this paper reframes urban climate mitigation as primarily an exercise in reordering the spatial dimension of risk. Somewhat provocatively, it challenges the notion that systemic reduction of risk is the actual purpose of land-use-based climate planning. Rather, it is argued, the underlying goal is to direct the process of urban risk shift. This framing of urban climate planning has important implications for how land use planning seeking to address the challenges of climate change moves forward. It is, I argue, imperative that risk shift implications are openly acknowledged in order to avoid a stalemate situation wherein social and ecological goals are seen as in-conflict.

Citations

- Abel, Troy D., and Jonah White. "Gentrified sustainability: inequitable development and Seattle's skewed riskscape." *Interdisciplinary Environmental Review* 16, no. 2-4 (2015): 124-157.
- Anguelovski, Isabelle, Linda Shi, Eric Chu, Daniel Gallagher, Kian Goh, Zachary Lamb, Kara Reeve, and Hannah Teicher. "Equity impacts of urban land use planning for climate adaptation: Critical perspectives from the global north and south." *Journal of Planning Education and Research* 36, no. 3 (2016): 333-348.
- Bulkeley, Harriet, Gareth AS Edwards, and Sara Fuller. "Contesting climate justice in the city: Examining politics and practice in urban climate change experiments." *Global Environmental Change* 25 (2014): 31-40.
- Davies, Anna, Gregory Hooks, Janelle Knox-Hayes, and Raoul S. Liévanos. "Risksapes and the socio-spatial challenges of climate change." *Cambridge Journal of Regions, Economy and Society* 13, no. 2 (2020): 197-213.

- Shokry, Galia, James JT Connolly, and Isabelle Anguelovski. "Understanding climate gentrification and shifting landscapes of protection and vulnerability in green resilient Philadelphia." *Urban Climate* 31 (2020): 100539.

Key Words: Climate planning, Riskscape, Climate Gentrification, Climate Justice, Environmental Impacts of Density

EXAMINING THE IMPACT OF INEQUITIES IN STORMWATER INFRASTRUCTURE DEVELOPMENT ON LOCALIZED FLOOD DAMAGES AT THE NEIGHBORHOOD SCALE IN THE CITY OF HOUSTON, TEXAS

Abstract ID: 1470

Individual Paper Submission

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Urban flooding has become a growing threat due to rapid urbanization, as well as heavy and frequent rainfall events intensified by climate change. Stormwater infrastructure plays a crucial role in mitigating urban flooding, especially localized flooding by controlling surface runoff. Local government's decisions on stormwater infrastructure planning, as well as land use planning and development, may generate inequities in development patterns that lead to disparities in flood damage levels. However, research on vulnerability to flood hazards has disregarded the effects of stormwater infrastructure development on the extent of localized flood damage. It mainly focused on land-use changes (e.g., impervious surfaces and wetland alteration) and infrastructure development for mitigating riverine or coastal flooding (e.g., dams and sea walls) (Brody, et al., 2008; Highfield, et al., 2014; Zahran, et al., 2008). To address the gaps, this research explores how the inequities in stormwater infrastructure development are associated with the disparities in localized flood damage levels in Houston, Texas.

We conduct a cross-sectional multilevel regression to examine the impacts of stormwater infrastructure development by type, socio-demographic and economic characteristics of households, and the inequities in the stormwater infrastructure development on localized flood damages. While both socio-economic characteristics and stormwater infrastructure development influence flood damages, the environmental justice and social vulnerability literature also suggest that socio-economic characteristics of residents in neighborhoods interact with stormwater infrastructure development in the neighborhoods to further exacerbate flood damages in disadvantaged neighborhoods (Hendricks and Van Zandt, 2021; Porse, 2018).

The levels of analysis include the street segment level (the smallest unit, in which infrastructure elements tend to have similar characteristics) and the Census block group level (the smallest neighborhood unit, in which racial and ethnic characteristics of residents are provided). The analysis here is based on the spatially merged secondary datasets at the street segment and block group levels in the Geographic Information System (GIS). The secondary datasets include public stormwater infrastructure, street segments, and appraisal values in Houston, Multi-Resolution Land Characteristics Consortium's national land cover, socio-demographic and economic characteristics of block groups from Census ACS 5-year tables, and flooded buildings from Hurricane Harvey and floodplain maps of Harris County. To examine the extent of localized flood damage, we exclude flooded houses within floodplains, which may be flooded due to riverine flooding.

Our hypotheses are based on the findings from social vulnerability and environmental justice literature: 1) Street segments having a higher density of stormwater infrastructure and predominantly served by storm sewers rather than roadside ditches, tend to have fewer flooded houses outside of floodplains: 2) Street segments located in block groups dominated by privileged groups of people (white, higher-income people), are more likely to withstand the flood damages because the streets are served by higher density of stormwater infrastructure, compared to street segments in block groups dominated by marginalized groups of people (people of color and lower-income): 3) Street segments located in block groups dominated by privileged groups of people are more likely to withstand the flood damages because the streets are served predominantly by sewers rather than ditches: 4) Street segments having higher appraisal values of parcels, are more likely to withstand the flood damage because the street segments have higher density of stormwater infrastructure and they are served dominantly by sewers, compared to street segments of lower appraisal values of parcels. The findings of this study have implications for equitable stormwater management while developing flood mitigation strategies in capital improvement and land use plans.

Citations

- Brody, S. D., Zahran, S., Highfield, W. E., Grover, H., & Vedlitz, A. (2008). Identifying the impact of the built environment on flood damage in Texas. *Disasters*, 32(1), 1-18.
- Hendricks, M. D., & Van Zandt, S. (2021). Unequal protection revisited: Planning for environmental justice, hazard vulnerability, and critical infrastructure in communities of color. *Environmental justice*, 14(2), 87-97.

- Highfield, W. E., Peacock, W. G., & Van Zandt, S. (2014). Mitigation planning: Why hazard exposure, structural vulnerability, and social vulnerability matter. *Journal of Planning Education and Research*, 34(3), 287-300.
- Porse, E. (2018). Open data and stormwater systems in Los Angeles: Applications for equitable green infrastructure. *Local Environment*, 23(5), 505-517.
- Zahran, S., Brody, S. D., Peacock, W. G., Vedlitz, A., & Grover, H. (2008). Social vulnerability and the natural and built environment: a model of flood casualties in Texas. *Disasters*, 32(4), 537-560.

Key Words: Stormwater management, Hazard vulnerability, Social vulnerability, Environmental justice, Floods

SOCIAL EQUITY AND CLIMATE JUSTICE: THE ROLE OF JOB CREATION IN SAN FRANCISCO

Abstract ID: 1476

Individual Paper Submission

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Though cities are increasingly rising to the challenge of the climate crisis by creating action plans and greenhouse gas inventories, the means to improve social equity or at the very least avoid worsening inequities in the transition to clean energy and more resilient infrastructure are not as well-defined. For clean energy, US policymakers appeal to a wide audience by considering the role of job creation. The burgeoning literature on climate justice in planning, especially with regard to climate adaptation, appears focused on exposure, sensitivity, and the capacity to adapt to changes brought about by climate impacts and their proposed remedies. And yet, in order to realize the twin goals of global carbon neutrality (i.e., CO₂e) and adaptation to climate change, all manner of infrastructure investments require modification in their design, materials, and technologies, and with those choices come questions of climate justice.

The purpose of this research is to examine methods for integrating social equity, in the form of workforce participation for underrepresented minorities, within a climate-smart approach to capital investment planning cities. This paper is a case study research, exploring the public utility planning process using data collected from San Francisco's stormwater projects. The method presented simulates job creation to forecast the difference in social equity considerations between conventional and climate-friendly scenarios. We hypothesize that projects designed for improved alignment with climate targets improve social equity from job creation when compared to conventional project designs. Also, this research highlights gaps and dimensions that local governments could take to fulfill climate justice through job creation in the infrastructure planning process. We close by proposing a research agenda to further understand the relationship between climate justice and social equity through the lens of job creation in the capital planning process, using multiple regression analysis statistical techniques.

Citations

- Amorim-Maia, A. T., Anguelovski, I., Chu, E., & Connolly, J. (2022). Intersectional climate justice: A conceptual pathway for bridging adaptation planning, transformative action, and social equity. *Urban Climate*, 41, 101053.
- Carley, S., & Konisky, D. M. (2020). The justice and equity implications of the clean energy transition. *Nature Energy*, 5(8), 569-577.
- Cha, J. M. (2017). A just transition: why transitioning workers into a new clean energy economy should be at the center of climate change policies. *Fordham Environmental Law Review*, 29(2), 196-220.
- Rosemberg, A. (2010). Building a just transition: The linkages between climate change and employment. *International Journal of Labour Research*, 2(2), 125.
- Whittington, J., & Lynch, C. (2015). Climate-informed decisions: the capital investment plan as a mechanism for lowering carbon emissions. *World Bank Policy Research Working Paper*, (7381).

Key Words: Climate justice, capital investment planning, Social equity, Job creation, Infrastructure Planning

NEIGHBORHOOD CHANGE AND CLIMATE GENTRIFICATION: MYTH OR FACT?

Abstract ID: 1493

Individual Paper Submission

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Traditional theories of neighborhood change focus on ecological factors, political economy, subcultural factors, and other factors (Galster, Cutsinger, & Lim, 2007; Harvey, 1973; Li & Morrow-Jones, 2010; Rothenberg et al., 1991). The natural succession of neighborhoods goes through a few stages, but is not always linear, and different neighborhoods change differently over time. Ecological factors, such as residential preferences and mobility, and the natural process of aging in housing and infrastructure, determines the fundamental change of neighborhoods. The push and pull factors explain the directions of mobility. Public agencies often use pull factors to attract intended residents. The push factors often stem from neighborhood decline and/or neighborhood revitalization, while such revitalization may be pull factors for other types of residents. When residents are pushed away involuntarily due to increased property value and rents, and/or cultural changes due to revitalization, displacement from gentrification may occur.

In recent years, climate change associated with increased intensity of human activity and increased carbon footprint has yielded an alarming trend of melting glaciers and rising sea levels. Although the projected magnitude of sea-level rise (SLR) is different based on different models, the overall unpredictability of weather patterns, increased tropical cyclone activities, and worsening king-tide inundation in low-lying urban areas along the coast have prompted many developers and home-buyers to consider elevation and flood exposure when making home development or purchase decisions. Speculations about developers eyeing higher-elevation areas for redevelopment have prompted researchers to investigate whether climate related gentrification is happening in higher-elevation low-income neighborhoods. In a study in Miami-Dade County, Keenan, Hill, & Gumber (2018) found that housing units in higher elevation areas tend to have higher appreciation rates than units in lower-elevation areas. While higher-income/higher-elevation areas may be resistant to displacement, lower-income areas may be more susceptible. Some of the higher elevation areas are the neighborhoods with predominantly Haitian (Little Haiti) and low-income minorities (Liberty City). In addition to the threat from climate gentrification, many also worry about the spillover effect of redevelopment and property value increases from adjacent neighborhoods, for example, Wynwood Business Improvement District in the City of Miami. Existing study about the impact of climate gentrification, particularly flooding, is scanty and mostly focuses on parcel-level research on price appreciation. This current study takes a different angle to explore whether neighborhood change relates to elevation and flood exposure.

We use the American Community Survey (ACS) five-year data for all the block groups in the tri-county South Florida area, Palm Beach County, Broward County, and Miami-Dade County. The selected neighborhood-level and city-level socioeconomic and regulatory variables are combined with the average elevation at the block group level using the Digital Elevation Model (DEM) from the USGS (U.S. Geological Survey) and the flood exposure calculated from the floodplain data from FEMA to measure changes in selected neighborhood characteristics. For example, neighborhood and city-level variables in 2006-2010 (the 2010 5-year estimate), along with neighborhood elevation and flood exposure, are used to measure changes in certain neighborhood characteristics, such as median household income, housing value, and percentage racial and ethnic minorities from the period of 2011-2015 (the 2015 5-year estimate) to 2016-2020 (the 2020 5-year estimate). A series of Hierarchical Linear Regression Models are used to measure how elevation is associated with the changes in household income, housing value, and percentage minorities, the common indicators of gentrification.

If our analysis indicates that higher elevation and less flood exposure are significantly related to neighborhood change variables, potential neighborhoods with the most impact will be identified and policy recommendations will be made to ensure such change would not cause displacement of residents, particularly vulnerable populations such as lower-income minorities and immigrants.

Citations

- Galster, George C., Jackie Cutsinger, and Up Lim. 2007. Are neighborhoods self-stabilizing? Exploring endogenous dynamics. *Urban Studies* 44 (1): 167-85.
- Harvey, David. 1973. *Social justice and the city*. Oxford, UK: Blackwell.
- Li, Yanmei, and Hazel A. Morrow-Jones. 2010. The impact of residential mortgage foreclosure on neighborhood change and succession. *Journal of Planning Education and Research*, 30 (1): 22-39.
- Rothenberg, Jerome, George C. Galster, Richard V. Butler, and John R. Pitkin. 1991. *The maze of urban housing markets theory, practice and evidence*. Chicago: University of Chicago Press.
- Keenan, Jesse M., Thomas Hill, Anurag Gumber. 2018. Climate gentrification: from theory to empiricism in Miami-Dade County, Florida. *Environmental Research Letters* 13, 054001. doi:10.1088/1748-9326/aabb32.

Key Words: Climate Gentrification, Neighborhood Change, Sea Level Rise

PLAN INTEGRATION FOR ECOLOGICAL RESILIENCE: EXAMINE FACTORS ASSOCIATED WITH WETLAND ALTERATION

Abstract ID: 1503

Individual Paper Submission

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Abstract: Coastal wetlands are effective methods for protection from flood damage. Inversely, wetland loss can amplify damage from floods over a larger area. Resilience to flood disturbances also heavily depends on a healthy ecosystem and its related services. Changes in ecological conditions associated with land use development can directly impact ecosystem services, including their ability to withstand natural hazards and sustain human activities on a larger scale. City plans and growth policies help determine how effective urban growth can be in mitigating flooding, preventing wetland loss, and enhancing ecological resilience. The resilience of the built and natural environments is strongly influenced by the growth management guidance provided by a community's 'network of plans (e.g. comprehensive, hazard mitigation, open space, etc.)'. This study is the first to explore the influence of plan integration on wetland alteration in hazard-prone areas by comparing findings from Fort Lauderdale, FL, and League City, TX. The research questions are:

(1) Does level of plan integration have a stronger relationship with the built out community or the rapidly developing community, comparing a fixed and an expanding city?

(2) Are higher levels of plan integration related to a network of plans that target "hotspots" of wetland loss, thereby helping deter the decreases in wetland amounts?

To conduct this research, we combine spatial analytics, a Plan Integration for Resilience Scorecard evaluation, and correlational statistics. We find that the rate of change in wetland land cover within the 100-year floodplain was faster in Fort Lauderdale than in League City from 2006 to 2010. The networks of plans, particularly in League City, target areas of higher wetland loss to reduce this trend. Wetland alteration is shown to be strongly associated with medium-, and low-intensity development patterns, though variations exist between the two cities. Further, districts with high per capita income and high physical vulnerability are more likely to experience wetland loss.

A growing number of wetland-related policies, are put into place because naturally occurring wetlands provide various essential ecosystem services to communities, and their loss will amplify property damage from floods over a larger area, especially for coastal communities. Undervaluing these important natural ecosystems may have the effect of compromising safety in coastal communities. As such, effective planning that helps protect naturally occurring wetlands can significantly aid in building resilient communities and reducing losses from hazard events. Improvements in policies for integrating wetland protection with flood mitigation, adopting wetland protection ordinances, and exceeding minimum NFIP requirements are therefore recommended. The process of incorporating wetland protection into a local network of plans can significantly aid in building resilient communities and stemming losses from hazard events.

Citations

- Yu, S., Malecha, M., & Berke, P. (2021). Examining factors influencing plan integration for community resilience in six US coastal cities using Hierarchical Linear Modeling. *Landscape and Urban Planning*, 215, 104224.
- Yu, S., Brand, A. D., & Berke, P. (2020). Making Room for the River: Applying a Plan Integration for Resilience Scorecard to a Network of Plans in Nijmegen, The Netherlands. *Journal of the American Planning Association*, 86(4), 417-430.
- Berke, P., Yu, S., Malecha, M., & Cooper, J. (2019). Plans that disrupt development: Equity policies and social vulnerability in six coastal cities. *Journal of Planning Education and Research*, 0739456X19861144.
- Malecha, M., Masterson, J.H., Yu, S., Lee, J., Thapa, J., Roy, M. & Berke, P. (2019). Plan Integration for Resilience Scorecard Guidebook: Spatially evaluating networks of plans to reduce hazard vulnerability – Version 2.0. College Station, TX: Institute for Sustainable Communities, College of Architecture, Texas A&M University. <http://mitigationguide.org/wp-content/uploads/2018/03/Guidebook-2020.05-v5.pdf>
- Berke, P., Malecha, M., Yu, S., Lee, J., & Masterson, J. (2018). Plan integration for resilience scorecard: evaluating networks of plans in six US coastal cities. *Journal of Environmental Planning and Management*, 1-20.

Key Words: Ecological resilience, Plan integration for resilience scorecard, Hazard vulnerability, Wetland alteration, Land development

THEORETICAL FRAMEWORKS ON THE USES OF AUGMENTED AND VIRTUAL REALITY IN ENVIRONMENTAL PLANNING FROM 2010 TO PRESENT

Abstract ID: 1506

Individual Paper Submission

With technological advances, such as augmented reality (AR) and virtual reality (VR), planners have unique ways of presenting environmental plans to the public. Originally, plans utilized text and visuals, such as maps, photographs, and sketches. Visuals are crucial in communicating with the public and ultimately enable public participation. The popularity of AR and VR in modern use by the public makes them potentially powerful tools for planners to utilize when presenting plans. Visuals through AR and VR allow ideas and concepts to be tangible. The realistic visuals in AR and VR show that planners should adapt to new forms of visualizations to utilize them and present them to the public, allowing many actors, the public and private sector, to understand future plans and decision-making regarding their cities. AR and VR can be especially helpful in environmental planning. While climate change and environmental problems have become the main concern, many cities have been including climate change plans.

Previous studies have surveyed the opinions of landscape architects and the populaces to find differences in preference in Green Stormwater Infrastructure through images (Suppakittpaisarn et al. 2019). Meanwhile, Portman et al. (2015) reviewed VR in architecture, landscape architecture, and environmental planning and found that environmental planning used VR applications to show the effects of climate change to various stakeholders. The studies are in allied fields but do not fully review both applications of AR and VR, specifically in environmental planning. This research aims to 1) review the modern use of AR and VR in environmental planning, 2) determine to what extent AR and VR have influenced environmental planning, and 3) find effective approaches and new directions for AR and VR in environmental planning.

In order to meet the objectives, this paper uses query protocol, topic modeling, and a literature review. First, I use a query protocol to identify literature on AR and VR in environmental planning in the Web of Science database from 2010 to 2021. A query protocol uses terms to identify the relevant text. For this study, I use words that would detect literature on AR and VR in environmental planning. Although AR was developed in the 1960s, AR applications have become more widely used in the 2010s. Second, I use topic modeling, a type of unsupervised machine learning and natural language processing (NLP). Topic modeling undergoes a statistical process that takes text data to create related major topics. By taking the input of AR and VR in the field of environmental planning text data, I will obtain key topics. Last, the literature review allows for an in-depth understanding of the advantages and limitations of new visualization tools and how they aid the comprehension of urgent problems in environmental planning, such as climate change. The review also offers suggestions for new directions for visualization methods in environmental planning.

My results will extend the research for planners to acknowledge the importance of AR and VR in environmental planning. New opportunities seem promising, but planners must also be aware of the drawbacks and potential problems of using AR and VR to inform and broaden participation. A comprehensive review of the literature provides a strong foundation for implementing new methods and visualization techniques in real environmental planning situations and predicting upcoming challenges. Using AR and VR provides the ability for planners to revolutionize ways for the public to absorb the plan materials. Offering visualization tools will enable planners to develop equitable cities with technology-driven public participation.

Citations

- Allen, Cameron, Maggie Smith, Maryam Rabiee, and Hayden Dahmm. 2021. "A Review of Scientific Advancements in Datasets Derived from Big Data for Monitoring the Sustainable Development Goals." *Sustainability Science*, June. <https://doi.org/10.1007/s11625-021-00982-3>.
- Bishop, Ian D., and Eckart Lange, eds. 2005. *Visualization in Landscape and Environmental Planning: Technology and Applications*. London: Taylor & Francis.
- Lewis, John L., Jeffrey M. Casello, and Mark Groulx. 2012. "Effective Environmental Visualization for Urban Planning and Design: Interdisciplinary Reflections on a Rapidly Evolving Technology." *Journal of Urban Technology* 19 (3): 85–106. <https://doi.org/10.1080/10630732.2012.673057>.
- Portman, M. E., A. Natapov, and D. Fisher-Gewirtzman. 2015. "To Go Where No Man Has Gone before: Virtual Reality in Architecture, Landscape Architecture and Environmental Planning." *Computers, Environment and Urban Systems* 54: 376–84. <https://doi.org/10.1016/j.compenvurbsys.2015.05.001>.
- Suppakittpaisarn, Pongsakorn, Linda Larsen, and William C. Sullivan. 2019. "Preferences for Green Infrastructure and Green Stormwater Infrastructure in Urban Landscapes: Differences between Designers and Laypeople." *Urban Forestry & Urban Greening* 43 (July): 126378. <https://doi.org/10.1016/j.ufug.2019.126378>.

Key Words: Visualization Tools, Augmented Reality (AR), Virtual Reality (VR), Environmental Planning, Public Participation

AN INVESTIGATION OF THE RESILIENCE OF ACCESSIBILITY TO EMERGENCY AND LIFESAVING FACILITIES UNDER THE THREATS OF NATURAL HAZARDS

Abstract ID: 1533

Individual Paper Submission

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In planning, land-use allocation determines where the urban resources/opportunities to be located, and transportation network provides various combinations of routes leading to them. Therefore, accessibility can be regarded as a physical result of the interaction between land-use allocation and transportation network. One motivation of widely studying accessibility is that both the transportation network and land-use system of a city influence individuals' daily activities and thus quality of life. Despite all these, it is rare to assess its vulnerability considering the increasingly and frequently emergent natural hazards, such as climate-change-induced hazards (e.g., wildfire and sea-level rising), and some other hazards like earthquakes and landslides. When facing these natural hazards, emergency and lifesaving (E&L) facilities play an important role in the response phase of the natural hazard management circle. Since this is a question of how easy a resident can access to an E&L facility subject to travel constraints (e.g., fleeing for refuge and relocating victims), it becomes possible to use the idea of accessibility to solve this problem. Most existing transportation resilience studies either examine whether the transportation system would remain functioning during a disaster or assess how difficult the function could be recovered back afterward. They basically neglect the fact that accessibility (facility access or service delivery) is also a result of facility allocation.

Based on the understanding of natural disaster risk as a function of hazard, vulnerability, and exposure (Randolph, 2004), avoidance theory and mitigation theory are typically applied to develop traditional natural hazard mitigation measures (Godschalk, 2003). The former would propose to allocate activities away from natural hazard areas to reduce exposure, while the latter would suggest structure engineering measures to reduce the vulnerability on site (Randolph, 2012). The logic of these two theories responds to the role of urban planning in natural hazard management mentioned above. However, urban planning is also playing the role in natural hazard management in terms of the preparedness for emergency response as "soft mitigation" (Lichterhan, 2000) such as efficient allocation of emergency response facilities. This role seems to be neglected in planning literature.

Therefore, this study aims to develop a research framework to examine the resilience of the accessibility to E&L facilities under natural hazards. The San Fernando Valley in CA is selected as the study region by considering two natural hazards, earthquakes and wildfires. Using the cumulative-opportunity approach (Chen and Wang, 2020), we firstly calculate accessibility to parks, schools, hospitals, roads, and fire stations respectively during normal situation. Then considering the spatial distribution of two natural hazards and population density, accessibility to these facilities is repeatedly recalculated by removing a part of the transportation network within the potential hazard zone at a time until achieving a large number for statistical analysis. The accessibility results before and after the consideration of the two natural hazards are statistically compared to point out that where accessibility would drop most significantly. For those hotspots, at last, we create a normalized difference accessibility index (NDAI) to suggest that the improvement of accessibility resilience should focus on facility allocation or transportation network itself. Such a research framework can be utilized by urban planners to find out the most vulnerable locations and needed hazard mitigation resources in terms of facility allocation and transportation investments.

Citations

- Chen, N. & Wang, C.-H. (2020). Does green transportation promote accessibility for equity in medium-size U.S. cities? *Transportation Research Part D: Transport and Environment*, 84, 102365.
- Godschalk, D. R. (2003). Urban hazard mitigation: creating resilient cities. *Natural hazards review*, 4(3), 136-143.
- Lichterman, J. D. (2000). A "community as resource" strategy for disaster response. *Public Health Rep*, 115(2-3), 262-5.
- Randolph, J. (2004). *Environmental land use planning and management*. Island Press.
- Randolph, J. (2012). *Creating the climate change resilient community*. MIT Press Cambridge, MA.

Key Words: accessibility, vulnerability assessment, natural hazards, hotspot analysis, statistical comparison

INFORMAL COPING AND ADAPTIVE PRACTICES: EXPLORING COMMUNITY-LED EFFORTS TO ADDRESS GAPS IN RELOCATION AND RESETTLEMENT PROGRAMS

Abstract ID: 1535

Individual Paper Submission

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As part of efforts toward addressing the growing number of environmental and climatic risks impacting communities, relocation and managed retreat initiatives are frequently presented as potential strategies for use in mitigating the threats associated with living in hazardous areas (Hino, Field, & Mach, 2017). While there can be many positive benefits to these strategies, there is a growing amount of research critiquing the goals, motivations, and implementation of relocation activities (Balachandran, Olshansky, Johnson, 2021). This is particularly true as it relates to addressing how relocation activities address the interests of those falling outside of formalized planning structures, such as informal communities.

In cases such as this, when relocation efforts do not fully address the diversity of issues and vulnerabilities impacting a community, it can lead to the initiation of coping and adaptive practices. Specifically, this often centers on individuals and groups implementing their own measures and modifications to reduce their exposure and vulnerability to environmental risks (López-Marrero, 2010; Wamsler & Brink, 2014). While efforts of this sort are not the dominant focus of relocation discussions, when looking at these coping and adaptive practices closely, we see that these community-led activities often work to develop community resilience to hazards in a way that formalized relocation practices frequently miss or are unable to address.

Community-led resilience building efforts surrounding the relocation of informal communities in Puerto Rico presents a useful case for exploring these questions in more depth. Informal communities in Puerto Rico face widespread issues, such as inadequate infrastructure, unsafe living conditions, and frequent exposure to environmental hazards. Relocation and resettlement activities are often presented as useful approaches for addressing the hazard and development related issues facing informal communities. However, these formal hazard planning initiatives frequently fail to fully address the needs of informal communities, causing them to initiate resilience building efforts of their own. The examination of these actions provides an opportunity for exploring alternative vantage points of the resilience building process.

In this study, we draw on data collected from interviews with local planners and focus groups with community members to present lessons learned from community-led coping and adaptive activities in Puerto Rico. Specifically, this study centers on addressing (1) how informal communities work to build resilience surrounding relocation through coping and adaptive practices; (2) how community-led coping and adaptive practices highlight the gaps in formal relocation efforts; and (3) how community-led efforts place undue burdens and responsibilities on community members to fill the gaps left behind formal relocation efforts. Through this work, we highlight the ways in which community-led efforts can be used as a teaching tool for understanding the implementation, assumptions, and gaps surrounding the application of relocation and broader resilience building activities in planning research and practice.

Citations

- Balachandran, B., Olshansky, R. B., & Johnson, L. A. (2021). Planning for Disaster-Induced Relocation of Communities. *Journal of the American Planning Association*.
<https://doi.org/10.1080/01944363.2021.1978855>
- Hino, M., Field, C., & Mach, K. (2017). Managed retreat as a response to natural hazard risk. *Nature Climate Change*, 7(5), 364–370. <https://doi.org/10.1038/nclimate3252>
- López-Marrero, T. (2010). An integrative approach to study and promote natural hazards adaptive capacity: A case study of two flood-prone communities in Puerto Rico. *Geographical Journal*, 176(2), 150–163.
<https://doi.org/10.1111/j.1475-4959.2010.00353.x>
- Wamsler, C., & Brink, E. (2014). Moving beyond short-term coping and adaptation. *Environment and Urbanization*, 26(1), 86–111. <https://doi.org/10.1177/0956247813516061>
- Woodruff, S. C., Meerow, S., Stults, M., & Wilkins, C. (2022). Adaptation to Resilience Planning: Alternative Pathways to Prepare for Climate Change. *Journal of Planning Education and Research*, 42(1), 64–75.
<https://doi.org/10.1177/0739456X18801057>

Key Words: adaptive capacity, coping, relocation, resettlement, informal communities

MITIGATING FLOOD THROUGH LAND USE PLANNING IN KATHMANDU VALLEY, NEPAL: ENVIRONMENTAL, SOCIAL, AND INSTITUTIONAL CHALLENGES

Abstract ID: 1538

Individual Paper Submission

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Flooding is the most frequent disaster in the world. With climate change and rapid land-use conversions, flood events are becoming more severe and intense in urban areas. Cities in developing countries are increasingly becoming hotspots of flooding. Socioeconomic characteristics, land-use practices, and environmental changes determine the disaster impacts (Blaikie et al., 1994; Burby et al., 2000; Cutter, Boruff, & Shirley, 2003), including flood damages and vulnerabilities in cities. Specific population segments are disproportionately vulnerable to disaster events (Morrow, 1999; Fothergill & Peek, 2004). With a case study of Kathmandu Valley, Nepal, this research explores how land-use planning, disaster information, and risk perception influence flood management practices in rapidly developing cities.

With extreme rainfall events during the monsoon season (June to August), Nepal experiences reoccurring floods that cause extensive damage in hill and plain regions of the country, mainly in urban areas. Kathmandu is the capital city of Nepal, with a population density of more than 50 thousand people per square mile. It is the economic and administrative hub of the country. Uncontrolled urban growths, no zoning enforcement, encroachment of river banks and wetlands, increasing impervious surfaces, and climate change exacerbated flood impacts in Kathmandu. Based on geospatial analyses, household surveys, and expert interviews, this study identifies a gap between policies and practices of urban flood management and risk-sensitive land use planning in Kathmandu Valley. Land-use changes and flood patterns were analyzed by interpreting satellite images and historical land-use maps. Two hundred household surveys were administered in flood-prone settlements along the Bagmati River corridor to understand changes in flooding. Thirty semi-structured interviews were conducted among municipal planners, consultants, and flood managers to analyze land use planning and flood mitigation practices. The significant contribution of this study is the policy recommendations for urban flood mitigation through land-use planning and disaster risk communication in Nepal and other developing countries where financial, technological, and human resources are limited for environmental planning and disaster risk management.

Citations

- Blaikie, P., Cannon, T., Davis, I., & Wisner, B. (1994). *At Risk: Natural hazards, people's vulnerability, and disasters*. New York: Routledge.
- Burby, R. J., Deyle, R. E., Godschalk, D. R., & Olshansky, R. B. (2000). Creating Hazard Resilient Communities through Land-Use Planning. *Natural Hazards Review*, 1(2), 99-106.
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social Science Quarterly*, 84(2), 242-261.
- Fothergill, A., & Peek, L. A. (2004). Poverty and disasters in the United States: A review of recent sociological findings. *Natural hazards*, 32(1), 89-110.
- Morrow, B. H. (1999). Identifying and Mapping Community Vulnerability. *Disasters*, 23(1), 1-18.

Key Words: Risk-sensitive land use planning, urban flood mitigation, climate change, Nepal

SOCIOECONOMIC GROUPS AND THEIR GREEN SPACES AVAILABILITY IN URBAN AREAS OF CHINA: A DISTRIBUTIONAL JUSTICE PERSPECTIVE

Abstract ID: 1540

Individual Paper Submission

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Relying on a nationwide social survey, this study examines green space availability among different socioeconomic groups in urban areas of China. The national survey collected data at the individual level, which depicts residents' socioeconomic statuses in a direct and comprehensive manner. Geocoded addresses of respondents were extracted to calculate three different indicators of green space availability: the coverage ratio of the overall areas of vegetation, the coverage ratio of park areas, and the closest distance to a park. The results revealed that the provision of green space did not discriminate against people's socioeconomic levels in China. Instead, the majority of disadvantaged groups were, at times, provided with more green spaces than comparison groups. Low-income residents have more vegetation coverage nearby than people with high incomes. Residents in affordable communities and urban villages have a higher vegetation coverage ratio than other groups, but urban villages are further from parks. This study expands the current inquiry on the distributive equity of green space by adding a nationwide exploration in a developing country. The results evaluated green space availability in urban areas across the country, which also can inform decision-makers and planners about which disadvantaged groups should be the focus of efforts to mitigate inequality in green space distribution.

Citations

- Boone, Christopher G., Geoffrey L. Buckley, J. Morgan Grove, and Chona Sister. 2009. "Parks and People: An Environmental Justice Inquiry in Baltimore, Maryland." *Annals of the Association of American Geographers* 99 (4):767-787. doi: 10.1080/00045600903102949.
- Jennings, Viniece, Myron F. Floyd, Danielle Shanahan, Christopher Coutts, and Alex Sinykin. 2017. "Emerging issues in urban ecology: implications for research, social justice, human health, and well-being." *Population and Environment* 39 (1):69-86. doi: 10.1007/s11111-017-0276-0.
- Kabisch, Nadja, Michael Strohbach, Dagmar Haase, and Jakub Kronenberg. 2016. "Urban green space availability in European cities." *Ecological Indicators* 70:586-596. doi: 10.1016/j.ecolind.2016.02.029.
- Nesbitt, Lorien, Michael J. Meitner, Cynthia Girling, Stephen R. J. Sheppard, and Yuhao Lu. 2019. "Who has access to urban vegetation? A spatial analysis of distributional green equity in 10 US cities." *Landscape and Urban Planning* 181:51-79. doi: 10.1016/j.landurbplan.2018.08.007.
- Rawls, John. 1971. *A theory of justice*. Cambridge, Mass.: Belknap Press of Harvard University Press.

Key Words: Socioeconomic status, urban vegetation, park, distributive equity, Social Survey

THE EFFECT OF URBAN MORPHOLOGY INEQUITY ON EMISSIONS IN UTAH, US: FOCUSING ON NO₂

Abstract ID: 1549

Individual Paper Submission

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The importance of mitigation of emissions is not only for the environmental problem. Because emissions have directly adverse effects on physical and mental health, such as asthma and cardiovascular disease, it is directly related to the increased economic burden on public health, and the city's sustainability (Bourdrel et al., 2017; Khreis et al., 2017). Especially, Utah ranked the worst air quality state in the US, and Salt Lake City ranked fourth worst air quality on earth in 2021, according to IQAir. If the current emissions pattern continues, it will lead to serious public health, financial, and structural burdens.

Transit agencies effort hard to decrease emissions through the various programs, however, for emissions reduction, previous strategies focused a lot on reducing traffic and increasing public transit ridership without considering the urban morphology and urban components. Especially, due to the recent rapid increase in housing prices in the centers of Utah, disadvantaged populations are being forced the displacement from the city center, which has compact urban morphology and higher accessibility to public transit, to suburban areas.

In previous research, many studies continuously focused on the emissions impact of traffic volume and congestion (Barth and Boriboonsomsin, 2009; Zhang and Batterman, 2013). However, aspects of urban morphology had been relatively overlooked. Urban morphology has a direct impact on the accessibility of public transit, vehicle miles traveled (VMT), congestion, and dispersion of emissions (Ewing, 2008). Accordingly, recently, some studies about the emissions impact of traffic and public transit focused on the disperse and geographical vulnerability considering 3D urban morphology and other components (Pomponi et al., 2021; Voordeckers et al., 2021).

This study focused on the effect of urban morphology inequity on emissions. Specifically, to understand the effect of inequity of urban morphology on emissions, this study was divided into three aspects, 1) generation (Vehicle Miles Traveled, and congestion), 2) reduction (public transit accessibility, trees, land cover, and land use), and 3) dispersion (building geometry, slope, height). Urban morphology's impact on individual factors was measured. Through this, urban morphology's impact on net emissions was identified.

To identify 2D/3D urban morphology, sky view factor (SVF), building height, building arrangement (building density, largest patch index, mean patch size, mean nearest neighbor, edge density) were measured. Also, average annual daily traffic (AADT) for calculation of vehicle miles traveled (VMT) and HERE data to measure congestion were used. The tree canopy was identified using Lidar data. In determining the emissions, the NO₂ from Sentinel-5P TROPOMI and the station data (NO₂, PM 2.5, PM₁₀) were used through verification of correlation. For statistical analysis, the quantitative impact of urban morphology on emissions by socio-demographic characteristics was identified using Geographically Weighted Regression (GWR).

As a result, sprawling development patterns (high SVF, low building height, high mean patch size, low patch density, high mean nearest neighbor) appeared in areas with a higher proportion of the disadvantaged population. Also, it was found that a low tree cover ratio. In addition, it was found to be exposed to higher VMT by highway and other major arterials, and low accessibility of public transit (LRT, BRT, streetcar) appeared. Through this, we found that the low-density development area that has a higher population of the disadvantaged population is exposed to higher emissions (NO₂, PM 2.5, PM 10) relative to the population. Based on this result, it was identified that displacement of disadvantaged people from urban centers to suburban which have low density was accelerated, and due to the

inequity of building morphology, unequal exposure of the emissions was also accelerated. The findings of this research allow giving insights to mitigate emissions through urban planning to stakeholders and transportation planners.

Citations

- Bourdrel, T., Bind, M. A., Béjot, Y., Morel, O., & Argacha, J. F. (2017). Cardiovascular effects of air pollution. *Archives of cardiovascular diseases*, 110(11), 634-642.
- Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., & Chen, D. (2008). *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington, D.C.: Urban Land Institute.
- Khreis, H., Kelly, C., Tate, J., Parslow, R., Lucas, K., & Nieuwenhuijsen, M. (2017). Exposure to traffic-related air pollution and risk of development of childhood asthma: a systematic review and meta-analysis. *Environment international*, 100, 1-31.
- Pomponi, F., Saint, R., Arehart, J. H., Gharavi, N., & D'Amico, B. (2021). Decoupling density from tallness in analysing the life cycle greenhouse gas emissions of cities. *npj Urban Sustainability*, 1(1), 1-10.
- Voordeckers, D., Meysman, F. J. R., Billen, P., Tytgat, T., & Van Acker, M. (2021). The impact of street canyon morphology and traffic volume on NO₂ values in the street canyons of Antwerp. *Building and Environment*, 197, 107825.

Key Words: environmental equity, urban morphology, sky view factor, emissions, NO₂

DOES RESIDENT SATISFACTION ENCOURAGE PARTICIPATION IN URBAN TREE PLANTING INITIATIVES? AN EXPLORATORY CASE FROM GREENFIELD, MASSACHUSETTS

Abstract ID: 1582

Individual Paper Submission

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Street-facing trees are a unique form of living infrastructure that provide various environmental and quality of life benefits. Tree planting initiatives, specifically, often target private yards and city streets, relying on residents to provide critical tree care and maintenance. Theories of resident satisfaction may, in turn, elucidate community interest and capacity for long-term tree stewardship. Resident satisfaction provides a generalized view into the well-being of residents (Kweon et al. 2010) and can demonstrate the degree of “fit” between one’s ideal vision of a neighborhood and the actual, existing circumstances (Loo 1986) and have often been used as a form of public input for political decision-making (Aragonés et al. 2017). Relating practice and scholarship, we studied links between street trees and resident satisfaction, correlated objective attributes of, and subjective attitudes toward, street trees, and assessed the role of resident satisfaction to participating in urban tree planting.

This presentation will first describe the institutional dynamics of urban tree planting initiatives in mid-sized U.S. cities and highlight the implications of relying on private residents for the provisioning of 'public good' environmental benefits - on both public and private properties. Then, results from a spatially-explicit resident satisfaction study (n=369) will be presented as a case study analyzed alongside objective tree measures, like tree health. Results showed that residents are less satisfied with existing street trees and mature trees than other neighborhood features; and interestingly, varying rates of satisfaction related to interest in local urban tree planting.

Together, this research suggests that resident’s attitudes and preferences toward urban trees are important considerations during urban greening. There may also be a range of tradeoffs and synergies in relying on private residents for urban natural resource management. Our research is timely given the rapid adoption of tree planting as a tool to equitably distribute environmental and quality of life benefits in cities (Young 2011, Nguyen 2017).

Citations

- Aragonés, Juan Ignacio, María Américo, and Raquel Pérez-López. 2017. Residential Satisfaction and Quality of Life. In *Handbook of Environmental Psychology and Quality of Life Research*. Fleury-Bahi, Ghazlane, Enric Pol, and Oscar Navarro, eds. International Handbooks of Quality of Life. Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-319-31416-7>.
- Kweon, Byoung-Suk, Christopher D Ellis, Pedro I Leiva, and George O Rogers. 2010. “Landscape Components, Land Use, and Neighborhood Satisfaction.” *Environment and Planning B: Planning and Design* 37 (3): 500–517.

- Loo, Chalsa. 1986. "Neighborhood Satisfaction and Safety: A Study of a Low-Income Ethnic Area." *Environment and Behavior* 18: 109–31.
- Nguyen, Vi D., Lara A. Roman, Dexter H. Locke, Sarah K. Mincey, Jessica R. Sanders, Erica Smith Fichman, Mike Duran-Mitchell, and Sarah Lumban Tobing. 2017. "Branching out to Residential Lands: Missions and Strategies of Five Tree Distribution Programs in the U.S." *Urban Forestry & Urban Greening* 22 (March): 24–35.
- Young, Robert F. 2011. "Planting the Living City: Best Practices in Planning Green Infrastructure—Results From Major U.S. Cities." *Journal of the American Planning Association* 77 (4): 368–81.

Key Words: urban trees, tree planting, resident satisfaction, participation

COMMUNITY ADVOCACY AND ENVIRONMENTAL STEWARDSHIP: THE CASE OF COASTAL FLOODING

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Individual Paper Submission

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While the Texas coast continues to grow as a major gateway to international and domestic maritime commerce, Texas coastal communities have historically faced multiple hazards from flooding, air, and water pollution, rising sea levels and tropical storms (Kinzer et al., 2021). Although many hazards are associated with natural processes, growing industrial activities and a lack of comprehensive data and policy measures to mitigate hazardous events have intensified their threats (Cigler, 2017; Consoer & Milman, 2017; Kick et al., 2011; N. Lam et al., 2016; Sadiq, 2017; Tyler et al., 2019). Researchers argue that coastal floods stem from a mix of physical, social, built, and political environments (Brody et al., 2011). While policies to address devastation are made in response to such events, developments along coastal areas continue unabated for their economic returns and benefits (Wong-Parodi et al., 2017). Developments in coastal areas along with the rising sea levels and increased precipitation have increased the risks as well as occurrences of flooding. Others have argued that the flood policies at the federal level are costly and ineffective and do not discourage construction in high-risk flood zones (Cigler, 2017; Strother, 2016). In fact, these policies are fragmented, reactive, and changed after catastrophic events (Birkland, 2001).

Some adaptation strategies include structural and non-structural measures of preservation and relocation (Hirschfeld et al., 2020). These, however, depend on the local contexts and community capacity (Corburn, 2003; Silbernagel et al., 2015). To assess the structure of existing communication, information-gathering, information-sharing, and policymaking networks in the coastal region of Texas, we take the city of Ingleside on the Bay (IOB) to conduct an in-depth case study of the community adaptive capacity in addressing the environmental and industrial threats to coastal flooding. To assess this, our interdisciplinary team (Social Science, Engineering, planning and Architecture), asks the overarching question, How is the community addressing environmental challenges from coastal flooding? In doing so, we ask:

1. What is the community capacity for responding to flooding issues?
2. What adaptive strategies are in place to address flooding?
3. What strategies work to increase the capacity of networks and build relationships among community nonprofit organizations?
4. What are the policy implications of the initiatives?

We apply the grounded theory (GT) framework to assess the local context of coastal flooding and develop an understanding of community based adaptive measures. As GT is an inductive research method it helps to uncover theoretical explanations and interpretations from social science data using a bottom-up, inclusive approach (Dunn & Swierczek, 1977). IOB is a coastal town near Corpus Christi, Texas. We hypothesize that understanding existing networks for gathering, sharing, and leveraging information among residents and decision-makers is a critical first step toward identifying data needs and effectively integrating sensing technologies into future planning and policymaking efforts. We generate data from focus group discussions of community stakeholders, analyze the local, regional, and state level flood policies, and study the initiatives of the local government and community-based environmental organizations. The findings from this research are intended to help strengthen adaptation and advocacy efforts of rural communities and inform the socio-technical method to develop a secure, energy-efficient,

real-time, and reliable sensing network and data dashboard for environmental monitoring.

Citations

- Birkland, T. A. (2001). Scientists and Coastal Hazards: Opportunities for Participation and Policy Change. *Environmental Geosciences*, 8(1), 61–67. <https://doi.org/10.1046/j.1526-0984.2001.008001061>
- Brody, S. D., Gunn, J., Peacock, W., & Highfield, W. E. (2011). Examining the Influence of Development Patterns on Flood Damages along the Gulf of Mexico. *Journal of Planning Education and Research*, 31(4), 438–448. <https://doi.org/10.1177/0739456X11419515>
- Dunn, W. N., & Swierczek, F. W. (1977). Planned Organizational Change: Toward Grounded Theory. *The Journal of Applied Behavioral Science*, 13(2), 135–157. <https://doi.org/10.1177/002188637701300202>
- Hirschfeld, D., Hill, K. E., & Riordan, B. (2020). The regional fingerprint: A new tool to evaluate adaptive capacity. *Environmental Science & Policy*, 112, 36–46. <https://doi.org/10.1016/j.envsci.2020.05.019>
- Silbernagel, J., Host, G., Hagley, C., Hart, D., Axler, R., Fortner, R., Axler, M., Smith, V., Drewes, A., Bartsch, W., Danz, N., Mathews, J., & Wagler, M. (2015). Linking place-based science to people through spatial narratives of coastal stewardship. *Journal of Coastal Conservation*, 19(2), 181–198. <http://dx.doi.org/10.1007/s11852-015-0380-1>

Key Words: Community Advocacy, Environmental Stewardship, Grounded Theory, Coastal Flooding

PROPOSING THE MEGA-ECO: A STUDY OF LARGE-SCALE NATURE-BASED MEGAPROJECTS

Abstract ID: 1591

Individual Paper Submission

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Anthropogenic activities have created two interrelated global crises of climate change and mass extinction (Daniels, 2014). Nature-based Solutions (NbS) was coined in 2008 by the World Bank as a strategy to tackle these concerns by sequestering massive amounts of carbon while also providing human and biodiversity co-benefits (Faivre, N. et al., 2017). As a result, NbS have become exceedingly popular, with many academics and practitioners calling for their rapid upscaling as if they were a novel concept (IUCN, 2020). However, examples of large-scale environmental restoration projects already exist, and no one has holistically evaluated and inventoried them. In collaboration with the University of Pennsylvania Chair of Landscape Architecture, Richard Weller, we have identified over 170 of these works and are examining them under the proposed new term "mega-eco projects" to remedy this gap. This paper will address the questions: (1) What constitutes a mega-eco project? (2) Where are these projects located? (3) Who has implemented them? (4) What potential do mega-eco projects have to combat climate change and the extinction crisis?

Weller and I define mega-eco projects as complex, landscape-scale environmental restoration and construction endeavors that aim to help biodiversity and communities adapt to climate change. From this definition, we have further organized mega-eco projects into a typology composed of four types: conservation projects, anti-desertification projects, watershed projects, and metropolitan projects. These works are rivaled only at a scale and often a price tag by megaprojects, from which the mega-eco draws its name. Studies on megaprojects began in the 1960s by examining billion-dollar hard infrastructure composed primarily of human-made concrete and steel. Recently, economic geographer Bent Flyvbjerg determined that nearly everyone is over time, over budget, and underperforms, which is known as the "iron law of megaprojects" (Flyvbjerg, 2014). In the current United Nation's Decade of Ecosystem Restoration, it is imperative that the nature-based mega-eco projects are recognized and studied to avoid a similar trend.

This paper, composed of four parts, will establish mega-eco projects into the common vernacular of NbS and planning fields by developing the idea and directing future studies toward best management practices and risk avoidance. The first section illustrates the need for mega-eco projects to combat our current crises and provides a synthesis of relevant literature. Following this, the second part establishes the definition and description of mega-eco projects. Part three introduces the typology with a brief history of each type and provides mapped boundaries of these works. Additionally, this part gives examples that show different aspects of mega-eco project performance, implementation, and operation. Finally, the paper addresses the potential of mega-eco projects to combat these crises and areas for future research. From the modern \$14 billion-dollar Great Green Wall of the Sahara and the Sahel to Olmsted's 1870s Emerald Necklace, mega-eco projects create hope in the Anthropocene epoch. This study and paper of past, present, and emerging mega-eco projects will begin the process of their analysis.

Citations

- Daniels, T. (2014). *The Environmental Planning Handbook: for Sustainable Communities and Regions*. Second Edition. New York, NY: Routledge.
- Faivre, N., et al. (2017). "Nature-based Solutions in the EU: Innovating with Nature to Address Social, Economic and Environmental Challenges." *Environmental Research*, Vol. 159. pp 509 – 518.
- Flyvbjerg, B. (2014). "What You Should Know About Megaprojects and Why: An Overview." *Project Management Journal*. Vol. 45. No. 2. pp. 6 - 19. Flyvbjerg, B. (2014). "What You Should Know About Megaprojects and Why: An Overview." *Project Management Journal*. Vol. 45. No. 2. pp. 6 - 19.
- IUCN. (2020) *Global Standard for Nature-based Solutions. A User-friendly Framework for the Verification, Design and Scaling up of NbS*. First edition. Gland, Switzerland: IUCN.

Key Words: Nature-based Solutions, Environmental Planning, Regional Planning, Megaprojects, Adaptation

CLOSING THE CLIMATE GAP: COMMUNITY-LED CREATION OF A TOOL AND PROCESS TO INCORPORATE FRONTLINE RESIDENTS' KNOWLEDGE INTO CLIMATE ADAPTATION PLANNING

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Individual Paper Submission

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This article seeks to address the following research questions: what knowledge do residents have about climate-related flooding, heat, and air quality events, and how does this knowledge relate to gaps in municipal climate adaptation planning identified by residents?

Local communities experience firsthand the impacts of climate events, such as flooding, extreme heat, and wildfire. Marginalized populations see these impacts magnified by underlying conditions such as poverty and poor health. At the same time, residents on the frontline of climate events frequently have critical knowledge about the characteristics of these challenges, the harms they cause, and potential solutions. Inclusion of local knowledge into climate adaptation planning may increase procedural justice for frontline populations as well as generate a suite of positive outcomes stemming from participation itself. For instance, research has found that residents' participation in climate adaptation planning increases their understanding and awareness of environmental risks as well as their capacity to work toward equitable climate adaptation. Additional research has found that residents' lived experiences and participation can improve overall climate adaptation plan quality.

However, frontline communities often have scarce opportunity to participate in climate adaptation planning. In response, researchers, communities, local agencies, and nonprofit organizations have identified the urgent need to better link everyday knowledge about people's experiences of and responses to climate events to climate adaptation planning. This article seeks to address this gap in part by presenting findings from interviews with residents conducted at the beginning of a four-year community-based participatory research project focused on co-designing a climate adaptation planning tool and process centered on local knowledge. Interviews were conducted with 35 residents of the Dove Springs (Austin, Texas) neighborhood, a diverse, socially vibrant, and predominantly Hispanic/Latinx neighborhood experiencing repeated and severe flooding, increasing urban heat, and growing air quality impacts from wildfires. After a severe flood that resulted in loss of life and extensive property loss, residents and a community-serving organization, Go Austin!, Vamos Austin! (GAVA) identified the need for a website and phone app where residents can both share knowledge about their community, climate events, and other chronic stressors as well as find information needed to prepare for and respond to climate events. UT Austin researchers partnered with residents, GAVA, and the City of Austin to secure a National Science Foundation grant to co-develop website/app supported by the establishment of a network of residents training in disaster preparedness and community organizing techniques.

Interview recordings were transcribed and coded into key themes through several rounds of qualitative analysis by multiple researchers. Key themes present information about residents' knowledge of climate events and gaps in existing climate adaptation planning. Participants identified household, block, and neighborhood-scaled impacts, with a particular focus on how climate events exacerbate existing health, food insecurity, and household financial challenges. Residents highlighted in particular the need to develop climate adaptation tools and processes which include non-English-speaking and immigrant communities that frequently lack trust in municipality-led climate adaptation planning. We then outline next steps for community-driven ideas about how to link local knowledge to municipal, NGO, and household-scaled climate adaptation decision making. Our findings are relevant for planning scholars and practitioners considering how to integrate local knowledge into climate adaptation planning, as well as for residents seeking tools and processes that can be used to increase preparedness and response—at the household as well as municipal scale. In addition, the online data interface, community engagement processes, and policy-making process developed by this project can be adapted by other communities in the US experiencing climate events and chronic stressors.

Citations

- Berke, P. R., & Stevens, M. R. (2016). Land use planning for climate adaptation: Theory and practice. *Journal of Planning Education and Research*, 36(3), 283-289.
- Meerow, S., & Woodruff, S. C. (2019). Seven principles of strong climate change planning. *Journal of the American Planning Association*, 1-8.
- Meyer, M. A., Hendricks, M., Newman, G. D., Masterson, J. H., Cooper, J. T., Sansom, G., ... & Cousins, T. (2018). Participatory action research: Tools for disaster resilience education. *International journal of disaster resilience in the built environment*?
- Lieberknecht, K. (2022). Community-centered climate planning: Using local knowledge and communication frames to catalyze climate planning in Texas. *Journal of the American Planning Association*, 88(1), 97-112.
- Shi, L., Chu, E., Anguelovski, I., Aylett, A., Debats, J., Goh, K., ... & Roberts, J. T. (2016). Roadmap towards justice in urban climate adaptation research. *Nature Climate Change*, 6(2), 131.

Key Words: Climate adaptation planning, Local knowledge, Community-based participatory research, Climate justice, Community-based climate planning

EXURBAN CONSERVATION EASEMENTS' IMPORT WITH CLIMATE CHANGE

Abstract ID: 1616

Individual Paper Submission

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Like most protected land strategies, conservation easements (CEs) are static instruments. They are used primarily on private lands, with numerous federally enabled purposes that effectuate a broader public interest. However beneficial, cumulative private CE decisions have the potential to affect public land use options and systematic conservation planning. With climate change associated biome shifts and the imperative to prevent land conversion, private land conservation is an increasingly integral element of the conservation toolkit. CEs can protect endangered species, threatened ecosystems, and human food systems, contributing to a larger landscape conservation network of undeveloped and working lands (Clancy et al., 2020; Kareiva et al., 2021; Loeb & D'Amato, 2020).

CEs offer permanence through perpetuity, which is precisely what makes them appealing for present day land conservation. But that perpetual rigidity is the Achilles heel of climate change adaptation, ultimately threatening CEs' enumerated purposes and therefore, legal viability. This can occur either directly, through physical destruction from climate change that changes the character of the conserved land (heat, sea level rise, hurricanes, etc.) or more indirectly by forcing growth adjacent to the CEs (surrounding and isolating properties), reducing their ability to effectuate their purpose(s). To date, most of the social science literature exploring climate change impacts on CEs has been focused on adapting the documents themselves, and potential solutions through options to purchase CEs (Cheever & Owley, 2016). One line of examination involved CE document examination of 269 CEs and interviews with seventy conservation officials in six states across the country to determine, in part, how CEs could be adapted to climate change (Rissman et al., 2015; Owley et al., 2018). Owley et al. identified "four types of climate-responsive land conservation" including "shift[ing] land acquisition priorities to account for potential climate change impacts; consider[ing] conservation tools other than perpetual CEs; ensur[ing] that the terms of CEs permit the holder to adapt to climate change successfully; and provid[ing] for more active stewardship of conservation assets" (pp. 733 – 734).

As part of a larger study with multiple objectives, our line of inquiry augments aspects of the Owley et al. (2018) typology, but more fundamentally examines how CEs in growing exurban areas are positioned to address climate change through the perspective of the land trusts and landowners stewarding them. To answer this question, we employed a multi-modal approach, including coding over 2,000 CE instruments, conducting interviews with land trusts in spring and summer 2019, and administering a subsequent survey of the landowners with CEs in summer 2021 in twelve exurban study counties in six eco-regionally representative states (CA, CO, MN, SC, PA, and VA). These counties represent areas with significant growth pressure and need for conservation, making them prime for the issues faced with climate-change induced land conversion. We used a semi-structured interview method with the staff of the LTs that we identified through CE instrument coding for CEs placed between 1997 and 2008/2009. For the survey, we generated a post-test survey instrument for dissemination via mailed invitation to respond on-line, followed by a mailed hard copy (Dillman et al., 2014) to all of the known property owners with CEs placed between 1997 and 2008/2009 in each county. These methods allowed us to offer a unique perspective in this burgeoning line of inquiry; namely, the land trust and landowners' intents with their CEs in the face of climate change. We were able to both test and augment the Owley et al. (2018) findings regarding active stewardship, adding a new perspective on how exurban CEs can respond to current and future climate change concerns, which will impact land conversion and

future public land use options.

Citations

- Clancy, N.G., Draper, J.P., Wolf, J.M., Abdulwahab, U.A., Pendleton, M.C., Brothers, S., Brahney, J., Weathered, J., Hammill, E., & Atwood, T.B. (2020). Protecting endangered species in the USA requires both public and private land conservation. *Scientific Reports*, 10:11925. Doi:10.1038/s41598-020-68780-y
- Kareiva, P., Bailey, M., Brown, D., Dinkins, B., Sauls, L., & Todia, G. (2021). Documenting the conservation value of easements. *Conservation Science and Practice*, 3:e451, 1 – 13. Doi: 10.1111/csp2.451.
- Loeb, C.D., & D'Amato, A.W. (2020). Large landscape conservation in a mixed ownership region: Opportunities and barriers for putting the pieces together. *Biological Conservation*, 243: 108462, 1 - 11. Doi: 10.1016/j.biocon.2020.108462.
- Owley, J., Cheever, F., Rissman, A.R., Shaw, M.R., Thompson, B.H., & Weeks, W.W. (2018). Climate change challenges for land conservation: Rethinking conservation easements, strategies, and tools. *Denver Law Review*, 95(3), 727 – 780.
- Rissman, A.R., Owley, J., Shaw, M.R., & Thompson, B. (2015). Adapting conservation easements to climate change. *Conservation Letters*, 8(1), 68 – 76. Doi: 10.1111/conl.12099.

Key Words: conservation easements, climate change, stewardship

LEARNING FROM WORKERS: THE SOCIAL EQUITY AND URBAN PLANNING IMPLICATIONS OF GREEN JOBS PROGRAMS

Abstract ID: 1618

Individual Paper Submission

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Local jurisdictions are increasingly promoting green workforce initiatives as part of their social policy and climate mitigation efforts. But urban greening initiatives are now central to neoliberal growth. Government and private officials often tout green jobs growth plans without offering a new environmental or labor ethic (Kouri and Clarke 2014). These ecological modernization approaches extend exploitative divisions of labor that are racialized and gendered (Barca 2019). Alternatively, environmental justice approaches to labor initiatives involve disrupting existing reproduction processes, and they link the grassroots with institutional actions. Living wages, unionization, safe workplace conditions, and employer-ownership are key mechanisms by which these justice-oriented approaches have been pursued.

Urban planning scholars have made the case for the planning field's critical role in creating these improved material conditions. Shrock (2014) points out that the workforce development field bridges planners' focus on "place" and "people" prosperity by rethinking how communities might benefit from urban development. The workforce development field's focus on skills, networks, and careers creates the people prosperity central to equity planning. To build on this potential, cities need multi-stakeholder governance processes that hold sociocultural diversity and attend to structural disadvantages that exist amongst historical actors (Song 2016). In addition, green workforce development programs can carry out collective priorities through the adoption of community education principles. These are instances where program design goes beyond identifying and responding to individual needs by also working to solve problems at a social level (Griswold 2013).

Understanding that workers themselves hold critical insights on community-wide problems, this study examined the individual and community-level equity implications of green workforce development programs. Our research-practice partnership included university researchers, a nonprofit workforce development organization, and two city agencies. Project partners collaborated to determine how local Civilization Conservation Corps members, a city-sponsored green career exposure program, was preparing program participants for green career pathways. We employed photovoice, a participatory action research methodology that involves participants taking photographs in response to a series of prompts that were iteratively developed amongst project partners. Over the course of the workshops, participants collected and discussed 52 images, and the group's insights were synthesized and linked to recommendations for program improvement.

Our findings illustrate how green workforce development programs hold important consequences for social and spatial equity in cities, and they suggest some potential paths forward. Under certain conditions, these programs can enroll people who hold a deep commitment to serving urban communities and mitigating environmental degradation; we found that most participants wanted post-program careers where they would continue to do both. However, participants expressed dissatisfaction with how little they knew about the history of their worksites. They also questioned whether their park-cleaning efforts reinforced inequity by enabling gentrification or maintaining the upkeep of already affluent communities.

We conceptualize program participants' critical reflections as fissures of neoliberal urban green development. On the one hand, they hold the commitment to service that harkens back to New Deal Civilization Conservation Corps programs. On the other hand, their critiques challenge the role of green jobs programs in unequal urban development. We argue that community education approaches to green workforce development are a key mechanism by which to link jobs programs to equity planning efforts.

Citations

- Barca, Stefania. "Labour and the ecological crisis: The eco-modernist dilemma in western Marxism (s)(1970s-2000s)." *Geoforum* 98 (2019): 226-235.
- Kouri, Rosa, and Amelia Clarke. "Framing 'green jobs' discourse: analysis of popular usage." *Sustainable Development* 22, no. 4 (2014): 217-230.
- Griswold, Wendy. "Community Education and Green Jobs: Acknowledging Existing Connection." *Adult Learning* 24, no. 1 (2013): 30-36.
- Schrock, Greg. "Connecting people and place prosperity: workforce development and urban planning in scholarship and practice." *Journal of Planning Literature* 29, no. 3 (2014): 257-271.
- Song, Lily. "Enabling transformative agency: community-based green economic and workforce development in LA and Cleveland." *Planning Theory & Practice* 17, no. 2 (2016): 227-243.

Key Words: Environmental justice, Workforce development, Sustainable development, Green infrastructure, Photovoice

PLANNING FOR THE ENERGY TRANSITION IN RURAL CANADA

Abstract ID: 1624

Individual Paper Submission

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The biggest challenge facing municipalities today is how to embrace the ongoing energy transition from fossil fuels to renewables. The goal of this research is to contribute knowledge on how rural municipalities in southern Ontario and Manitoba are integrating energy planning into their official plans. Energy production systems are transitioning away from fossil fuels and centralized distribution to small-scale decentralized systems using renewable sources. Energy generation will become a more visible and predominant land use. Rural spaces are already highly contested in southern Ontario and southern Manitoba where rapidly growing population are creating significant development pressure. This creates a challenge for planners who must adapt land-use planning frameworks to include renewable energy into settlement patterns and the built form. This research uses a series of case studies (N = 6) to assess the integration of energy planning and land-use planning in rural contexts. Data collection includes a survey of professional planners (N=60), and key-informant interviews with planners, developers, and utility staff from each municipality to identify what enables and prevents integration of energy and land-use planning (N=18). Preliminary findings suggest support from provincial / state governments and local political leadership are essential to successful integration. Limited capacity, lack of jurisdiction, lack of political will, and poor cooperation with utility companies are key barriers planners and local governments face in integrating energy and planning. Rural communities are at the forefront of the renewable energy transition, but existing land-use planning frameworks are maladapted to enable it. Many communities have attempted to integrate energy within their land-use plans, only to see limited results. This research contributes to understanding why this implementation gap exists, and what planners can do to address it.

Citations

- Calvert, K., Smit, E., Wassmansdorf, D., & Smithers, J. (2021). Energy transition, rural transformation and local land-use planning: Insights from Ontario, Canada. *Environment and Planning E: Nature and Space*, 0(0), 251484862110249. <https://doi.org/10.1177/25148486211024909>
- Dale, A., Robinson, J., King, L., Burch, S., Newell, R., Shaw, A., & Jost, F. (2020). Meeting the climate change challenge: local government climate action in British Columbia, Canada. *Climate Policy*, 20(7), 866–880. <https://doi.org/10.1080/14693062.2019.1651244>
- Guyadeen, D. (2019). Evaluating the Quality of Municipal Official Plans in the Ontario-Greater Golden Horseshoe Region, Canada. *Journal of Planning Education and Research*, May. <https://doi.org/10.1177/0739456X19859648>
- Naumann, M., & Rudolph, D. (2020). Conceptualizing rural energy transitions: Energizing rural studies, ruralizing energy research. *Journal of Rural Studies*, 73(October 2019), 97–104. <https://doi.org/10.1016/j.jrurstud.2019.12.011>

- Stevens, M. R., & Senbel, M. (2017). Are municipal land use plans keeping pace with global climate change? *Land Use Policy*, 68(July), 1–14. <https://doi.org/10.1016/j.landusepol.2017.07.026>

Key Words: Energy planning, Energy transition, Rural communities, Climate change

ENVIRONMENTAL JUSTICE IN ENERGY TRANSITION: QUANTIFYING RACIAL DISPARITIES IN AIR QUALITY USING A CASE STUDY OF CLEAN TRUCK PROGRAM IN NEW YORK AND NEW JERSEY

Abstract ID: 1639

Individual Paper Submission

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Many studies find that environmental injustice exists that pollution disproportionately impacts poor communities, and generates severe health disparities in the lower income households (Richmond-Bryant et al. 2020). Although policy efforts for cleaner air have been reported to successfully reduce some air pollution, there have been far less empirical studies quantifying the effectiveness of those measures from an environmental justice (EJ) perspective.

This study provides empirical evidence regarding environmental justice improvements from the Clean Truck Program at the Port of New York and New Jersey. The Clean Truck Program (CTP) is a nation-wide voluntary subsidy program that seeks to replace the old heavy-duty diesel trucks with newer trucks to improve fuel economy. My research question is: how much does the CTP improve the air quality for the EJ communities? My hypothesis is that the marginal decrease in pollution would be higher for the EJ communities (lower-income Black and Hispanic populations) than the other groups after implementing the CTP. I measure how much the annual average nitrogen dioxide (NO₂) concentration level is reduced for the local EJ communities before and after implementation in 2010.

To conduct the analysis, two kinds of data are used: air pollution and demography data. As air pollution data, I use the predicted NO₂ values estimated using the Land Use Regression model from (Wang 2020) to better represent the local air quality than the values from monitoring stations. In terms of the demographic data, I use the American Community Survey 5-YR estimate in 2006-2010 and 2011-2015 to obtain the race and socio-economic variables. Those include median income, median housing value, poverty level, and education attainment. Other explanatory variables include: (i) a dummy variable denoting when the Clean Truck Program was in effect, which is sourced from the PANYNJ; and (ii) the “distance from the port terminals” variable, which I calculated using ArcGIS Pro version 2.9.2. In terms of the research methodology, Difference-in-Differences model is used to quantify the marginal reduction in pollutants by population.

This study contributes to analyzing the local environmental impact of sustainable port activities. My research is important due to its higher relevancy for other U.S. ports. similar level of infrastructure facility and located in the similar surrounding local neighborhood to the majority of the U.S. ports, making my findings useful in the wider region.

Citations

- Clark, Lara P., Dylan B. Millet, and Julian D. Marshall. 2017. “Changes in Transportation-Related Air Pollution Exposures by Race-Ethnicity and Socioeconomic Status: Outdoor Nitrogen Dioxide in the United States in 2000 and 2010.” *Environmental Health Perspectives* 125(9):097012. doi: 10.1289/EHP959.
- Richmond-Bryant, Jennifer, Ihab Mikati, Adam F. Benson, Thomas J. Luben, and Jason D. Sacks. 2020. “Disparities in Distribution of Particulate Matter Emissions from US Coal-Fired Power Plants by Race and Poverty Status After Accounting for Reductions in Operations Between 2015 and 2017.” *American Journal of Public Health* 110(5):655–61. doi: 10.2105/AJPH.2019.305558.
- Wang, Yuzhou. 2020. “Spatial Decomposed Concentrations of NO₂ and PM_{2.5} Air Pollution in the United States at Census Block Group Level.” 1. doi: 10.17632/ckdvx3d3zc.1.

Key Words: Clean Truck Program, Local Air Quality, Racial Disparities, Difference-in-Differences Model, Port of New York and New Jersey

THE PERNICIOUS EFFECTS OF UNCERTAINTY ON MUNICIPAL CLIMATE ACTION

Abstract ID: 1651

Individual Paper Submission

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Climate change mitigation and adaptation is a defining challenge for cities over the next several decades. Though there are many actions that municipal leaders can take right now to assume leadership in mitigation strategies and to prepare their cities for a changing climate, their assessments of specific policies are clouded by uncertainty regarding both climate science and policy interventions. Climate change is clearly already impacting cities but the range of forecasts from the IPCC is wide and downscaling climate science is a difficult and costly exercise. Climate uncertainty is thus inevitable – it should be a priority for researchers to better understand how this uncertainty is impacting decisions to pass climate policy. Our research seeks to understand whether uncertainty encourages additional, precautionary action or if uncertainty degrades the likelihood of climate action.

In order to answer our questions, we sent a survey to every elected city councilor (or equivalent) and mayor in cities with over 100,000 people. We received 245 completed responses that we analyzed using structural equation modeling (SEM). This survey also included a gain/loss/no framing section in order to determine if framing effects interact with uncertainty to influence municipal action. The SEM approach allows us to derive latent variables of ‘climate uncertainty’ and ‘climate policy propensity’. We are additionally able to test multiple pathways for uncertainty to impact climate action. Our results indicated that uncertainty does indeed diminish the probability for municipal elected officials to take climate action but we found no framing effect. In addition to answering the central research questions, we also provide a rare snapshot on municipal elected officials’ perspective on climate change. While we found widespread support for action, political party and gender were significant variables that determine the level of support.

Citations

- Marris, P. (2003). *The politics of uncertainty: Attachment in private and public life*. Routledge.
- Rocher, L. (2017). Governing metropolitan climate-energy transition: A study of Lyon’s strategic planning. *Urban Studies*, 54(5), 1092–1107. <https://doi.org/10.1177/0042098015624851>
- Kause, A., Townsend, T., & Gaissmaier, W. (2019). Framing Climate Uncertainty: Frame Choices Reveal and Influence Climate Change Beliefs. *Weather, Climate, and Society*, 11(1), 199–215. <https://doi.org/10.1175/WCAS-D-18-0002.1>
- Kause, A., Townsend, T., & Gaissmaier, W. (2019). Framing Climate Uncertainty: Frame Choices Reveal and Influence Climate Change Beliefs. *Weather, Climate, and Society*, 11(1), 199–215. <https://doi.org/10.1175/WCAS-D-18-0002.1>
- Iyengar, S., & Krupenkin, M. (2018). The Strengthening of Partisan Affect: Strengthening of Partisan Affect. *Political Psychology*, 39, 201–218. <https://doi.org/10.1111/pops.12487>

Key Words: Climate, Uncertainty, Municipal governance, Mitigation, Adaptation

LEGACIES OF REDLINING LEAD TO UNEQUAL COOLING EFFECTS OF URBAN TREE CANOPY

Abstract ID: 1654

Individual Paper Submission

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Many previous studies have explored the spatiotemporal characteristics of urban thermal environments or compared the cooling effects of various mitigation strategies. These results provide grounds for urban planners and policymakers to effectively counteract climate change challenges. A parallel research area has recently started to document the legacy effect of land use policies on urban forests uncovering social inequities. One of the social drivers that have been influencing US-based intra-urban temperature heterogeneity is the historic redlining policy. The policy was officially abolished about 50 years ago, but its lingering impacts on environmental racism, including the inner-city differences in temperature and canopy cover levels, have been detected through a few empirical studies. Nonetheless, redlining policy-induced temperature inequality is still underexplored due to several methodological limitations inherent in previous research.

In this study, we first explore the descriptive patterns of land surface temperature and canopy area by the Home Owners’ Loan Corporation (HOLC) redlining grades and then statistically uncover the varying canopy cooling effects by the grades based on the neighborhoods in Portland, Oregon, and Philadelphia, Pennsylvania. The primary assumption of the research is that past redlining policy has been influencing the current urban environments. We test three hypotheses to unravel the heterogeneous relationships between canopy cover and land surface temperature according to the redlining grades: (1) A higher HOLC redlining grade records a lower land surface temperature level, and this relationship persists over time, (2) A higher HOLC redlining grade has a larger canopy area, and this relationship persists over time, and (3) A neighborhood with a higher redlining grade benefits more from canopy

cooling benefits.

We develop a research protocol to integrate multiple spatial datasets—Landsat Analysis Ready Data Level-2 surface temperature product, canopy cover datasets, building footprints, and estimated block group population layer—into a master dataset. We use Landsat-based grid cells (30 m × 30 m) from land surface temperature products as analytical units to test three research hypotheses. The master dataset has a hierarchical structure—level 1 (grid-level) variables are land surface temperature, canopy area, and building area, and level 2 (neighborhood-level) variables are redlining grade and population density. First, we conduct boxplots, Kruskal–Wallis H tests, and post-hoc multiple comparison tests to examine the distributions of land surface temperature and canopy area by the HOLC redlining grades in 2007 and 2017. The HOLC redlining grades are adjusted into three grades based on the descriptive patterns captured by the boxplots. Then, we introduce mixed-effects models to statistically investigate the different magnitude of canopy cooling effects by the adjusted redlining grades.

We show that the higher HOLC grade has lower land surface temperature and a larger canopy area in both Portland and Philadelphia. Using mixed-effects models, we find the statistically significant and different magnitude of canopy cooling effects across the redlining grades, but the two cities show the opposite direction of effects in the low grade. Specifically, the increase in canopy area in the lower grade shows a greater cooling effect than in the high grade in Portland, whereas the high grade benefits more from increasing the canopy area than the low grade in Philadelphia. Overall, this research can provide empirical evidence for promoting a more equitable urban environment. Given the limited budgets and spaces, the efficiency of installing additional trees may be considered as a major factor, but this research suggests that equity should also be considered in responding to the elevated intra-urban thermal environments.

Citations

- Hoffman JS, Shandas V and Pendleton N (2020) The Effects of Historical Housing Policies on Resident Exposure to Intra-Urban Heat: A Study of 108 US Urban Areas. *Climate* 8(1). 1. Multidisciplinary Digital Publishing Institute: 12. DOI: 10.3390/cli8010012.
- Locke DH, Hall B, Grove JM, et al. (2021) Residential housing segregation and urban tree canopy in 37 US Cities. *npj Urban Sustainability* 1(1). 1. Nature Publishing Group: 1–9. DOI: 10.1038/s42949-021-00022-0.
- Nardone A, Rudolph KE, Morello -Frosch Rachel, et al. (2021) Redlines and Greenspace: The Relationship between Historical Redlining and 2010 Greenspace across the United States. *Environmental Health Perspectives* 129(1). *Environmental Health Perspectives*: 017006. DOI: 10.1289/EHP7495.
- Wilson B (2020) Urban Heat Management and the Legacy of Redlining. *Journal of the American Planning Association* 86(4). Routledge: 443–457. DOI: 10.1080/01944363.2020.1759127.

Key Words: redlining policy, environmental equity, canopy cooling effect, land surface temperature, mixed-effects model

SOCIAL VULNERABILITY TO FLOODS AND STORMWATER INFRASTRUCTURE IN WASHINGTON DC

Abstract ID: 1682

Individual Paper Submission

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Historically, hazard literature has used 'social vulnerability' to describe how social stratification, based on race, income, education, gender, and other factors, differentially affects the risks and impacts that a community experiences in a disaster. The theories and empirical findings of disaster literature indicate that racially or socially marginalized communities have access to less safe built environments. Recent studies exploring green stormwater infrastructure (GSI) distribution from the perspective of environmental justice show that a high distribution of GSI significantly correlates with better-resourced communities. However, those studies do not show whether marginalized communities less benefited from protective measures are socially vulnerable and whether the vulnerable communities are relatively excluded from the flood mitigation benefits of stormwater infrastructure, linking the distribution of infrastructure only to specific socio-economic factors. Based on the Pressure and Release (PAR) model of hazards and social vulnerability, this study analyzes whether a communities' social vulnerability is associated with the unequal distribution of gray and green stormwater infrastructure by using the social vulnerability index. The analysis reveals that both gray and green infrastructure capacity has statistically significant correlations with population density, imperviousness rate, and social vulnerability. They show that the infrastructure separation from planning could raise an equity issue in terms of flooding and give support to the role of infrastructure as a mechanism that deepens social vulnerability. These findings require a broader role of planning that includes urban infrastructure elements and more collaborative works with engineers.

Citations

- Baker, A., Brennenman, E., Chang, H., McPhillips, L., & Matsler, M. (2019). Spatial analysis of landscape and sociodemographic factors associated with green stormwater infrastructure distribution in Baltimore, Maryland, and Portland, Oregon. *Science of the Total Environment*, 664, 461-473.
- Cutter, S., B. J. Boruff, and W. L. Shirley. 2003. Social Vulnerability to Environmental Hazards. *Social Science Quarterly*, 84(2): 242-261.
- Mandarano, L., Meenar, M., 2017. Equitable distribution of green stormwater infrastructure: a capacity-based framework for implementation in disadvantaged communities. *Local Environ.* 22, 1338–1357.
- Porse, E. (2018). Open data and stormwater systems in Los Angeles: Applications for equitable green infrastructure. *Local Environment*, 23(5), 505-517.
- Van Zandt, S., Peacock, W. G., Henry, D. W., Grover, H., Highfield, W. E., & Brody, S. D. (2012). Mapping social vulnerability to enhance housing and neighborhood resilience. *Housing Policy Debate*, 22(1), 29-55.

Key Words: Social Vulnerability, Stormwater Infrastructure, Social Vulnerability Index, Green Stormwater Infrastructure

TACKLING BIOLOGICAL INVASION: UNPACKING THE NASCENT DOMAIN OF INVASIVE SPECIES MANAGEMENT PLANNING

Abstract ID: 1684

Individual Paper Submission

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Invasive species of all taxa—from zebra mussels in the Great Lakes to West Nile virus around the world, and Water hyacinth in the Nile to European rabbits in Australia—pose significant threats to ecosystems and the services they provide us, displacing native species, reducing biodiversity, harming agricultural production and forestry, changing our landscapes, and costing trillions of dollars annually in damages and management costs (Humair et al., 2014). Both the drivers and consequences of biological invasions are often found within our planned and built environments, underscoring that they are ultimately and very deeply socio-ecological in nature (Barney et al., 2019). Whether intentionally or not, invasive species are virtually always introduced by humans through horticulture, pet release, ‘hitchhiking’ associated with shipping and travel, and other activities we engage in. The implications are acutely felt through altered landscapes, impacts on human health, and challenges to our food systems. And last but not least, efforts to address invasive species are intertwined with the various interests, priorities, and perspectives of different stakeholders. For example, exotic pet dealers may have different perspectives than ecologists concerned about particular ecosystems in which those exotic pets might find viable homes if released.

Given how intertwined invasive species are with our built environments and their significant impacts, it is surprising how little attention this issue receives in the planning literature and practice. A search of the American Planning Association’s Planning.org website yields two memos, one Planning magazine article, and a handful of workshop listings related to ‘biological invasions’ and ‘invasive species’. A similar search of the Journal of the American Planning Association archives yields six articles that include the term ‘invasive species’ but none is explicitly about this issue. A search of the Journal of Planning Education and Research yields five only marginally related articles. 59 articles in the Journal of Environmental Planning & Management include the term “invasive species”; many of these address policy options and/or land management, but none explicitly focus on planning processes and the tools planning institutions might bring to bear on this issue.

A handful of jurisdictions have developed invasive species management studies and plans—including Bowie, Maryland (2013), Mississauga, Ontario (2021), and the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (2020)—but such plans and planning processes are not widespread.

However, the impacts of invasive species are expected to grow significantly, including as a result of climate change, further necessitating action. It is anticipated that invasive species plans will thus become more common in the coming years.

This paper examines the nascent domain of invasive species management planning at the municipal level and provides some insights into emerging best practices. Insights are drawn not only from the few existing plans, but also from somewhat similar planning processes that are more institutionalized, such as those for climate action.

The underlying research agenda involves document analysis of existing invasive species management plans, a survey of best practices in other similar domains, and interviews with practitioners involved in the work of putting such plans together and implementing them. Insights are also drawn from a case study of nascent efforts to advance invasive species management in the Town of Blacksburg, Virginia, which the author is directly involved with.

Citations

- Humair F, Edwards P, Siegrist M, Kueffer C (2014) Understanding misunderstandings in invasion science: why experts don't agree on common concepts and risk assessments. *NeoBiota* 20: 1-30. <https://doi.org/10.3897/neobiota.20.6043>
- Barney JN, Schenk T, Haak DC, Salom S, Brown B, Hotchkiss ER (2019) Building partnerships and bridging science and policy to address the biological invasions crisis. *Invasive Plant Sci Manag* 12:74–78. doi: 10.1017/inp.2018.33
- Mississauga (2021). Invasive Species Management Plan & Implementation Strategy. <https://www.mississauga.ca/publication/invasive-species-management-plan-and-implementation-strategy/>
- City of Bowie (2013). Bowie Invasive Species Management Study. <https://www.cityofbowie.org/DocumentCenter/View/1034/Invasive-Species-Management-Study-?bidId=>
- Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (2020). Terrestrial and Aquatic Invasive Species Management Plan. https://ctclusi.org/wp-content/uploads/2020/09/Invasive-Species-Management-Plan-CTCLUSI-2013_1.pdf

Key Words: Invasive species, Biological invasion, Ecosystems, Landscape management

SIMULATION OF INSTITUTIONAL DECISION-MAKING IN GREEN INFRASTRUCTURE PLANNING: INCORPORATING STORM WATER MANAGERS' KNOWLEDGE AND PERCEPTIONS INTO AN AGENT-BASED MODEL

Abstract ID: 1691

Individual Paper Submission

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Green infrastructure [GI] tries to simulate natural hydrologic systems to address urban stormwater problems related to excessive flooding and pollution of water bodies. Although GI for stormwater management is on the rise; there is little research that has examined the role of stakeholder perception and decision making in the GI planning process (Montalto et al., 2013).

Innes and Booher [2010] suggests 'collaborative rationality' or incorporating stakeholders in the decision-making process as a key element of planning for urban areas identified as complex socio-ecological systems [SES] (Holling & Gunderson, 2002). Though literature identifies stormwater managers as a key stakeholder for GI implementation (Shandas et al., 2010), there remains a lack of research that incorporates the perception of stormwater managers in formal models of GI implementation (Carlet, 2015). Most GI implementation plans are based on hydrology & hydraulic models that identify optimal placement of GI on the urban landscape, but fail to account for variability in perceptions and decision-making by the people who determine when and where GI is used.

In this paper, we employ an agent-based model [ABM] (Railsback & Grimm, 2011) to explore our hypothesis that GI planning outcomes and adoption rate change when stakeholder perceptions and decision-making are accounted. The model captures the impact of stormwater managers' existing experience and knowledge in implementing green infrastructure. The specific research question is how does incorporation of perceptions regarding GI in an otherwise deterministic model change the overall GI implementation rate and associated environmental outcomes?

We created an ABM in Netlogo (Wilensky, 1999) to simulate GI implementation under two different scenarios. Agents in the model are stormwater managers who choose GI type and location in both scenarios. The first scenario assumes perfect, objective knowledge on the part of the stormwater managers, leading to an optimal solution for the choice and distribution of GI. This model uses deterministic variables to assess GI suitability and overall cost and benefit accrued after implementation [in terms of flood reduction, pollutant removals, etc]. In the second scenario, implementation decisions are weighted using insights from surveys of stormwater managers concerning their awareness and perceived effectiveness of GI types. The resulting pattern of GI implementation is expected to better represent outcomes that are shaped by real-world stormwater manager perceptions about GI. We then extend the second model to simulate how learning (knowledge transfer) might occur over time through managers' direct experience of GI efficacy, contact with other agents, and implementation of policy incentives. Different assumptions about the pace of learning and shifts in perceptions are used to assess how quickly results from the two models will converge. The process of 'learning' and updating perception demonstrates importance that observation, experience, and interaction hold for evolution of GI adoption and how the gap between optimal and practical GI implementation may be bridged.

Agent perceptions of GI are based on a survey of stormwater managers from 48 cities in Utah. The model environment replicates the landscape of these cities with regard to impervious area, built up area, land use, soil, groundwater depth and population density, collected from secondary sources.

The final simulation model illustrates how the various perception stemming from stormwater manager's knowledge of issues translates in different cities and portray in the ultimate choice of stormwater management technique. Our findings demonstrate the importance of knowledge transfer as both a top-down and bottom-up process, in designing GI for stormwater management. In particular, the results will illustrate the role of innovation spread, through dialogue and interaction between agents. The primary relevance of this study is in bridging the gap between a purely objective choice model for GI and more qualitative information on stakeholders' preconceptions and preferences.

Citations

- Carlet, F. (2015). Understanding attitudes toward adoption of green infrastructure: A case study of US municipal officials. *Environmental Science & Policy*, 51, 65-76.
- Shandas, V., Nelson, A., Arendes, C., & Cibor, C. (2010). Tabor to the river: an evaluation of outreach efforts and opportunities for engaging residents in stormwater management.
- Montalto, F. A., Bartrand, T. A., Waldman, A. M., Travaline, K. A., Loomis, C. H., McAfee, C., ... & Boles, L. M. (2013). Decentralized green infrastructure: the importance of stakeholder behaviour in determining spatial and temporal outcomes. *Structure and Infrastructure Engineering*, 9(12), 1187-1205.
- Holling, C. S., & Gunderson, L. H. (2002). *Panarchy: understanding transformations in human and natural systems*. Washington, DC: Island Press.
- Innes, J. E., & Booher, D. E. (2010). *Planning with complexity: An introduction to collaborative rationality for public policy*. Routledge.

Key Words: green infrastructure, agent-based models, human behavior modelling, participatory modelling

COMMUNICATING THE U.S. EPA'S TOXICS RELEASE INVENTORY DATA IN NEWS MEDIA

Abstract ID: 1701

Individual Paper Submission

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This study aims to examine how Toxics Release Inventory (TRI) data is communicated in print and online news texts using content analysis. The TRI program tracks the management of designated toxic chemicals that pose a threat to human health and the environment, and provides the public with information about potential pollution exposures. The program was established as one of the major components of the Emergency Planning and Community Right-To-Know Act (EPCRA) in 1986, briefly after the Bhopal gas leak in 1984. This high-profile accident attracted public attention to potential chemical risks and shedded light on the lack of understanding about the uses, releases, and transfers of toxic chemicals, which led to the legislation of EPCRA.

The TRI program reduced the release of toxic chemicals listed in the inventory by 45% between its inception in 1988 and 1995. The government's provision of information about toxic chemical releases spurs action from communities, civil society, and other social actors, or self-regulation on the part of polluting companies themselves by functioning "as a form of intervention by government in the negotiation process" between social actors (Stephan, 2002, p. 191). Generation and transmission of environmental information like TRI not only elicit action from social actors, but also bring institutional changes such as self-organization of local communities, more inclusive interactions, or newly defined space and territories for environmental governance (Gilek & Kern, 2016; Mol, 2008; Soma et al., 2016). Understanding the way information is processed, reorganized, and transmitted can significantly contribute to the production and management of environmental data for assisting public use.

The news media has a strong advantage when it comes to increasing public knowledge about toxic chemical information due to its accessibility to the broader public. It acts as a conduit for public access to TRI data helping other social actors spread information with its capabilities to reach large audiences without requiring intense previous knowledge or active information-seeking actions on the part of the wider public. As a result, news media becomes a fascinating research territory that displays who are various social players surrounding TRI data, including the media itself, and how they communicate TRI data aimed to reach the public. One thing noteworthy is that the news media does not simply carry what social actors want to communicate, but either selects certain information attractive to the audience or reprocesses information to be newsworthy. Thus, the final form of TRI information delivered to the public through news media is knowledge about health and environmental risk reconstructed by social actors and journalists (Staab, 1990).

In this study, content analysis is conducted to systematically examine patterns in news texts and explore meanings attached to those patterns. Two research questions are addressed: 1) by whom and how is TRI data is communicated in news media with what claims and additional information attached 2) which news values are associated with the communication of TRI data in news media. News articles published from 2017 to 2021 that contain keywords regarding the TRI program and data are coded according to six criteria in addition to basic information about articles: claims-makers, sources of cited TRI data, triggering events relevant to news coverage of TRI, the purpose of mentioning TRI, geographic information, and polluting facilities information. Additional line-by-line coding is performed for sentences and paragraphs containing news value components: personalization, controversy, negativity, eliteness, influence and relevance, unexpectedness, and geographical proximity. Exploratory content analysis and news value analysis are conducted to discover the repeatedly appearing themes and patterns in news values that coincide with the use of TRI data in the news.

Citations

- Mol, A. P. J. (2008). *Environmental reform in the information age: The contours of informational governance*. Cambridge University Press.
- Soma, K., Onwezen, M. C., Salverda, I. E., & van Dam, R. I. (2016). Roles of citizens in environmental governance in the Information Age—Four theoretical perspectives. *Current Opinion in Environmental Sustainability*, 18, 122–130. <https://doi.org/10.1016/j.cosust.2015.12.009>
- Stephan, M. (2002). Environmental Information Disclosure Programs: They Work, but Why? *Social Science Quarterly*, 83(1), 190–205. <https://doi.org/10.1111/1540-6237.00078>
- Staab, J. F. (1990). The Role of News Factors in News Selection: A Theoretical Reconsideration. *European Journal of Communication*, 5(4), 423–443. <https://doi.org/10.1177/0267323190005004003>
- Gilek, M., & Kern, K. (2016). *Governing Europe's marine environment: Europeanization of regional seas or regionalization of EU policies?* Routledge. <https://www.taylorfrancis.com/books/e/9781317125716>

Key Words: informational regulation, environmental risk communication, environmental management, Toxics release inventory, news media

EVALUATING URBAN CLIMATE PLANS ON HEAT MITIGATION AND PREPAREDNESS

Abstract ID: 1721

Individual Paper Submission

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As climate change continues to intensify temperature extremes across the world, understanding the impacts of extreme heat events and planning strategies for heat adaptation and mitigation are critical to human wellbeing. Urban populations are especially vulnerable to heat waves due to the urban heat island (UHI) effect and social and economic inequities. Under this effect, a lack of greenery and a greater area of heat-absorbing, impermeable surfaces cause cities to have higher temperatures than surrounding rural areas, which can have severe health consequences. Given the sheer number of people exposed to extreme heat in cities, our central research question is: how well are cities preparing for heat? What patterns emerge in municipal plans that center around heat and climate change? How do these plans follow or deviate from best practices in urban planning when focusing on heat preparedness?

To do this, we evaluate and compare thirteen climate-related plans of six American cities that have only recently begun dealing with extreme heat due to climate change coupled with the UHI effect: Baltimore, Boston, Chicago, Louisville, Minneapolis, and New York City. We use criteria that we have identified to gauge how effective these plans should be in mitigating the local UHI effect and improving health outcomes. The criteria is derived from planning literature on what makes a good plan, such as a high-quality fact base and steps to monitor and evaluate progress, and the level of detail in policy goals and implementation, such as funding, timeline, and delegation, coupled with the presence and strength of heat-mitigating or response policies such as vegetative cover or cooling centers. A plan that scores highly in these criteria can be expected to both prioritize heat mitigation and improved health outcomes and be more likely successful in achieving these goals, which we also examine as part of a larger study.

We find that even among ambitious cities known for being proactive in planning for climate change, there is a great variety in quality in their plans and policies. New York City emerges as the leader with excellent, high-scoring plans. Vegetative cover, traffic reduction, and improving building efficiency are the most frequently included and high-scoring policies found across plans, while other measures such as utilizing the third dimension of cities (using building exterior walls as reflective or vegetated surfaces) are largely omitted. Monitoring and evaluation are rarely a rigorous part of plans. Mentions of equity and prioritizing the most vulnerable residents appear in almost all plans, but substantial demonstrations of a commitment to truly realize these goals are more rare. Heat management measures (those designed to deal with the health impacts of extreme heat in heat emergencies but do not physically

cool a city) barely appear but are improving with time. Given the differences in plan quality, there is substantial room for improvement and learning from other communities to improve the urban environment and health outcomes.

Citations

- Berke, P., & Godschalk, D. (2009). Searching for the good plan: A meta-analysis of plan quality studies. *Journal of Planning Literature*, 23(3), 227-240.
- Deetjen, T. A., Conger, J. P., Leibowicz, B. D., & Webber, M. E. (2018). Review of climate action plans in 29 major US cities: Comparing current policies to research recommendations. *Sustainable cities and society*, 41, 711-727.
- Gabbe, C. J., Pierce, G., Petermann, E., & Marecek, A. (2021). Why and how do cities plan for extreme heat? *Journal of Planning Education and Research*, 1-15.

Key Words: extreme heat, urban heat island, climate planning, heat mitigation, plan quality evaluation

‘EQUITY IN ACTION’ OR EQUITY INACTION? NEW ORLEANS AND THE RISING TIDE OF URBAN FLOOD RISK

Abstract ID: 1742

Individual Paper Submission

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In the USA, flooding is a major socio-ecological planning issue because it causes more damage than any other natural hazard. Exacerbated by the climate crisis, experts identify urban flooding as the number one future flood risk to the nation (ASFPM Foundation, 2020). In New Orleans, chronic urban flooding caused by heavy rainfall leads to significant, repetitive damage and loss. However, the lie of the land in this below-sea-level city means some people and places flood more frequently than others. Established in 1968, the trillion-dollar National Flood Insurance Program (NFIP) is a federal land use policy that guides how and where development takes place in the USA. The program ranks among governments’ most powerful policy tools to minimize the impact of flooding and mitigate and adapt cities to the climate crisis.

In the aftermath of flooding disasters, however, environmental justice scholars highlight the inequitable impact of FEMA’s standardized recovery programs. For example, post Hurricane Katrina, Robert Bullard and Beverly Wright (2012: 59) observed that FEMA’s programs favored White communities and discriminated against African Americans. Quantifying the uneven distribution of relief, Junia Howell and James Elliott (2019: 457) find that as hazard damages increase, so too does wealth inequality between Black and White residents. This makes the redrawing of flood risk in the NFIP contentious and a matter of consequence for equity, the environment, and the economy.

In this paper, I take up Miyuki Hino and Earthea Nance’s (2021: 29) call to scrutinize the disproportionate impacts of flooding and planning mechanisms that perpetuate inequity. I argue the NFIP not only disregards urban flood risk but also the concept of justice. Drawing on ethnographic field research in New Orleans and interviews with planners, hazard mitigation experts, and community leaders, I show how low-income residents and people of color, who represent the majority of New Orleans’ population, live in high flood risk areas and are disproportionately affected by urban flooding. To address this glaring urban injustice, I think with Fayola Jacobs’ (2019) Black feminist and radical planning approaches to examine FEMA’s new insurance rating methodology, “Risk Rating 2.0: Equity in Action.” Because the NFIP insures over 5 million homes in the USA, this seismic shift in how the price of flood insurance is calculated will affect the sustainability of the built environment nationally. However, Risk Rating 2.0 targets economic fairness only. The climate crisis and environmental equity, among other intersections of race, class, and gender, are not factored into the new pricing methodology’s algorithm. I also argue that Risk Rating 2.0 perpetuates environmental inequity and racial injustice. Consequently, as Risk Rating 2.0 phases in, I demonstrate how under this new approach flood insurance may become more expensive and unattainable for the vulnerable communities that need it the most. To address this injustice, I suggest how the NFIP can be reformed to prioritize more just futures for every-one/thing as the climate crisis intensifies.

Citations

- Association of State Floodplain Managers Foundation. (2020). *Urban Flooding: Moving Towards Resilience*. ASFPM Foundation.
- Bullard, R., and Wright, B. (2009). *Race, Place, and Environmental Justice After Hurricane Katrina: Struggles to Reclaim, Rebuild, and Revitalize New Orleans and the Gulf Coast*. Westview Press.
- Howell, J., & Elliott, J. R. (2019). Damages Done: The Longitudinal Impacts of Natural Hazards on Wealth Inequality in the United States. *Social Problems*, 66(3), 448–467.

- Hino, M., & Nance, E. (2021). Five ways to ensure flood-risk research helps the most vulnerable. *Nature*, 595(7865), 27–29.
- Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, 18(1), 24–39.

Key Words: Urban Flooding, Environmental Justice, Risk, Environmental Planning, Technology and Society

GENES AND GEOGRAPHY: DISPARITIES IN CANCER INCIDENCE AND OUTCOMES IN THE BLACK CANADIAN COMMUNITY OF SHELBURNE NOVA SCOTIA – A PRELIMINARY HISTORICAL GEOGRAPHY

Abstract ID: 1761

Individual Paper Submission

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Little is known about Canadian cancer disparities despite numerous international studies reporting disparities in cancer incidence and outcomes for people of African ancestry. These disparities reflect the interplay of social determinants of health, the environment and genetics. As the lack of Canadian cancer disparity data may be shortening the lifespan of marginalized communities, we are studying a historic Black Nova Scotian community (Shelburne) who have an inordinately high incidence and family history of various cancers. This research requires a high-risk framework incorporating natural and social sciences to determine if environmental, biological, genetic, socio-economic and lifestyle factors are associated with the high cancer incidence and mortality.

This study, funded by the SSHRC's New Frontiers in Research fund, follows up on the pioneering work on Canadian environmental racism by Ingrid Waldron (this study's Co-PI) through her book (2018) and subsequent documentary film (2019). The book and film featured the African Nova Scotian residents of Shelburne.

The study includes:

1. Identifying geographical hotspots of cancer incidence and deaths - investigating the link between genetics, environment, lifestyle and chronic diseases. The demographic and socioeconomic profile of Shelburne residents will be determined using questionnaires and cancer registries.
2. Creating a biorepository and determine environmental exposures in Shelburne residents using biological samples to assess heavy metal and carcinogen levels.
3. Identifying genetic changes that may explain an ancestral cancer susceptibility using whole genome sequencing of saliva samples.

While research ethics is presently under review for much of the study, the presenters are presently conducting the historical geography of the site. In January 2022 we conducted an on-site reconnaissance of the dump with Town of Shelburne staff in order to create a photographic record of anomalies such as leachate runoff, off gassing, and lack of cover final over deployed waste in cells. Further research underway includes:

- Retrieving historical information, photos and other paraphernalia from community members;
- Obtaining historical air-photos of the dump site and surrounding town;
- Field visits in the surrounding Shelburne community examining homes closest to the dump in terms of exposure potential, mapping house locations (GIS);
- Reviewing local archives;
- An historical review of local and Halifax print and online newspapers concerning the dump; and
- Internet and social media search of dump information, ethnographic thematic analysis of social media postings.

Our preliminary findings indicate that the dump operated from 1947 until 1996, when waste was diverted to an approved modern, engineered landfill in another community. The dump acted as a white metals transfer station and construction debris until it officially closed in 2016. The dump has no engineered features in terms of leachate collection and methane management and is located in a swamp, which has a high water table that can lead to the spreading of leachate offsite. No attempt has been made to monitor or remediate environmental contamination at the site. The historical review indicates the dump received waste from the national defence department (Navy), Roswell hospital, fisheries and timber industries, as well as municipal and household waste. The site contains a creek and is in

a bog, hence the potential exists for the presence of carcinogenic materials through exposure pathways to surface water and groundwater as well as landfill gas.

Considering the analysis indicates there are industrial and hazardous materials in the site over and above local household “garbage”, the lack of modern landfill engineering contamination mitigation methods, and inappropriate location of the dump by modern environmental planning standards in a bog with surface water features extending off site, it appears that the Shelburne dump is potential sources of contaminant exposure to the local community.

Citations

- Ingrid Waldron. 2018. *There’s Something in The Water: Environmental Racism in Indigenous and Black Communities*. Halifax: Fernwood Publishing.
- I. R. G. Waldron, Re-thinking waste: Mapping racial geographies of violence on the colonial landscape, . *Environmental Sociology (Special Issue: Environmental Justice & Deep Intersectionality)* 4, 36-53 (2018).
- S. Kisely, M. Terashima, D. Langille, A population-based analysis of the health experience of African Nova Scotians. *Canadian Medical Association Journals* 179, 653-657 (2008).
- C. E. DeSantis et al., Cancer statistics for African Americans, 2016: Progress and opportunities in reducing racial disparities. *CA Cancer J Clin* 66, 290-308.
- Dalhousie School of Resource and Environmental Management. (2018). "Case B: Environmental Racism: Living Next to a Landfill in Shelburne N.S. (unpublished).

Key Words: environmental, racism, waste, health, dump

RELATING LOCAL CLIMATIC ZONES AND UHI MAPPING TO PREDICT CHANGES IN LOCAL THERMAL ENVIRONMENT

Abstract ID: 1763

Individual Paper Submission

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Local climatic zone (LCZ) is a standardized framework which is used to study urban microclimate. In the LCZ mapping, an urban area is classified into different zones based on urban morphology and the built-up area , sky-view factor, pervious and impervious surfaces and vegetation cover (Wang et al., 2018; Chen et al., 2020)

The World Urban Database and Access Portal Tools (WUDAPT) method is commonly used to categorize different LCZs within a city. The LCZ maps can be used to determine the relationship between the landscapes of different urban forms and their thermal effects. Despite the increase in the number of UHI studies, few studies have focused on winter cities that are located above 50th parallel. This study intends to understand the effect of LCZ on the UHI effect in winter cities. Edmonton, a winter city with a population of million people located at the 53rd parallel, was selected as a case study.

The LCZ mapping process for the city of Edmonton included three steps: 1) the city area s divided into LCZ classes based on different built-up and landcover categories such as the density of trees, vegetation type, landuse, surface materials (Yang et al., 2020; Lehnert et al., 2021) 2) The LCZs were created based on the trained data sets from the online tool developed by Ching et al. (2018) and the LCZ classification developed by Wang et al. (2018b). 3) Using the WUDAPT model and Google Earth imagery, the LCZs were created for the city. This 3 step exercise resulted in 29 zones across the city, which were analysed systematically at the neighbourhood scale.

Preliminary results show a significant effect of LCZ on UHI. For instance, the LCZ 3 (Compact Low Rise residential), LCZ 10 (Heavy Industrial), LCZ 5 (open mid rise) and LCZ 7 (Light Weight Low Rise) showed the highest average temperature then LCZ 8 (Large Low Rise Residential) and LCZ 9 (Open Low Rise Residential). LCZs with mostly vegetation and greengreen cover showed lower temperatures than those characterized with paved surface, and water bodies. The method employed here helps in eliciting stronger relationship between built typology and average UHI within a city. This way, the method can then help municipal planners to identify areas in the city, which are most in need of UHI mitigation measures.

Citations

- Bechtel, B., Alexander, P. J., Böhner, J., Ching, J., Conrad, O., Feddema, J., Mills, G., See, L., & Stewart, I. (2015). Mapping local climate zones for a worldwide database of the form and function of cities. *ISPRS International Journal of Geo-Information*, 4(1), 199–219. <https://doi.org/10.3390/ijgi4010199>

- Chen, Y., Zheng, B., & Hu, Y. (2020). Mapping local climate zones using arcGIS-based method and exploring land surface temperature characteristics in Chenzhou, China. *Sustainability (Switzerland)*, 12(7). <https://doi.org/10.3390/su12072974>
- Ching, J., Mills, G., Bechtel, B., See, L., Feddema, J., Wang, X., Ren, C., Brorousse, O., Martilli, A., Neophytou, M., Mouzourides, P., Stewart, I., Hanna, A., Ng, E., Foley, M., Alexander, P., Aliaga, D., Niyogi, D., Shreevastava, A., ... Theeuwesits, N. (2018). WUDAPT: An urban weather, climate, and environmental modeling infrastructure for the anthropocene. *Bulletin of the American Meteorological Society*, 99(9), 1907–1924. <https://doi.org/10.1175/BAMS-D-16-0236.1>
- Lehnert, M., Savic, S., Milošević, D., Dunjic, J., & Geletic, J. (2021). Mapping local climate zones and their applications in european urban environments: A systematic literature review and future development trends. *ISPRS International Journal of Geo-Information*, 10(4). <https://doi.org/10.3390/ijgi10040260>
- Wang, C., Middel, A., Myint, S. W., Kaplan, S., Brazel, A. J., & Lukasczyk, J. (2018a). Assessing local climate zones in arid cities: The case of Phoenix, Arizona and Las Vegas, Nevada. *ISPRS Journal of Photogrammetry and Remote Sensing*, 141(April), 59–71. <https://doi.org/10.1016/j.isprsjprs.2018.04.009>

Key Words: LCZ, UHI, Winter City, Classification, Future Projection

THEY AREN'T FROM AROUND HERE AND OTHER FALSE NARRATIVES FROM THE MEANING MAKING PROCESS POST EXTREME FLOODING: A HARRIS COUNTY, TEXAS CASE STUDY

Abstract ID: 1765

Individual Paper Submission

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Flood related fatalities are the second most common death from natural disasters, and those that drive during extreme flooding account for more than half of flood related fatalities (Ashley & Ashley, 2006). As more extreme weather is predicted due to climate change, the number of deaths has steadily increased from flood events since the 1990s (Maples & Tiefenbacher, 2009). Texas leads the United States in flood related deaths, where almost 75% are related to driving in the extreme flooding event (Sharif et al, 2012).

This case study targeted catastrophic storms from 2000 to 2019 Harris County, Texas. Houston, county seat to Harris County, is the largest city in Texas and fourth largest city in the United States. Harris County is both prone to both sudden and slow onset flooding. Through a convenience sample, almost one hundred people were interviewed that had driven during a catastrophic flooding event during the last twenty years. Hours of live news reporting were also viewed and coded through NVivo to explore on air interviews of driving during the flood events. This research asks the question: what collective thoughts can be observed by people who experienced driving during extreme flooding events in Harris County, Texas?

Major themes were discovered about the meaning making process that occurs following the trauma experienced from extreme flood events that resulted in mass casualties. Themes from the interviews emerged that contradicted actual findings from those that died during these events. People generalized that those that died were not long-term residents of Harris County, Texas. Interviewers reported a belief that they would not experience the same fate as others from personally driving during the rain event. Research also revealed that residents seemed too comfortable with risky driving scenarios and most believed there was a right way versus a wrong way to drive during extreme flood events. Findings from this research are useful in public education forums to educate drivers and potentially save lives.

Citations

- Ashley, S., & Ashley, W. (2006, Mar). Flood Fatalities in the United States. *Journal of Applied Meteorology and Climatology*, 47(3), 805-818.
- Maples, L., & Tiefenbacher, J. (2009). Landscape, development, technology and drivers: The geography of drownings associated with automobiles in Texas Floods, 1950-2004. *Applied Geography*, 29, 224-234.
- Sharif et al. (2012). Person-place-time analysis of vehicle fatalities caused by flash floods. *Geomatics, Natural Hazards and Risk*, 3(4), 311–323.

Key Words: Extreme Flooding, Meaning Making, Transportation, Flood Fatalities

UNDERSTANDING THE PUBLIC'S QUESTIONS AND CONCERNS RELATED TO POTABLE WATER REUSE: AN ANALYSIS OF SURVEY WRITE-IN RESPONSES FROM RESIDENTS OF ALBUQUERQUE, NEW MEXICO

Abstract ID: 1769

Individual Paper Submission

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Urban centers around the world, including those in the American Southwest, are grappling with the challenges associated with population increases, drought, and projected water shortages. In New Mexico, water management and climate change experts warn of a new reality characterized by higher temperatures and less precipitation. This future requires new thinking regarding water management, use, and governance. Potable water reuse (i.e., purification of domestic wastewater for reuse as drinking water) is emerging as an option for supplementing existing water supplies without requiring substantial changes to lifestyles or infrastructure. Although researchers and practitioners have demonstrated that existing technologies can be used to safely implement potable reuse, public opposition is currently seen as the main barrier to new projects. Thus, much research has been conducted on public perceptions of potable water reuse to better understand how to communicate and engage with the public on the topic.

Most of the data about public perceptions were collected using surveys with multiple choice questions, which constrained survey respondents to describing their concerns by choosing from a few response options. This approach does not achieve the objective of gathering meaningful data about the public's actual questions and concerns to allow design of effective programming for public education, outreach, and communication. Thus, a knowledge gap exists regarding the public's true questions and concerns about potable water reuse.

This research fills the knowledge gap by providing the first detailed analysis of public questions and concerns about water resources and potable water reuse based on hundreds of write-in responses to a large (n=4,000) survey conducted in Albuquerque, New Mexico. Examining survey respondents' questions and concerns – written in their own words – in addition to the data from multiple choice questions has the potential to improve design of educational and engagement materials to make them more meaningful. The survey write-in response data were analyzed using an iterative process of coding and theme development, similar to that used for analysis of interview data. Findings demonstrate that including ample opportunities for survey respondents to voice their questions and concerns in their own words, especially concerning a complex topic such as potable water reuse, adds richness and nuance that cannot be obtained when relying on multiple-choice questions alone; this additional dimension to the data is crucial for creating public outreach and educational programming that more reasonably meets members of the community where they are. The results are unique in the literature and are important to communities in the Southwestern US and elsewhere that aim to design meaningful and effective public education, outreach, and communication programming on the topic of potable water reuse.

Citations

- Distler, Lauren N, and Caroline E Scruggs. 2020. "Arid Inland Community Survey on Water Knowledge, Trust, and Potable Reuse. I: Description of Findings." *Journal of Water Resources Planning and Management* 146 (7): 4020045.
- United States Environmental Protection Agency (USEPA). 2020. National Water Reuse Action Plan (WRAP). Washington DC.
- United States Environmental Protection Agency (USEPA). 2017. Potable Reuse Compendium. EPA/810/R-17/002, EPA, Washington, D.C. <https://www.epa.gov/ground-water-and-drinking-water/2017-potable-reuse-compendium>.
- Charmaz, K. 1995. Grounded Theory. In J.A. Smith, R. Harré, & L.V. Langenhove (Eds.), *Rethinking Methods in Psychology* (pp 27-48). London: Sage Publications.
- Creswell, J. W. 1998. *Qualitative Inquiry and Research Design: Choosing Among Five Traditions* (pp 55-58). Thousand Oaks, CA: Sage Publications.

Key Words: potable water reuse, water recycling, community survey, public perceptions, trust

SOCIAL CAPITAL INFLUENCE IN PUERTO RICO AFTER 2017 HURRICANE MARIA

Abstract ID: 1780

Individual Paper Submission

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Climate change impacts are revealing the need for professionals with a holistic understanding of disaster resilience. Planners are occupied by analyzing community systems and providing assistance to find solutions to their development limitations. However, a key intangible and often ignored component in community systems is related to the health of the relationships among citizens. The literature on disaster resilience has shown that social capital has an influence over post-disaster recovery (Aldrich, 2011; 2012; Ganapati, 2012; Joshi & Aoki, 2013; Nakagawa & Shaw, 2004; Masud-All-Kamal & Hassan, 2018). However, many studies focus on post-disaster experiences but pay less attention to the history of community participation. In response, this study seeks to understand to what extent

and how does social capital and the history of community participation interact and influence community responses after a major disaster event.

The current study defines social capital as the social networks, the relationships among community members and civic institutions inside and outside geographical boundaries. Social capital can be perceived as the agglomeration of those social networks that collectively form community social capital. The study understands that prior community participation may have an impact on the structural formation of the community's social capital that gets visibility in post disaster recovery through different manifestations, e.g., accessing information and economic capital. In this study the manifestations of social capital are classified into the well-known categories of bonding, bridging and linking social capital.

The study consists of a qualitative case study in the Municipality of Adjuntas, Puerto Rico, which was one of the most devastated areas on the island from hurricanes Irma and Category 5-hurricane Maria in 2017 and one of the first communities in Puerto Rico developing multiple solar energy community initiatives. Semi-structured interviews were performed targeting different community sectors within the case study area. A snowball sampling technique was employed, and field observations were conducted to identify informants and to explore the different community perspectives.

Data collection was facilitated by an interview guide with open-ended questions that addressed aspects of community participation and social capital in recovery. The data was analyzed independently using NVivo and triangulated with secondary sources. Pattern matching was performed to identify patterns that described elements of bonding, bridging and linking social capital and their connections to community recovery initiatives in the study area.

Preliminary findings resonate with the literature in terms of the contribution of social networks to post-disaster recovery processes (e.g., Aldrich 2012). This study suggests that geographically isolated rural communities in Puerto Rico post-Hurricane Maria relied more on social capital to access resources for recovery than urban communities in Puerto Rico. A key finding is the predominant role of NGOs in accessing resources for their communities through their existing social capital and by capitalizing on the expanded social capital post-disaster. Consequently, not only prior community participation structured by NGOs facilitates community response post-disaster, but also the community benefits generously from NGOs' linking social capital to be effective in long-term recovery.

These findings confirm the need to link the health of citizens relationships to disaster resilience strategies. Planners have an opportunity to present to community actors the value of integrating collaborative approaches pre-disaster to build relationships and social networks among citizens and NGOs. The second implication for planning scholars is the need to study the relationship between NGOs' social capital and economic capital for recovery. Another implication pertaining to NGO practitioners is about the need to accept the inevitable demand of assisting their communities within disaster contexts and given by this reality they could integrate to their strategic plans, programs to build community social capital, but also expanding on NGOs' linking social capital.

Citations

- Aldrich, D. (2012). *Building Resilience: Social Capital in Post-Disaster Recovery*. Chicago: University of Chicago Press.
- Aldrich, D. P., & Meyer, M. A. (2015). Social Capital and Community Resilience. *American Behavioral Scientist*, 59 (2), 254–269.
- Talbot, J., Poleacovschi, C., Hamideh, S., & Santos-Rivera, C. (2020). Informality in Postdisaster Reconstruction: The Role of Social Capital in Reconstruction Management in Post–Hurricane Maria Puerto Rico. *Journal of Management in Engineering*, Vol. 36, Issue 6.
- Nakagawa, Y., & Shaw, R. (2004). Social Capital: A Missing Link to Disaster Recovery . *International Journal of Mass Emergencies and Disasters*, Vol. 22, No. 1, pp. 5–34.
- Woolcock, M. 2. (2001). The place of social capital in understanding social and economic outcomes. *Canadian Journal of Policy Research*, Vol. 2, 1-35.

Key Words: Social Capital, Disaster Recovery, Community Participation, Community Resilience, Nonprofits

THE ROLE OF MULTIMEDIA TOOLS IN ENVIRONMENTAL POLICY FRAMING

Abstract ID: 1782

Individual Paper Submission

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Environmental justice is the notion that all people have the same degree of protection from environmental harm and access to participation in environmental decision-making and amenities (US EPA, 2017). However, governments tend to rely on scientific terminology when addressing environmental injustices, often ignoring the embodied experience of

local residents. Even the most well-intentioned institutionalized forms of public participation often fail to achieve authentic engagement. One commonly proposed solution involves the use of community-based video and social media as tools that help bridge existing knowledge gaps between community members and the technocratic power structures. But research on video and social media impacts related to environmental justice is sparse, leaving policymakers without a clear sense for how communities should be engaged to co-produce environmental knowledge and solutions.

Environmental justice scholars and activists have criticized planning and policy approaches that fail to genuinely legitimize marginalized voices within decision-making processes. Community-based video and testimony can either counter or inform government narratives that frame environments and injustices. Though not a panacea, video productions created by community based organizations (CBOs) may function as extended forms of public participation, ultimately “lifting up the experiential knowledge of community members alongside other professional ways of capturing data” (Corburn, 2017). Since marginalized communities often lack access to experts of their own, I focus on CBOs working to amplify their voices.

Southeast Los Angeles (SELA) is the area of study, with case studies in the cities of Bell Gardens, Commerce, South Gate and Paramount. Despite being in a state held as a leader on environmental issues, Los Angeles features some of the country’s worst air pollution (psr-la.org). From a policy perspective, scholars have raised the need to direct more attention to industrial zones and pollution clusters, rather than just the siting process and individual facilities (Pulido, 2000). SELA has some of county’s most densely populated and under-resourced communities, and is also one of its largest industrial zones. For decades, SELA has been to a “dumping ground” and “sacrifice zone” for heavy industry (Carter, 2016).

Academic research has struggled to measure the “impact” of video and social media. This project asks:

1. Do community advocates and leaders use video and social media strategically to get their perspectives heard, if so, how, and does it have an impact?
2. How do official depictions of local environmental issues in SELA reflect the relationship, if any, between technocratic knowledge and community narratives?

A close reading of CBO-produced content and government documents is conducted to better understand how environmental issues and affected communities are understood. To triangulate the narratives collected by such different data, I use focus groups with local residents and in-depth interviews with CBO staff and leadership, local policymakers, and community residents. I interrogate how participants frame their environmental concerns, their community, the planning process itself, and their relationship to community-based video and social media content.

This research is an uncharted view of CBOs working in SELA to address local environmental justice issues, offering insights on how CBOs can improve their visual communication strategies. Ultimately I study the possible effects of CBO video and social media on local knowledge creation and decision making by: (1) creating an inventory of videos and social media posts by CBOs, including a typology of CBOs by use of video and social media; (2) analyzing public media accounts and interviewing local policymakers to assess the effects of these videos and social media posts as part of a qualitative analysis exploring how policymakers incorporate or not video and social media activism in their decision making.

Citations

- Corburn, Jason. “Concepts for Studying Urban Environmental Justice.” *Curr Envir Health Rpt*, no. 4 (2017): 61–67. <https://doi.org/10.1007/s40572-017-0123-6>
- Pulido, Laura. “Rethining Environmental Racism: White Privilege and Urban Development in Southern California.” *Annals of the Association of American Geographers* 90, no. 1 (2000): 12–40.
- Thorpe, Amelia. “Rethinking Participation, Rethinking Planning.” *Planning Theory & Practice* 18, no. 4 (October 2, 2017): 566–82. <https://doi.org/10.1080/14649357.2017.1371788>.
- Sandercock, Leonie. “Changing the Lens: Film as Action Research and Therapeutic Planning Practice.” *Journal of Planning Education and Research* 34, no. 1 (2014): 19–29. <https://doi.org/10.1177/0739456X13516499>.
- Carter, Eric D. “Environmental Justice 2.0: New Latino Environmentalism in Los Angeles.” *Local Environment* 21, no. 1 (January 2, 2016): 3–23. <https://doi.org/10.1080/13549839.2014.912622>.

Key Words: Environmental Justice, Framing, Storytelling, Participatory Planning, Community-Based Media

GREEN URBANISM AND SUSTAINABILITY PLANNING: LEARNING FROM MUNICIPAL PRACTICES

Abstract ID: 1784

Individual Paper Submission

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Since the 1990s, communities across the United States have been developing sustainability plans and identifying other ways to develop green communities. Green urbanism aims to create communities that are environmentally sustainable, with strategies that target reduced carbon emissions and ecological footprints as well as the integration of nature within urban areas (Beatley, 2000; Lehmann, 2011).

The devastating impacts of the changing climate have exacerbated the need to plan our communities using green urbanism principles. While there have been significant study of who plans for sustainability and the quality of these plans in general (Conroy and Berke, 2000; Svava et al., 2013), we do not know the extent to which a holistic set of green urbanism principles are integrated in these plans. This paper will help address this gap in the literature.

This paper investigates thirty municipal plans for the extent of integration of eleven green urbanism principles identified by Lehmann (2011). The municipal plans included in this assessment were selected based on the findings from a recent nationwide survey of local governments, which found that 586 local governments, representing approximately one-third of the surveyed governments, have completed a sustainability plan (ICMA, 2016). The sample selected for this paper is a random sample of municipalities with over 10,000 population that had indicated that they completed a sustainability plan in ICMA's survey.

Preliminary findings suggest that communities have prioritized certain green urbanism principles over others and the strength and the extent of integration of green urbanism principles differ significantly among communities. I expect to find these differences to be based organizational capacity and environmental stressors that these communities have (e.g., being prone to sea level rise).

Citations

- Beatley, T. 2000. Green Urbanism. Washington, D.C.: Island Press.
- Conroy, M. M., and P. R. Berke. 2004. "What Makes a Good Sustainable Development Plan? An Analysis of Factors that Influence Principles of Sustainable Development." *Environment and Planning A* 36: 1381-1896.
- ICMA International City/County Management Association. 2016. Local Government Sustainability Practices, 2015. Accessed at: https://icma.org/sites/default/files/308135_2015%20Sustainability%20Survey%20Report%20Final.pdf
- Lehmann, S. 2011. What is Green Urbanism? Holistic Principles to Transform Cities for Sustainability. In *Climate Change: Research and Technology for Adaptation and Mitigation* edited by J. A. Blanco and H. Kheradmand. Rijeka, Croatia: InTech.
- Svava, J., T. Watt, and H. S. Jang. 2013. "How Are U.S. Cities Doing Sustainability? Who Is Getting on the Sustainability Train, and Why?" *Cityscape: A Journal of Policy Development and Research* 15 (1): 9-44.

Key Words: green urbanism, sustainability planning, municipal plan quality, climate change

TEXTUAL CONTENT ANALYSIS OF CLIMATE ACTION PLANS FOR US CITIES

Abstract ID: 1785

Individual Paper Submission

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Climate change leads to havoc and extreme weather events such as storms, floods, heat waves, drought, and wildfire by influencing the variances in the intensity, duration, frequency and spatial extent of these events worldwide (IPCC 2012). As major consequences of climate change, extreme events and disasters are contingent on vulnerability components such as geographic, physical and social conditions. In attempts to adapt a transforming environment and protect society from disastrous results of climate change effects, planning is one of the fundamental strategies for sustainable development, policy making and implications. US cities are addressing climate challenges at the local and regional scales by implementing Climate Action Plans (CAPs), a planning framework that gained a momentum in the mid-1990s (Wheeler 2008). Several states are also implementing CAPs with mitigation and adaptation strategies to inform decision makers (Tang et al. 2013).

Several researchers have assessed Climate Action Plans across the US in recent years to determine their effectiveness and focus by applying a variety of tools. Millard Ball (2012) examined 478 Californian cities in 2008 to determine their environmental performance on a range of measures. Bassett and Shandas (2010) conducted interviews and examined 20 municipal CAPs of varied sizes and location and found that while some plans are used as motivational

tools, others are comprehensive plans with specific targets and objectives, and informed strategies. Boswell et al. (2010) applied content analysis to examine 30 CAPs in the US cities on 70 parameters of embodied emissions and operational energy use. They found that while GHG estimations were generally correct, their mitigation goals fell short of international targets, and plans did not connect mitigation actions to reduction targets. Deetjen et al. (2018) examined CAPs of 29 US cities and identified building quality, parking restrictions, and dense development as key strategies. They found that parking policy and compact development strategies are generally left from climate plans even though they are required to support transit, denser building form, improve walkability, and key strategies for reducing emissions. Stone et al. (2012) evaluated continuous climatic data for 50 most populous cities in the US and find that municipal and state CAPs do not provide adequate protection against heat.

In this research we aim to assess the current state of climate planning and carry out textual content analysis of Climate Action Plans (CAPs) for 216 cities in the United States. Based on the population size, these cities are organized into small, medium, and large cities/metro regions. CAPs have also been stratified by time and climate regions. The plans are evaluated for their emphasis on short term and long-term goals, disaster preparedness and resiliency goals, and well as broader adaptation measures. Some of the research questions investigated are: What emphasis of climate plans is on greenhouse gas mitigation, urban heat, and flooding threats? How do plans differ spatially (regions of US), temporally (older versus newer plans), and across city size? How do climate plans address health, economic, and environmental benefits?

These research questions are explored using word histogram/word cloud. Preliminary assessments show that there is a greater emphasis on reducing emissions, which is unsurprising as greenhouse gases (accounting and reduction) are considered the cornerstone of climate planning. Many small medium cities do not engage sufficiently in climate planning, and there are missed opportunities for cities to be resilient towards heat and flood risks. This analysis explores the breadth and spread of climate action planning in the US cities and provides key takeaways for planners and policymakers.

Citations

- Adam Millard-Ball, Do city climate plans reduce emissions? *Journal of Urban Economics*, Volume 71, Issue 3, 2012, pages 289-311.
- Brian Stone, Jason Vargo, Dana Habeeb. Managing climate change in cities: Will climate action plans work? *Landscape and Urban Planning*, Volume 107, Issue 3, 2012, pages 263-271.
- Ellen Bassett & Vivek Shandas, Innovation and Climate Action Planning, *Journal of the American Planning Association*, Volume 76 Issue 4, 2010, pages 435-450.
- Michael R. Boswell, Adrienne I. Greve & Tammy L. Seale. An Assessment of the Link Between Greenhouse Gas Emissions Inventories and Climate Action Plans, *Journal of the American Planning Association*, Volume 76 Issue 4, 2010, pages 451-462.
- Thomas A. Deetjen, Julia P. Conger, Benjamin D. Leibowicz, Michael E. Webber. Review of climate action plans in 29 major U.S. cities: Comparing current policies to research recommendations, *Sustainable Cities and Society*, Volume 41, 2018, pages 711-727.

Key Words: Climate Action Plans, Content Analysis

FLOODING AND THE PLIGHT OF FARMING IN THE MISSISSIPPI DELTA: STORIES OF BLACK FARMERS

Abstract ID: 1795

Individual Paper Submission

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Changnon (1998) describes the titanic struggle between the people of the Mississippi River basin and flooding for the past 150 years. In recent years, however, floods have become more frequent and unpredictable due to climate change, resulting in billions of dollars in losses for farmers, causing long-term damage to farmland, reducing farming longevity and profitability.

The plight is a double edged sword for small, rural Black farmers according to McGinnis (2019). Floods often delay planting efforts and farmers are forced to wait until the soil is dry enough to plant. However, deferred planting can often result in the crops producing less yield. In the spring of 2019 much of the Mississippi Delta was flooded. A perfect storm of conditions led to severe flooding across the region. At its peak, water spread across 550,000 acres, inundating homes, businesses, and farmland across five counties. This particularly impacted Black farm families who have, historically, had to contend with many adversities including limited access to credit, exorbitant interest rates, restricted economic, and social mobility due to scarcity of opportunities for advancement, and unequal distributions of government subsidies. Year 2020 brought even more flooding, and coupled with the pressures of the pandemic, has

intensified the needs of these disadvantaged farmers.

The purpose of this research is to investigate and highlight the plight of flooding in the Black farming community in the Mississippi Delta utilizing content analysis of online newspaper articles and narrative storytelling. The research also seeks to understand the perceptions of the potential risk that the climate crisis has on the Mississippi Delta and its inhabitants. This significance of this research is highlighted in a New York Times article by Tabuchi and Popovich (2021) who contend that two of the Biden administration's biggest priorities - addressing racial inequality and fighting climate change - are converging in the lives of black farmers. Given the magnitude of human health and economic risks that severe flood events pose to this region, it is essential to understand farmers' perspectives to identify key gaps and priorities regarding flood risk reduction and climate adaptation in the Mississippi delta.

Citations

- Changnon, S., A. (1998) The Historical Struggle with Floods on the Mississippi River Basin, *Water International*, 23:4, 263-271, DOI: 10.1080/02508069808686781
- McGinnis, M. (2019, April 25). Mississippi Floods Affect Black Farmers. *The LA Sentinel*. <https://lasentinel.net/mississippi-floods-affect-black-farmers.html>
- Tabuchi, H. and Popovich, N. (2021, January 2021). Cultivating Change on Both Climate and Inequity. *The New York Times*. <https://www.nytimes.com/2021/01/31/climate/black-farmers-discrimination-agriculture.html?smid=url-share>

Key Words: Flooding, Farming, Mississippi Delta

NAVIGATING THE DEFINITION OF URBAN FLOODING: A CONCEPTUAL AND SYSTEMATIC REVIEW OF THE LITERATURE

Abstract ID: 1810

Individual Paper Submission

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Flood risk cases continue to occur worldwide, particularly in urban areas. However, while flooding impacts appear to be known, the definition of what constitutes urban flooding and how it separates from more traditional flooding, is still nebulous in the literature. The fact is there are many different definitions of urban flooding, especially between natural (e.g. ecologists), physical (e.g. engineers), and social scientists (e.g. urban planners). In order to draw a definition of urban flooding that incorporates current views on flood risk and the role of the built environment, the main objective of this paper is to conduct a systematic literature review on the relevant studies on flooding, however not restricted to a specific field of science. The literature review was developed in two main phases covering the (i) articles' screening, (ii) articles' selection. Phase 1 refers to screening articles in Web of Science database with twelve search pairings, structured to contain one element of "flooding" with a "flooding term". Flooding terms included "interior", "inland", "pluvial", and "urban flooding", which yielded 574 articles. In phase 2, with the aim of providing an overview of how urban flooding was defined in the literature, these articles were analyzed by answering (i) if flooding was discussed in the context of human settlements, (ii) if there is a definition of urban flooding, (iii) if rainfall events are examined in the article, (iv) if stormwater infrastructure is considered, and (v) if the article provides an original definition of flood risk. After screening articles, 40 articles were selected for this literature review. Findings shows that definitions for urban flooding rarely are explicit. In fact, almost 60% of the papers base their discussion on the causes of urban flooding without providing an explicit definition (n = 23). Instead of defining Urban Flooding itself, authors present urban flooding as a series of possible flood risks that have their own – though possibly overlapping – engineering solutions. Other definitions look at the causes or amplifying factors of urban flood events; in some cases, vaguely defined as "urbanization". In addition, results indicated that only a few authors define what is "urban" compared to what is not "urban". More complex definitions explicitly describe impervious surfaces and stormwater infrastructure as the human elements of flooding. This article concludes by providing an inclusive and comprehensive definition of urban flooding as a function or dysfunction of three general components: the source of the water, the amount of impervious surface in the area in question by way of urban transformations, and what human or natural (possibly human augmented) drainage systems exist to distribute the water in the built environment.

Citations

- Karrasch, L., Restemeyer, B., & Klenke, T., (2021). The “Flood Resilience Rose”: A management tool to promote transformation towards flood resilience. *Journal of Flood Risk Management*, 14 (3), doi: 10.1111/jfr3.12726
- Sorensen, J., Persson, A., Sternudd, C., Aspegren, H., Nilsson, J., Nordstrom, J., Jonsson, K., Mottaghi, M., Becker, P., Pilesjo, P., Larsson, R., Berndtsson, R., & Mobini, S. (2016). Re-Thinking Urban Flood Management—Time for a Regime Shift. *Water*, 8(8), 332. <https://doi.org/10.3390/w8080332>
- Santos, P. P., Pereira, S., Zêzere, J. L., Tavares, A. O., Reis, E., Garcia, R. A. C. & Oliveira, S. C. (2020) A comprehensive approach to understanding flood risk drivers at the municipal level. *Journal of Environmental Management*, 260, 110127, doi: 10.1016/j.jenvman.2020.110127

Key Words: urban flooding, stormwater infrastructure, urbanization, imperviousness, built environment

PATHWAYS TO ADAPTATION: THE RATIONALITY OF “THINK GLOBAL, ACT LOCAL”: A CASE STUDY OF SZÉKELY-HUNGARIAN CULTURAL LANDSCAPES

Abstract ID: 1822

Individual Paper Submission

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This qualitative case study used an interpretive-social constructivist approach to study Székely-Hungarian villages and their cultural landscapes in Romania. The convergent interview method (Dick 2017) was used to understand landowner’s decision-making processes and their “think global, act local” responses as they influence community, village, and landscape. Local level adaptation processes to global challenges such as climate change and natural resource depletion is unfolding in “real time and space” within this ethnoregional context. A local level articulated rationality was captured through the adaptation strategies of six emerging key types of personalities of the “intellectual peasants,” “heirloomers,” “locally rooted farmers,” “necessity farmers,” “hoarders,” and “floaters.” Each of these personalities is attributed with key human developmental characteristics that are perceived to influence the Székely ethnic village and cultural landscapes with ramifications for local and global sustainability goals. A local adaptation mechanism to rural, social, environmental, institutional, and demographic changes is discussed. Further, we elaborate our findings through the lens of personal (individual) resilience. Personal resilience, after Liebenberg and her colleagues (2017), Masten (2016), and Taormina (2015) defined as the pathway of positive adaptation where individuals have the capacity to:

- (1) to function and cope with chronic stressful situations,
- (2) transform sources from the environment (social, economic, personal etc.) into resources, and
- (3) make sense of events during change times.

The findings of this study complement the predominantly spatial and ecological body of work that has been carried out at larger scales to date. Furthermore, the study highlights the importance of focusing on local-scale dynamics and individual resilience for future cultural landscape adaptation and community resilience studies.

Citations

- Dick, Bob. 2017. "Convergent Interviewing Essentials: An Introduction to the Key Features of a Combined Interviewing and Data Analysis Technique." Available online. Retrieved from <http://www.aral.com.au/resources/coin.pdf>.
- Liebenberg, Linda, Natacha Joubert, and Marie-Lynne Foucault. 2017. Understanding Core Resilience Elements and Indicators a Comprehensive Review of The Literature. (Public Health Agency of Canada, <http://lindaliebenberg.com/wp-content/uploads/2017/11/PHAC-Resilience-Report-Final-Version-November-2017.pdf>).
- Masten, Ann S. 2016. "Resilience in developing systems: the promise of integrated approaches." *European Journal of Developmental Psychology* 13 (3): 297-312. doi.org/10.1080/17405629.2016.1147344.
- Taormina, Robert J. 2015. "Adult Personal Resilience: A New Theory, New Measure, and Practical Implications." *Psychological Thought* 8 (1): 35-46. doi:10.5964/psyct.v8i1.126.

Key Words: local adaptation, cultural landscape, ethnic minority, local sustainability, Eastern Europe

THE ROLE OF WASTE SEGREGATION IN SUSTAINABLE URBAN AGRICULTURE AND CLIMATE RESILIENCE IN CITIES OF THE GLOBAL SOUTH

Abstract ID: 1824

Individual Paper Submission

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Solid waste management (SWM) is a universal matter that affects every individual, no matter their social or economic demographic status. Cities of the Global South like Lagos, Nigeria are disproportionately affected, where weak infrastructure, high population densities, and lack of safe solid waste collection, removal and disposal systems correlate with harmful environmental pollution and inadequate public health measures. Urban planners need to implement well-constructed and efficient SWM systems, which aid in reducing the environmental, economic, social and health burdens associated with the overproduction of waste and its impact on a city's resiliency to climate change. An estimated 2.6 billion tonnes of carbon dioxide will be emitted by 2050 from dumped waste sources and open burning sites globally. In particular, food and organic waste causes 8 - 10% of methane emissions responsible for current global warming levels. Urban agriculture has been considered an effective solution to bolster food security in these communities by harnessing organic waste for compost production, allowing for improved access to more nutritious foods for the urban poor, who are some of the most vulnerable populations to climate change impacts.

By asking the research question: What is the political and socioeconomic feasibility of implementing a household organic waste segregation initiative in support of sustainable urban farming in Lagos, Nigeria? this study will focus on the political and social implications of planning an urban farming initiative as a green infrastructure strategy that harnesses food and organic waste from households as a way to reduce overall solid waste production and improve food security in municipal districts of Lagos. By interviewing local policymakers, urban farmers and primary homeowners, we will study their willingness with integrating waste segregation programs at the household consumer level. Looking at the interplays between waste overproduction and its impact on food security and climate change, a further assessment will be conducted to study how this system can contribute to improving overall climate resiliency in cities like Lagos. Anticipated outcomes will include the varying viewpoints of these targeted populations in determining whether they deem waste segregation practices to be beneficial in improving their overall access to locally produced foods, whilst diverting the amount of waste sent to local dump sites.

Citations

- Cobbinah, P. (2017). Managing cities and resolving conflicts: Local people's attitudes towards urban planning in Kumasi, Ghana. *Land Use Policy*. (68) pp.222 – 231.
- Kubanza, N., Simatele, M. (2019). Sustainable solid waste management in developing countries: a study of institutional strengthening for solid waste management in Johannesburg, South Africa. *Journal of Environmental Planning and Management*. (63) pp.175 – 188.
- Mesjasz-Lech, A. (2014). Municipal waste management in context of sustainable urban development. *Procedia – Social and Behavioral Sciences*. (151) pp.244 – 256.
- Rezagama, A., Damayanti, V. (2018). Sustainable Development Strategy of Domestic Waste Infrastructure in the City of Surakarta. *International Conference on Energy, Environment, Epidemiology and Information System (ICENIS) Web of Conferences*. (31) pp.1 - 6.
- Saghir, J., Santoro, J. (2018). Urbanization in Sub-Saharan Africa; Meeting Challenges by Bridging Stakeholders. Center for Strategic and International Studies. Retrieved from https://csis-prod.s3.amazonaws.com/s3fs-public/publication/180411_Saghir_UrbanizationAfrica_Web.pdf?002HMOFqh99KtXG6ObTacIKKmRvk0Owd

Key Words: Sustainability, Food Security, Waste Management, Land Use Planning

THE ASSIMILATION OF SEA-LEVEL SCIENCE BY DECISION MAKERS: PLANNING AND DESIGN IMPLICATIONS

Abstract ID: 1831

Individual Paper Submission

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Theoretical Context and Questions

Successful coastal adaptation requires robust science-policy integration and a well-designed climate services system, both built on ensuring the usability of scientific information (Findlater et al., 2021; Lemos et al., 2012). Building and designing these systems, requires an understanding of the decisions to be made and how they relate to sea-level rise

science including its large uncertainties. With a few exceptions (McEvoy et al., 2021; Tol et al., 2008), however, there has been little comparative studies of adaptation practice in coastal areas and especially the sea-level scenarios used by decision makers to inform the science-policy interface. Filling this critical gap will inform the future development sea-level rise science, associated translation efforts including treatment of uncertainty, and uptake in the decision environment.

In this context our research explores two broad questions. First, what is the current state of practice when it comes to acquiring sea-level rise projections for use in planning? Second, we explore the question, what capacities would enable planners to better integrate sea-level rise projections into decision-making frameworks and adaptation action?

Approach & Methods

We use a mixed methods approach to gain insights for planners and climate service providers globally. First, a 22-member international author team produced a questionnaire designed for coastal managers to help us understand publicly available information about places and their selection of sea level rise projections for use in planning. The questionnaire was conducted online by through Qualtrics and was available in 8 languages. Second, two parallel practitioner-led workshops – one each in the eastern and western hemispheres – engaged practitioners from 29 countries and every inhabited continent to understand the state of sea level rise adaptation with a focus on science translation and adoption, planning and implementation of adaptation, and communicating with key stakeholders.

Preliminary Findings and Contributions

Here we synthesize responses of 254 coastal decision-makers from 49 countries to a global questionnaire about the use of sea-level projections for adaptation. Practice varies greatly globally with 98% of respondents working to use sea-level rise in their decision making. However, of those who did formally adopt sea-level rise projections, 53% are planning for only a single estimate in 2100 despite the scientific consensus that a broad range of sea level rise is possible by end of century. In contrast, places with long histories of adaptation and consistent national support show signs of sounder assimilation of sea-level rise into local decisions. These more advanced locations and practices provide critical insights into the design of improved guidance materials and climate services.

Citations

- Findlater, K., Webber, S., Kandlikar, M., & Donner, S. (2021). Climate services promise better decisions but mainly focus on better data. *Nature Climate Change*, 11(9), 731–737. <https://doi.org/10.1038/s41558-021-01125-3>
- Lemos, M. C., Kirchhoff, C. J., & Ramprasad, V. (2012). Narrowing the climate information usability gap. *Nature Climate Change*, 2(11), 789–794. <https://doi.org/10.1038/nclimate1614>
- McEvoy, S., Haasnoot, M., & Biesbroek, R. (2021). How are European countries planning for sea level rise? *Ocean & Coastal Management*, 203, 105512. <https://doi.org/10.1016/j.ocecoaman.2020.105512>
- Tol, R. S. J., Klein, R. J. T., & Nicholls, R. J. (2008). Towards Successful Adaptation to Sea-Level Rise along Europe's Coasts. *Journal of Coastal Research*, 432–442. <https://doi.org/10.2112/07A-0016.1>

Key Words: climate change adaptation, coastal management, knowledge systems, resilience

MISSED OPPORTUNITIES FOR RESILIENT (DE)GROWTH: EVIDENCE FROM POST-DISASTER MIGRATION

Abstract ID: 1833

Individual Paper Submission

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Anthropogenic climate change introduces a number of stressors that undermine the viability of communities across the United States representing millions of individuals. Considering that our global community is failing to reduce greenhouse gas emissions, and the time to make the adjustments necessary to avert catastrophic impacts of climate change is running out, we must consider strategies for living with and adapting to a more hostile world. This includes retreat from high-risk areas to increase broader resilience.

Unfortunately, current government funded initiatives for managed retreat are insufficient and are primarily reactive rather than anticipatory. This heightens the importance of finding interventions to increase resilience that work within established patterns of habitation and movement. To that end, this paper analyzes the impact of disaster exposure and vulnerability on migration systems to demonstrate that we are replicating rather than reducing vulnerability.

For this analysis, I leverage a novel, individual-level database acquired from the credit agency TransUnion, which has

comprehensive coverage of eastern North Carolina. I track the address changes of over 500,000 individuals who moved in the aftermath of Hurricanes Matthew (2016) and Florence (2018). The results show that roughly 10% of individuals living within floodplains in this area moved within two-years of the aftermath of both storms, and that more than 80% of those individuals moved out of the floodplain over the same period. However, I also show that the majority of these movers were replaced by new in-migration to the floodplains, creating a condition where individuals may increase their resilience, but the overall community-level vulnerability remains constant.

These findings are discussed as a missed opportunity in the context of existing legislation and related hazard mitigation plans, which rarely include provisions to support de-growth. Implications for reducing replacement migration, and the effect that could have on the housing market are considered and presented. Finally, I suggest policy interventions that could support long-term de-growth by capitalizing on pre-existing migration systems.

Citations

- Hino, Miyuki, Christopher B Field, and Katharine J Mach. 2017. "Managed Retreat as a Response to Natural Hazard Risk." *Nature Climate Change* 7 (5): 364–70. <https://doi.org/10.1038/NCLIMATE3252>.
- Elliott, James R, Kevin Loughran, and Phylisia Lee Brown. 2021. "Divergent Residential Pathways from Flood-Prone Areas: How Neighborhood Inequalities Are Shaping Urban Climate Adaptation." *Social Problems*, 1–24. <https://doi.org/10.1093/socpro/spab059>.
- Kim, Karl, and Robert B. Olshansky. 2014. "The Theory and Practice of Building Back Better." *Journal of the American Planning Association* 80 (4): 289–92. <https://doi.org/10.1080/01944363.2014.988597>.
- Berke, Philip, Galen Newman, Jaekyung Lee, Tabitha Combs, Carl Kolosna, and David Salvesen. 2015. "Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard." *Journal of the American Planning Association* 81 (4): 287–302. <https://doi.org/10.1080/01944363.2015.1093954>.
- Butler, William H., Robert E. Deyle, and Cassidy Mutnansky. 2016. "Low-Regrets Incrementalism: Land Use Planning Adaptation to Accelerating Sea Level Rise in Florida's Coastal Communities." *Journal of Planning Education and Research* 36 (3): 319–32. <https://doi.org/10.1177/0739456X16647161>.

Key Words: Disaster Recovery, Environmental Planning, Housing, Relocation, Mitigation Planning

NATURE-BASED SOLUTIONS AS AN EFFECTIVE COLLABORATIVE PLANNING MECHANISM FOR COASTAL RESILIENCE IN THE UNITED STATES

Abstract ID: 1836

Individual Paper Submission

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When examining coastal adaptation planning efforts that have taken place across the U.S. in recent years, a solution that has been vetted and implemented by policymakers, coastal engineers, and resilience planners is the ecological framework of "Nature-Based Solutions", also referred to as "NBS" and/or "Green Infrastructure." In addressing local community challenges related to coastal flooding, storm surge, and the long-range threat of sea level rise, NBS presents an innovative approach to flood hazard mitigation that relies on natural features (i.e., living shorelines and oyster reefs) for protection instead of more traditional approaches to flood mitigation (i.e., sea walls and levees). While NBS as a policy mechanism is heavily influenced by technical and rational approaches to planning, its utility in Federal program design and implementation is often operationalized through collaborative governance/planning methods and guidance. In evaluating the evolution of NBS at the Federal level in the U.S., the goal of this paper is to demonstrate how a collaborative approach to planning has been successfully integrated across a wide array of national programs over the past several decades. To accomplish this goal, Federal NBS programs are compared against collaborative planning theory (CPT) which represents a successful model of collaborative governance. CPT maintains that a successful approach to collaborative governance relies on: multiple ways of knowing and learning; an orientation toward inclusion of a diversity of voices and perspectives; and fostering shared understanding. Through an evaluation of Federal programs administered by FEMA, NOAA, and USACE, this paper argues that these programs demonstrate how a collaborative approach to planning/governance has been successfully integrated into mainstream policy arenas. When comparing these programs against collaborative planning theory as a model for collaborative governance, what becomes evident is that each of these programs hold collaborative planning values at a high level of importance. This paper maintains that guidance published for each of these programs emphasizes: local wisdom and knowledge; a concern for multiple ways of knowing; an orientation toward inclusion of a diversity of voices and perspectives; and sharing of stories to bolster, maximize, and learn from successes. In terms of future directions to expand on this research, next steps will include to determine whether the intended orientation to collaboration in these programs actually materializes in specific case studies of funded projects. The question that remains relates to whether Federal NBS guidance actually results in more inclusive, equitable, and collaborative outcomes across different scales, geographies, and coastal environments.

Citations

- FEMA (2020). “Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities.”
- Healey, P. (1997). *Collaborative Planning: Shaping Places in Fragmented Societies*. London, England: MacMillan Press.
- Nesshöver, C., Assmuth, T., Irvine, K., & Rusch, G. (2017). “The science, policy, and practice of nature-based solutions: An interdisciplinary perspective.” *Science of The Total Environment*; 579; 1215-1227.
- NOAA (2015). “A Guide to Assessing Green Infrastructure Costs and Benefits for Flood Reduction.” NOAA’s Office for Coastal Management.
- U.S. Army Corps of Engineers (2018). “USACE Engineering with Nature 2018-2023 Strategic Plan.”

Key Words: Coastal Resilience, Nature-Based Solutions, Green Infrastructure, Collaborative Planning, Federal Programs

RACE AND COASTAL PLANNING FOR CLIMATE CHANGE AT THE END OF THE WORLD

Abstract ID: 1848

Individual Paper Submission

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Plaquemines Parish has often been referred to as 'the end of the world'. It is Louisiana’s southernmost parish (county), where the Mississippi River meets the Gulf of Mexico. The parish produces millions of pounds of shrimp, oysters, crabs, and fish each year and is a hub for the offshore oil and gas industry. The Parish is also on the front lines of climate change and land loss, with current estimates stating that the Parish may lose 55% of its land area over the next 50 years. This paper focuses on the intersection of race, marginality and coastal planning in Plaquemines Parish, LA, and the politics of resistance and citizenship.

A place with a rich historical tapestry, the Parish has suffered from the impacts of decades of environmental racism and makes for a powerful case study of coastal planning. Many of the communities that live on the exposed bayous and marshes at the frontlines of the land loss crisis in Plaquemines are descendants of enslaved laborers from Africa along with free people of color, indigenous groups dispossessed from their land, and other migrant groups (e.g., Vietnamese and Croatian) that have come together in the bayous over the past three centuries of colonial settlement.

The coupling of science and technology is directly tied to the exploitation of both land and labor on this “working coast” along the lower Mississippi River and has co-constituted deep social inequalities in the Parish – from the extraction of natural resources and the simultaneous carving of industrial canals into the waterscape over decades in the 20th century. This erosion of the waterscape for energy extraction is widely implicated in the destructive force of Hurricane Katrina in 2005. In the aftermath of Katrina, the U.S. Army Corps of Engineers began immediately repairing and upgrading the Hurricane Storm Damage Risk Reduction System (HSDRRS). While the new system was upgraded to protect the larger New Orleans Metropolitan area, much of Plaquemines Parish is outside “the wall”.

It is in the context of this social geohistory, using a qualitative case study (which includes in-depth interviews and participant observation), that this paper considers the planned Mid-Barataria Sediment Diversion (slated to begin in fall 2022) in Plaquemines parish to explore the relationship between coastal planning and marginality- past and present. At \$8 billion, one of the most expensive, ambitious, and controversial proposals in Louisiana’s 50-year, \$50 billion attempt to save the southern third of the state from disappearing into the Gulf of Mexico. However, the project is controversial among fishers who rely on shrimp, oysters, and finfish that are now harvested in the existing mix of fresh to salt water. They contend that freshening the basin with river water will destroy their livelihoods and dilute region’s rich culture and are mobilizing for resistance.

This research builds on work in environmental planning and geography that examines the coastal environment as a means through which regional, racial formations are forged, particularly for African American communities in the U.S. coastal south. This work engages with emerging literature about how coastal science often reproduces racial inequalities in climate changed environments. This work is also situated within scholarship interested in political geographies of race and critical analyses of racism and science. In the end, it is the same vulnerable and marginalized communities that have so long suffered as a result of racial and environmental injustice that stand to lose the most if the social costs of coastal planning in Louisiana are not sufficiently considered- as has historically been the case. In planning for land and population loss in Plaquemines, it is critical not to repeat the past mistakes.

Citations

- Geosciences: Losing Louisiana. (2009). *Nature*, 460(7251), 14. <https://doi.org/10.1038/460014a>
- Hardy, R. D., Milligan, R. A., & Heynen, N. (2017). Racial coastal formation: The environmental injustice of colorblind adaptation planning for sea-level rise. *Geoforum*, 87, 62–72.
- Kurtz, H. E. (2009). Acknowledging the Racial State: An Agenda for Environmental Justice Research. *Antipode*, 41(4), 684–704.
- Tubridy, F., Lennon, M., & Scott, M. (2022). Managed retreat and coastal climate change adaptation: The environmental justice implications and value of a coproduction approach. *Land Use Policy*, 114, 105960.
- Zavar, E., & Fischer, L. A. (2021). Fractured landscapes: The racialization of home buyout programs and climate adaptation. *Current Research in Environmental Sustainability*, 3, 100043.

Key Words: Environmental Justice, Race, Marginalized Communities, Land Loss, Louisiana Gulf Coast

CUMULATIVE IMPACT OF REPEATED WILDFIRE DISPLACEMENT EVENTS ON MIGRATION IN THE WESTERN UNITED STATES

Abstract ID: 1857

Individual Paper Submission

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Climate migration has been identified as an urgent issue that will likely add greater complexity to existing climate change planning efforts (Black, 2011; Ahsan, 2011). While findings indicate that climate change is impacting migration on both global and local scales, existing climate migration literature has primarily focused on international migration and the Global South, offering limited applicability to internal conditions in developed countries due to the issue's high context dependency (Hoffman, 2020). Local and municipal planners have a responsibility to pursue evidence-based climate adaptation strategies (Mitchell, 2020). Yet, planners lack reliable data to forecast potential changes to regional migration based on repeated exposure to climate stressors. Overwhelmingly, research has been qualitative in nature, leaving a need for quantitative, spatial studies to detect larger patterns in comparison to survey and interview-based findings (Piguet, 2018). Within developed countries, research that integrates environmental factors into typical migration estimation methods used by community development and economic planners is needed to determine the extent that rapid environment change may alter existing migration trends. This paper contributes to the literature on internal climate migration in developed countries by comparing the cumulative impact of repeated sudden onset climate stressors (i.e., natural disasters) on migration patterns within western US counties during the years 2017 - 2019. Wildfire displacement data from the Internal Displacement Monitoring Centre (IDMC) is compared to annual county-to-county migration estimates provided by the US Internal Revenue Service Statistics of Income Program (SOI) to identify the effects of repeated wildfire displacement events on in-migration, out-migration, and destination choice. The results of this work demonstrate how repeated climate-aggravated natural disasters may alter typical regional migration destination patterns. The study also presents initial findings on socioeconomic characteristics of climate migrants, which could support future research questions on the equity dimensions of interregional climate migration within the US.

Citations

- Ahsan, Reazul, Sadasivam Karuppannan, and Jon Kellett. "Climate migration and urban planning system: A study of Bangladesh." *Environmental Justice* 4, no. 3 (2011): 163-170.
- Black, Richard, Dominic Kniveton, and Kerstin Schmidt-Verkerk. "Migration and climate change: towards an integrated assessment of sensitivity." *Environment and Planning A* 43, no. 2 (2011): 431-450.
- Hoffmann, Roman, Anna Dimitrova, Raya Muttarak, Jesus Crespo Cuaresma, and Jonas Peisker. "A meta-analysis of country-level studies on environmental change and migration." *Nature Climate Change* 10, no. 10 (2020): 904-912.
- Mitchell, Carrie L., and Alexandra Graham. "Evidence-Based Advocacy for Municipal Climate Change Action." *Journal of Planning Education and Research* 40, no. 1 (March 2020): 31-43. <https://doi.org/10.1177/0739456X17740939>.
- Piguet, Etienne, Raoul Kaenzig, and Jérémie Guélat. "The uneven geography of research on "environmental migration"." *Population and environment* 39, no. 4 (2018): 357-383.

Key Words: Migration, Climate Change, Wildfire

NEGOTIATING THE ENVIRONMENTAL STATE IN AND FOR URBAN CLIMATE EXPERIMENTS

Abstract ID: 1873

Individual Paper Submission

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In the post-Kyoto years, increasing expectations and hope have been placed on cities as promising solutions to the global crisis of climate change. Nevertheless, a significant gap has been constantly observed between the high promise and disappointing reality, raising the question of how this gap comes about and why urban-scale climate experiments succeed in some places and fail in others. While many hindering factors are found to have much to do with a city's 'embeddedness' in broader political and institutional contexts, the role played by the nation state's environmental functioning, or the "environmental state" (Duit et al., 2016), has remained ambiguous. Its strategic role has been highlighted recently as different national governments leverage the climate agenda to steer both domestic and foreign policymaking in the post-pandemic era. It would not be possible to capture the full range of dynamics of urban climate experimentation and make sense of the prevalent promise-reality gap without a careful and critical evaluation of the nation-state-related factors.

This study is concerned with the dynamics of urban climate experiments within an emerging decarbonization-focused environmental state. It raises two research questions. First, how is the national agenda for carbon reduction articulated on the ground? Second, how does the articulation process affect the consequences of urban climate experiments? To answer these questions, a two-level analysis was conducted using China as a case, including (1) an analysis of 341 legal cases nation-wide to identify the pattern of articulations and contestations of the decarbonization agenda at local levels and (2) a detailed comparative case study of low-carbon city initiatives in two neighboring cities of Shenzhen and Huizhou in the Pearl River Delta region to illuminate how this pattern unfolded in and shaped specific climate experiments.

An interesting legitimacy space has been found with the emergence of a decarbonization-centered environmental state. This space is manipulated locally, driven by four rationales, namely carbon re-regulation, carbon formalization, carbon rationalization, and carbon exceptionalism. Despite similar combinations of these rationales, the two studied cases exhibited divergent outcomes partly due to their respective responses and strategies of negotiating different expectations, articulations, and exploitations of the 'low-carbon' framework. Specifically, effective orchestration of different rationales, which was achieved by a multiplicity of intermediary organizations (e.g., research institutions, industrial associations, NGOs) with established relationships with the local government, facilitated the implementation of Shenzhen's experiment.

This research sheds new light on the persistent gap between the high promise and disappointing reality of urban climate governance by introducing the environmental state as an analytical concept. The distinctive mechanism through which the national priority for carbon reduction shapes urban climate initiatives from below and inside with local actors' contestations highlights the dialectic rather than dichotomist relationship between the endogenous and exogenous factors for urban climate action. As climate experiments become platforms where scalar relations embedded in socio-ecological systems are mediated, negotiated, reconfigured, and transformed via the rhetoric as well as the materiality of carbon (Swyngedouw & Heynen, 2003), the role of planners as intermediaries between different scales and actors becomes crucial for delivering effective urban climate planning. Furthermore, this research engages with the ongoing debate over the nature of low-carbon urbanism (While et al., 2010; Long & Rice, 2019). The identified legitimacy space points to a strange combination of 'carbon' as quantifiable and territorially accountable material, on the one hand, and conceptual and discursive symbol, on the other. This point is of particular significance considering China's authoritarian style of climate governance (Lo, 2015), which theoretically minimizes the space for contestation at local levels. Through an 'extreme case,' the study demonstrates the contested nature of low-carbon urbanism, calling for more attention to the deliberative processes involved.

Citations

- Duit, A., Feindt, P. H., & Meadowcroft, J. (2016). Greening Leviathan: The rise of the environmental state? *Environmental Politics*, 25(1), 1-23.
- Lo, K. (2015). How authoritarian is the environmental governance of China? *Environmental Science & Policy*, 54, 152-159.
- Long, J., & Rice, J. L. (2019). From sustainable urbanism to climate urbanism. *Urban Studies*, 56(5), 992-1008.
- Swyngedouw, E., & Heynen, N. (2003). Urban political ecology, justice and the politics of scale. *Antipode*, 35(5), 898-918.
- While, A., Jonas, A. E. G., & Gibbs, D. (2010). From sustainable development to carbon control: Eco-state restructuring and the politics of urban and regional development. *Transactions - Institute of British Geographers*, 35(1), 76-93.

Key Words: low-carbon urbanism, environmental state, urban climate experiment, legitimacy space

SPATIOTEMPORAL CHANGES OF URBAN HEAT ISLAND INTENSITY IN WINTER CITIES: A CASE OF EDMONTON, CANADA

Abstract ID: 1877

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Urban heat exposures have considerably increased around the world over the past few decades (Tuholske et al., 2021). A number of factors at the neighbourhood scale such as land cover, spatial composition, and socio-economic status could influence urban heat exposure variations across a city leading to inequality of heat exposure. This study explores the spatiotemporal (seasonal and decadal) variations in urban heat islands (UHIs) and factors affecting UHI at the neighborhood scale in the City of Edmonton in Canada, North America's northernmost city of close to a million people, situated at about the 54th parallel. Among large Canadian census metropolitan areas, the built-up area in Edmonton increased multiple folds during the 1971-2011 period (Agrawal, 2016). Our assumption was that this increased built-up contributed to the UHI effect of the city as the built surfaces tend to absorb and store a large quantity of solar radiation (Fischer et. al., 2012).

We used Landsat satellite images from 1999 to 2021 acquired during the winter, spring, summer, and fall seasons to generate UHI maps and land use maps. Census and transportation data were used to determine the relationship between UHI and physical, and socio-economic factors across the NBHDs whereas Particulate Matter (PM_{2.5}) data were used to find out the relationship between UHI and air quality.

Our results show a significant UHI increase within residential neighbourhoods, particularly in newly master-planned neighbourhoods in the last decade or so. We also noticed that surface temperature in some industrial and residential neighborhoods increased by 2-6°C in winter, 2-6°C in spring, 6-12°C in summer, and 1-3°C in fall seasons compared to the surrounding rural areas. The temperature increases in these neighborhoods were strongly linked with the reduced vegetation cover and increased built-up areas. Apart from that, population density, houses and road network, and the average daily traffic volume of neighborhoods showed a significant positive relationship, whereas area covered by water bodies and neighbourhood area exhibited a significant negative relationship with the UHI of neighbourhoods. Neighbourhoods with higher median income and education showed a negative relationship with neighborhood UHI values. Neighbourhoods with a higher dependency ratio and lone-parent households showed a positive relationship with the UHI. Even though there is no significant relationship with UHI when PM_{2.5} is less than 10 µg m⁻³, a strong positive relationship was observed when PM_{2.5} is increased greater than 35.5 µg m⁻³, which is an unhealthy level for sensitive groups (EPA, 2022). These results demonstrate that high-latitude winter cities exhibit significantly amplified UHIs, especially in the summer, spring, and winter months. The outcome of this study will help municipal planners and policy-makers to develop heat mitigation and adaptation strategies for existing neighborhoods in parallel winter city designs. It will also inform the planning and design of new and existing neighbourhoods, so they elicit minimum UHI effects.

Citations

- Agrawal, S. 2016. Urban, Suburban, Regional and Wet Growth in Alberta. Report submitted to Alberta Land Institute.
- EPA (Environmental Protection Agency), 2022. Particulate Matter (PM) Pollution. <https://www.epa.gov/pm-pollution>
- Fischer, E. M., Oleson, K. W., and Lawrence, D. M., 2012. Contrasting urban and rural heat stress responses to climate change. *Geophys. Res. Lett.*, 39, L03705.
- Tuholske, C., Caylor, K., Funk, C. et al., 2021. Global urban population exposure to extreme heat. *Proc. Natl. Acad. Sci.*, 118, e2024792118.

Key Words: Urban Heat Island (UHI), Neighbourhoods, Socio-economic factors, Land use

GOVERNANCE FOR SYSTEM RESILIENCE: CONTRIBUTIONS OF INFRASTRUCTURE SYSTEM METHODS TO COLLABORATIVE RESOURCE MANAGEMENT THEORY AND PRACTICE

Abstract ID: 1894

Individual Paper Submission

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Multi-disciplinary social and ecological systems and environmental planning literature investigates the potential of collaborative resource management for building adaptive capacity while largely neglecting the role of infrastructure systems in supporting community resilience. The fields of engineering and business studies separately address the vulnerabilities and business continuity of energy, communications, and other infrastructure sectors and systems

without sufficient attention to communities and governance. In a changing threat landscape, we need integrated concepts and methods that support the development of inclusive institutions that convene owners, operators, communities, and decision-makers. How can infrastructure dependency assessment methods be used to build more resilient governance?

With its responsibility for leading the national critical infrastructure security and resilience partnership, the US Cybersecurity and Infrastructure Security Agency (CISA in the US Department of Homeland Security) developed, released, and piloted the Infrastructure Resilience Planning Framework infrastructure system dependency assessment methods that can be used to engage the public and private sectors in characterizing the system and reducing cascading consequences of disruptions. The paper examines three case-study applications of the infrastructure resilience methodology: 1) a Kentucky multi-hazard and regional mitigation plan application; 2) an economic and national defense port assessment; and 3) a watershed collaborative scenario exercise and projects to reduce the vulnerability of major Boston infrastructure facilities and communities of workers to future storm surge and sea level rise. Initial case-study findings support the importance of regional planning and suggest that infrastructure dependency assessment methods can support collaborative resource management and regional planning and governance practices among public, private, and non-governmental actors. The last case provides an example of integrating social vulnerability assessment with infrastructure planning and prioritization. The paper will conclude by outlining some of the challenges for the use of these methods by tribal governments, future case studies, and the questions for evaluation in 2023 by academic partners through an agreement with the Department of Homeland Security Centers of Excellence.

If the profession and academy are to contribute to resilience and adaptive capacity, planning scholars and practitioners need to know more about infrastructure operations and how to use dependency analysis to manage cascading consequences of disruptions across communities and scales.

Citations

- Becker, A. and Kretch, E. (2019). The leadership void for climate adaption. *Earth Science* 22 (<https://doi.org/10.3389/feart.2019.00029>).
- Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E. and Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change* 18: 4: 598-606 (<http://doi.org/10.1016/j.gloenvcha.2008.07.013>).
- Heino O, Takala, A., Jukarainen, P., Kalalahti, J., Kekki, T. and Verho, P. (2019). Critical infrastructures: The operational environment in cases of severe disruption. *Sustainability* 11: 838 (doi:10.3390/su11030838).
- Margerum, R. (2011). *Beyond consensus: Improving collaborative planning and management*. Cambridge MA MIT Press.
- O'Rourke, T. (2007). Critical infrastructure, interdependencies, and resilience. *Bridge-Washington National Academy of Engineering* 37:1, Article 22.

Key Words: resilience, infrastructure, systems, social vulnerability, regional planning

PUBLIC PERCEPTIONS OF ENERGY PLANNING: EXAMINING KNOWLEDGE AND EXPERIENCE WITH PUBLIC, PRIVATE, AND COOPERATIVELY OWNED ELECTRIC UTILITY SERVICE PROVIDERS IN THE US

Abstract ID: 1899

Individual Paper Submission

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As the visible faces of energy production for most US consumers, utility service providers will play a variety of important roles in a nation-wide net-zero energy transition (Frei et al., 2018). Little research currently explores public perceptions of energy utility providers, including knowledge of energy sources, trust in rates and service, and perceptions of political power. Across the country, groups have issued calls for public takeover of currently private utilities, most notably in New York (Public Power NY) and California. These groups cite concerns about private companies prioritizing profit over system maintenance, climate threats, and consumer safety. Many of these calls for municipalization or community ownership center environmental justice concerns (Bozuwa et al., 2021). Further, case study research suggests that utility ownership plays a key role in transitions to 100% renewable electricity, with many municipality-owned utilities making the transition (Adesanya et al., 2020).

To investigate consumer perceptions of electric utilities, we draw from a cross-sectional non-probability sample of US residents (n=4000) collected using the Qualtrics survey platform. We developed survey questions to measure a wide range of knowledge and perceptions about electric utilities, including knowledge about current service providers,

satisfaction with and trust in providers, perceptions of priorities, political power, and equity. Initial results show that almost a quarter of respondents do not know the ownership structure of the provider that services their home (privately owned by a company, publicly owned by a government entity, or cooperatively owned by consumers). Most respondents (63%) report that they are generally satisfied with their utility or feel neutral (23%), and 51% of respondents trust their utility to act in their best interests. Further, 30% of respondents feel their utility holds too much political power. Additional analysis will examine sociodemographic and psychological predictors of preferences for ownership structures and differences in perceptions across ownership structures.

The ownership structures of utilities have wide ranging implications for planning practice to push forward an equitable renewable energy transition. Understanding public perceptions and experiences with electric utility providers can help inform efforts to reorient planning and policy structures to enable rapid decarbonization. Understanding consumer perceptions of local utilities can also inform efforts to communicate with households about energy efficiency and conservation programs, particularly as widespread adoption of home decarbonization technology is necessary for a net-zero transition. Utilities are often the main communicators of these programs directly to consumers, suggesting strategies to reduce consumption, establishing social norms through feedback programs, and offering free or discounted technology upgrades (like smart thermostats). As research shows that trust in the source of information influences the effectiveness of messaging, specifically around technology adoption, understanding consumer perceptions of their utilities can support efforts toward building community support for a renewable energy transition (Yoeli et al., 2017). Developing a comprehensive understanding of public perceptions of energy planning institutions is necessary to envision and build new models of public engagement and ownership structures that prioritize equitable energy access.

Citations

- Adesanya, A. A., Sidortsov, R. V., & Schelly, C. (2020). Act locally, transition globally: Grassroots resilience, local politics, and five municipalities in the United States with 100% renewable electricity. *Energy Research & Social Science*, 67, 101579. <https://doi.org/10.1016/j.erss.2020.101579>
- Frei, F., Sinsal, S. R., Hanafy, A., & Hoppmann, J. (2018). Leaders or laggards? The evolution of electric utilities' business portfolios during the energy transition. *Energy Policy*, 120, 655–665. <https://doi.org/10.1016/j.enpol.2018.04.043>
- Yoeli, E., Budescu, D. V., Carrico, A. R., Delmas, M. A., DeShazo, J. R., Ferraro, P. J., Forster, H. A., Kunreuther, H., Larrick, R. P., Lubell, M., Markowitz, E. M., Tonn, B., Vandenbergh, M. P., & Weber, E. U. (2017). Behavioral science tools to strengthen energy & environmental policy. *Behavioral Science & Policy*, 3(1), 68–79. <https://doi.org/10.1353/bsp.2017.0006>
- Bozuwa, J., Riofrancos, T., Knuth, S., Robbins, P., Baker, S., McCullough, A. L., McDonald, K., Mackin, C., Aldana Cohen, D., Fleming, B., Graetz, N., & Shah, N. (2021). A New Era of Public Power: A Vision for New York Power Authority in Pursuit of Climate Justice. climate + community project. <https://www.climateandcommunity.org/a-new-era-of-public-power>.

Key Words: climate planning, energy, ownership, equity

ESTIMATING THE EFFECTS OF CLIMATE CHANGE ON THE SEASONAL TOURISM INDUSTRY - THE CASE IN SOUTH KOREA

Abstract ID: 1934

Individual Paper Submission

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Since 1975, global temperature has increased by 0.15 to 0.20°C on average per decade (Nasa earth observatory, n.d.). Climate change has become a serious issue, exerting multi-faceted and mostly negative influences on daily life, such as food insecurity, increasing the frequency of natural disasters, and disruptions in outdoor exercise. In particular, climate change significantly influences the tourism industry, because weather condition is one of the important factors that people consider in taking outdoor activities. Global warming substantially damages the winter tourism industries, such as skiing or snowboarding, because the days of snow and ice has been shortened, and extra cooling facilities were required to keep the good condition for the sports activities. This results in higher maintenance costs and shorter operating period, hence the reduced profit (Hewer & Gough, 2018; Damm et al., 2017).

The average annual temperature in Korea was 12.2°C during the 1980s and increased to 13.0°C in the 2010s, or by 0.20 – 0.40°C per decade. As a result, summer in the last twenty years (2001 – 2020) has got twenty days longer—from 113 days to 123 days, compared with twenty years ago (1981 – 2000). Meanwhile, winter has gotten six days shorter, from 96 to 90 days in the same period (Korea Meteorological Administration, 2020). Longer summers and shorter winters increase the vulnerability of tourism industries that consist primarily of outdoor activities (Kim et al., 2017). Despite the magnitude of the issue, we still lack quantitative research that examines the effects of climate

change on the tourism industries. Many researchers utilizing natural environmental conditions (sea level, elevation, and slope) as well as weather conditions (temperature, precipitation, and wind speed) to clarify the significant negative impacts imposed by climate change on beach tourism. However, although various factors affect the tourism industry, many studies considered only a limited range of aspects. When evaluating the effects of climate change on the tourism industry, it is necessary to consider the use of the natural environment and weather conditions, as well as location and social characteristics such as nearby commercial facilities, accessibility, and surrounding tourist attractions.

In this backdrop, this study aims to assess the effect of climate change on tourism. We hypothesize that as the global temperature rises, the number of visitors in summer season decreases. The spatial scope of the study is 277 beaches in South Korea, and the temporal scope is summer (July to August), 2007 to 2022. We use the generalized additive model (GAM) to decipher nonlinear relationships between the level of temperature and the number of tourists in summer season, controlling for various compounding effects of macroeconomic and weather conditions. Information on the number of tourists is provided by the Tourism Knowledge & Information System.

As an early empirical study of the effect of climate change on seasonal tourism, the findings of this research will guide local governments in establishing local policies for helping tourism industry.

Citations

- Damm, A., Greuell, W., Landgren, O., & Pretenthaler, F. (2017). Impacts of + 2 C global warming on winter tourism demand in Europe. *Climate Services*, 7, 31-46.
- Hewer, M. J., & Gough, W. A. (2016). Weather sensitivity for zoo visitation in Toronto, Canada: a quantitative analysis of historical data. *International journal of biometeorology*, 60(11), 1645-1660.
- Kim, S., Min, W., & Kim, N. (2017). The Vulnerability of Tourism Industry to Climate Change and Coping Strategy. *Korea academic society of tourism management*, 32(6), 273-292.
- Korea Meteorological administration, Kim et al. (2020). Korean Climate Change Assessment Report 2020. (Report No. 11-1360000-001657-01). Korea Meteorological administration. http://www.climate.go.kr/home/cc_data/2020/Korean_Climate_Change_Assessment_Report_2020_1_summary.pdf
- Nasa Earth Observatory, n.d. World of change: Global temperatures. Retrieved from <https://earthobservatory.nasa.gov/world-of-change/global-temperatures?src=eo-features>

Key Words: Climate Change, Tourism industry, Time-series data, Generalized Additive Model

UNIVERSITIES AS SUSTAINABILITY CHAMPIONS: THE PERFORMANCE OF TOP CANADIAN INSTITUTIONS

Abstract ID: 1951

Individual Paper Submission

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Universities have led the world with new ideas and innovation for centuries; they are places that not only educate students, but also show them values and ways of life. University campuses are microcosms of a more complex city, illustrating the complexities and environmental issues faced by cities, and must therefore be sustainable themselves and act as a living laboratory to experiment and create new solutions. This premise suggests that, if our universities change their operations and management practices to incorporate sustainability principles, our students would be internalizing behaviours that would be valuable in integrating sustainability practices in their professional and personal lives.

Canada's "U15" universities comprise the top research-oriented institutions in the country. Combined, the U15 undertake 80% of all competitive university research in Canada. These universities stand to be leaders not only in research and education, but also in innovation in sustainability, and they have direct and indirect impact on the surrounding environment through development, resource consumption, hazardous waste, and energy usage. A survey of their policies, operations, and practices regarding sustainability reveals their levels of commitment and their leadership as stewards of our environment.

This research analyses Canadian U15 universities' policies and practices and uses sustainability indicators to determine their levels of commitment to implementing sustainable environments. The survey, based on both a quantitative analysis of environmental sustainability outputs and a sustainability assessment model, compares the sustainability levels of the U15 universities with the purpose of ranking them according to their environmental sustainability practices and the institutionalized policies that support these practices. A scoring system uses a point-based scale across several categories. The criteria used for those include green building policies, carbon management plans and reduction targets, greenhouse gas emissions, water usage, waste diversion, and electricity usage. These

criteria were developed to be straightforward, objective, and easily replicable. The methods used include gathering data from each university for each category and calculating per-capita values based on the number of campus users at each university. The results indicate that the type of evaluation method used can make a significant difference in which of the U15 universities are deemed to be most sustainable.

The results also provide a snapshot of how Canada's leading research universities compare to one another on campus environmental sustainability. While most of the universities included in this study track their sustainability performance to some extent, the existing metrics are not very useful for comparing against one another since there is a lack of consistency among them. Consistency between universities is lacking regarding the time that baselines were established, and the specific metrics used to track changes. The method and scoring system used in this project can be easily and broadly applied to other universities; however, the results may not be consistent, unless there is uniformity of data collected and used. Ultimately, a longitudinal study using metrics based on the criteria established in this study would be most useful in determining what criteria should be used to measure environmental sustainability on university campuses.

This work is relevant to university leaders, campus planners, faculty and students who spend their lives on university campuses, and anyone interested in using university campuses as living labs for practices that could be adopted citywide. University campuses can be part of the solution to climate change and increase the sustainability needs of most of our built environments, making a contribution beyond the education they provide to students. Providing incentives to universities to incorporate certain sustainable practices into their policies and operations is but one way to implement change and start a trend towards greener, healthier, and more energy efficient cities.

Citations

- Alghamdi, N., den Heijer, A., Jonge, H. (2017). Assessment tools' indicators for sustainability in universities: an analytical overview. *International Journal of Sustainability in Higher Education*. 18, 1. pp. 84-115.
- Amaral, A., Rodriguez, E., Gaspar, A., Gomes, A. (2019). A review of empirical data of sustainability initiatives in university campus operations. *Journal of Cleaner Production*. 250.
- Bullock, G., Wilder, N. (2016). The comprehensiveness of competing higher education sustainability assessments. *International Journal of Sustainability in Higher Education*. 17, 3. pp. 282-304.
- Lidstone, L., Wright, T., Sherran, K. (2015). An analysis of Canadian STARS-rated higher education sustainability policies. *Environment Development and Sustainability*. 17, 259. pp. 259- 278.
- Vaughter, P., McKenzie, M., Lidstone, L., Wright, T. (2016). Campus sustainability governance in Canada: A content analysis of post-secondary institutions' sustainability policies. *Journal of Sustainability in Higher Education*. 17, 1. pp. 16-39.

Key Words: sustainability, university campus, sustainable policy, sustainable practices, sustainability indicators

COORDINATING COADAPTATION – PLANNING FOR ECOSYSTEM MIGRATIONS WITHIN MANAGED RETREAT IN NEW YORK STATE

Abstract ID: 1961

Individual Paper Submission

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Environmental hazards and the effects of climate change are causing various coastal and shoreline ecosystems to begin to migrate inland. Since most communities are still at the nascent stages of planning for managed retreat - the strategic relocation of structures or abandonment of land to manage natural hazard risk, local governments and stakeholders alike are not yet actively prepared for managing these ecological migrations. The relocation and resettlement of established human communities is an incredibly complicated and contentious process, so planners have largely failed to pair human resettlement with the active relocation of plant and animal populations. Complex regulations and concerns over native species generally make the translocation of many species impractical, so scientists have generally favored the preservation and restoration of landscapes to protect or repopulate aquatic, animal, and plant species.

Nevertheless, assisted colonization—the translocation and establishment of populations of organisms outside their historical range—could prove necessary to facilitate some species' survival. (IUCN, 2013). Managed retreat plans could conscientiously facilitate the migration of species from their shrinking climate refugia to new locations that have the conditions needed for their persistence. (Brodie et al., 2021).

This paper addresses the research question, how are planners in New York State coordinating species migration with hazard mitigation and flood resiliency planning? We assess how local governments and non-profits engage with

property owners to protect and conserve wetland migration corridors and higher ground establishment areas.

The first case study concentrates on New York City and Long Island to demonstrate how sand dune restoration, amended zoning laws, property buyouts and acquisitions, and laws against hard armoring are effectively coordinating ecosystem protection and restoration with residents' flood resiliency. The second case study of the Adirondacks and North Country regions of NY investigates how wildlife corridors, zoning laws to prevent forest fragmentation, and the acquisition and conversion of agricultural lands can rewild landscapes to maximize the inland migration of indicator and keystone species.

The case studies involved over 20 semi-structured interviews with county and local planners, wildlife management professionals, and conservation non-profit leaders. Our findings reveal that local actors aiming to pair species migration planning with communities' hazard mitigation and climate adaptation plans have demonstrated several successes but face several significant challenges. First, most state and federal policies favor in situ place-based mitigation strategies that can deter the landscape design options needed to maximize inland migration. Second, there are many disparities in the state regarding local capacity to demonstrate to residents how inland migration will impact existing and future land uses and development. New York State could encourage the incorporation of scenario planning (Chakraborty et. al. 2011) in hazard mitigation updates to equip capacity-constrained local governments to better demonstrate how inland migration will impact residents.

This study aims to support county and town planners with information that can help them proactively alleviate residential concerns and conflicts regarding species migration, including undesirable impacts like maladaptation or the migration of predators and invasive species.

Citations

- Brodie, Lieberman, S., Moehrensclager, A., Redford, K. H., Paul Rodriguez, J., Mark, S., Seddon, P. J., & Watson, J. E. . (2021). Global policy for assisted colonization of species: Coordinated policies are needed for the translocation of species for conservation. *Science (American Association for the Advancement of Science)*, 372(6541), 456–. <https://doi.org/10.1126/science.abg0532>
- Chakraborty, Kaza, N., Knaap, G.-J., & Deal, B. (2011). Robust Plans and Contingent Plans: Scenario Planning for an Uncertain World. *Journal of the American Planning Association*, 77(3), 251–266. <https://doi.org/10.1080/01944363.2011.582394>
- IUCN, "Guidelines for reintroductions and other conservation translocations, Version 1.0" (IUCN Species Survival Commission, Switzerland, 2013).

Key Words: ecosystem migration, translocation, managed retreat, climate adaptation, wildlife corridors

WILL THE URBAN LAND DEVELOPMENT INTENSITY AFFECT CARBON DIOXIDE EMISSIONS? A CASE STUDY OF FIVE MEGA CITIES IN CHINA.

Abstract ID: 1998

Individual Paper Submission

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On March 5, 2021, the 2021 annual government work report of the State Council pointed out that China should do solid work in carbon peak and carbon neutralization to deal with global warming. With the industrial development and a series of industrial revolutions, cities also produce a large amount of carbon dioxide in the process of development, resulting in the urban heat island effect. Research shows that the scale of urban land use is positively correlated with carbon dioxide emissions to a certain extent, but many studies show that a more compact urban spatial structure can slow down carbon dioxide emissions. Therefore, the impact of urban land use intensity on carbon dioxide has not been specifically disclosed. Also, studies show the proportion of carbon dioxide emitted by mega cities is the highest in the region. Therefore, the relevant research on mega cities will contribute to the overall optimization of carbon emissions in the region. Analyzing the relationship between land urbanization and carbon dioxide emission in mega cities from the perspective of land development intensity can better plan urban land and spatial development and effectively alleviate urban heat island. However, the current research mainly focuses on the macro level, and pays less attention to the land development intensity at the micro level. The research at the medium and micro level will help to point to the formulation of more specific measures. This study will take five representative mega cities in China: Beijing, Shanghai, Chongqing, Wuhan and Guangzhou as the research objects. Using the nuclear density analysis model, this paper analyzes the spatial distribution of land development intensity in mega cities, makes a spatial regression analysis on the distribution of carbon dioxide emissions based on the spatial regression method, explores whether carbon dioxide has spatial heterogeneity in space, and tries to analyze its impact on the spatial distribution of carbon dioxide based on several important indicators of urban land opening intensity. The results show that: (1) the land development intensity of the five cities has the characteristics of aggregation in space, and the average land development intensity of coastal cities is significantly different from that of inland cities. (2)

Carbon dioxide emissions have obvious spatial difference distribution characteristics, and there are significant differences in carbon dioxide emissions in different regions. (3) There is a positive effect between carbon dioxide emission and land development intensity to a certain extent, but it is also found that a compact and reasonable urban land development and utilization model can reduce carbon dioxide emission to a certain extent. This conclusion is helpful to explore the relationship between land development intensity and carbon dioxide emission in mega cities, and provides suggestions for the spatial layout of urban compact development.

Citations

- Zhang, N., Yu, K., Chen, Z.,(2017). How does urbanization affect carbon dioxide emissions? A cross-country panel data analysis. *Energy Policy* 107, 678–687.
- Hu, J., Huang, Y., Du, J. (2021). The Impact of Urban Development Intensity on Ecological Carrying Capacity: A Case Study of Ecologically Fragile Areas. *Int. J. Environ. Res. Public Health* 2021, 18,7094.
- Sun, W.Q., Zhou, Y., Lv, J.X., Wu, J.Z., (2019). Assessment of multi-air emissions: case of particulate matter (dust), SO₂, NO_x and CO₂ from iron and steel industry of China. *J. Clean. Prod.* 232, 350–358.

Key Words: Urban land development intensity, carbon dioxide emissions, megacities

A GLOBAL READING OF URBAN RESILIENCY: THE CHANGING ROLES OF THE ECO FRINGES IN MUMBAI, AMSTERDAM, NEW YORK AND TOKYO

Abstract ID: 2010

Individual Paper Submission

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Transition ecologies, namely ecotones, are where life started. Deltas, estuaries, bayous, and wetlands are places where different ecosystems merge and evolutionary processes take place. This paper explores four coastal cities to look at the relationship between environmental values and urban expansionist paradigms through reclamation projects. It argues that these thresholds, occurring contemporaneously in expanding metropolitan regions, correspond to changing conceptualizations of urban-nature relationships, in other words, urban core's changing relationships to fringe ecosystems. The metropolitan regions used as case studies for this piece are Mumbai, Amsterdam, New York, and Tokyo. Each has used reclamation as a grand expansion strategy during political, or economic transitions. During each grand alteration attempt in these regions, the developers, reclamation enthusiasts or urban planners revisited the city's immediate ecological fringe for expansion and following these revisitation, a new geographical order formed in their subsequent regions. The urban fringe has become the socio-spatial zone where new and experimental ideas about urban development encounter complex natural systems. The exploration of land use negotiations and reclamation's role in shaping the urban-nature relationships are critical gaps in the planning field. Today, any future-looking climate resiliency plan should build on the reading of this transitional palimpsest and understand how these environmental values were traded and how global expansion narratives transformed the urban-nature gradient.

Citations

- Barbier EB, Acreman M and Knowler D (1997) *Economic valuation of wetlands: a guide for policy makers and planners*. Gland, Switzerland: Ramsar Convention Bureau.
- Bouwer K (1994) The integration of regional environmental planning and physical planning in the Netherlands. *Journal of Environmental Planning and Management* 37(1). Taylor & Francis: 107–116.
- Endoh T (2004) Historical Review of Reclamation Works in the Tokyo Bay Area. *Journal of Geography (Chigaku Zasshi)* 113(6). Tokyo Geographical Society: 785–801.
- Gupta K (2007) Urban flood resilience planning and management and lessons for the future: a case study of Mumbai, India. *Urban Water Journal* 4(3). Taylor & Francis: 183–194.
- Schreurs MA (2003) *Environmental Politics in Japan, Germany, and the United States*. Cambridge: Cambridge University Press.

Key Words: climate resiliency, coastal planning, reclamation, urban wetlands, regional expansion

CLIMATE JUSTICESCAPE IN WATER-ENERGY-FOOD NEXUS: A CASE FOR PHOENIX, ARIZONA

Abstract ID: 2018

Individual Paper Submission

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Water-Energy-Food (WEF) nexus systems framework has been applied in urban studies, engineering, and environmental science and policies to understand the complexity and dynamics of the three core systems in sustainable development (Albrecht et al. 2018). To understand the social equity and environmental justice of the nexus system under climate change impacts spatially, a Climate Justicescape framework was developed in particularly for assessing climate change-associated risks to vulnerable populations (Cheng 2019). We first conducted a systemic literature review using keywords of water, energy, food, justice, and equity in SCOPUS database and reviewed a hundred peer-reviewed articles to understand how justice and equity concepts are addressed in current WEF literature. Among 106 articles, environmental justice and urban resilience, food security, and governance were identified among the top research topics. In order to plan for uncertainty and enhance community resilience under climatic change, a holistic understanding of the intersections of climate justice and water-energy-food nexus systems is critical. Climate change is associated with increased hot extremes, uncertainty in heavy precipitations, and increased droughts, which has direct implications in energy, water and food security and community impacts in the western United States (IPCC 2021). To what degree do the socially vulnerable groups are exposed to climate change associated hazards and insecurity in the Water-Food-Energy nexus systems of climate justice implications? We use Phoenix, Arizona, as a case study. The zoning segregation practices in Phoenix in the past have contributed to incompatible land uses and environmental justice issues in central city south neighborhood where minority populations reside (Bolin et al. 2005). Phoenix is the fifth largest city and the fastest growing city in the US since 2010 census shown. We identified flood hazards, surface temperature, and proximity to fresh produce as indicators associated with water, energy, and food security associated with climate change impacts and overlay with race, income, and poverty rate in ArcGIS. The findings suggest the largest minority population in the City of Phoenix, the Hispanics (43% in US Census 2020), are among the most vulnerable under WEF Climate Justicescape, which is consistent with systemic injustice patterns in Phoenix area. The study suggests that the progressing climate change impacts will continue and aggravate the systemic vulnerability in cities. It is urged to ensure persistent equity planning is in place to prioritized investment on city's water, energy, and food systems infrastructure development and climate change mitigation and adaptation solutions in climate injustice neighborhoods in order to make justice goals be accountable and achieve sustainable, resilient, and just futures in every city.

Citations

- Albrecht, Tamee R. et al. (2018). The Water-Energy-Food Nexus: A systematic review of methods for nexus assessment, *Environ. Res. Lett.* 13 043002
- Bolin, Bob, Sara Grineski, & Timothy Collins. (2005). The Geography of Despair: Environmental Racism and the Making of South Phoenix, Arizona, USA. *Human Ecology Review*, 12(2), 156–168.
- Cheng, Chingwen. (2019). Climate justicescape and implications for urban resilience in American cities, in *The Routledge Handbook of Urban Resilience* ed. Michael A. Burayidi , Adriana Allen , John Twigg and Christine Wamsler. Abingdon: Routledge
- Cheng, Chingwen. (2019). Climate justicescape and implications for urban resilience in American cities, in *The Routledge Handbook of Urban Resilience* ed. Michael A. Burayidi , Adriana Allen , John Twigg and Christine Wamsler. Abingdon: Routledge

Key Words: Water-Energy-Food Nexus, Climate Justice, systemic injustice, vulnerability, Phoenix

PLANNING FOR WASTELANDS: A SOCIO-ECOLOGICAL DESIGN APPROACH IN PARIS' PETITE CEINTURE

Abstract ID: 2019

Individual Paper Submission

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Post-industrial urban spaces present incredible urban ecological and social opportunities. As industrial operations close or wind down, these spaces are often disregarded or abandoned, with little oversight or management. As they evolve rapidly through successional states, untended post-industrial spaces produce novel ecological systems with rich habitat and dynamic social opportunities. Although they may be considered wastelands, these are unique spaces and outstanding urban assets.

In Paris, France, the Petite Ceinture is a 32-kilometer decommissioned rail line that connects the industrial heritage of the city's former automobile manufacturers, abattoirs, quarries, warehouses and other industrial fabric. The rail line ran for 140 years, but was decommissioned in the wake of economic globalization. The final train ran in 1993, after which the Petite Ceinture was simply sealed off from the public and left to be. It soon became a wildlife corridor connecting two major woodlands on the eastern and western edges of the city, and then evolved into breeding habitat in itself. As patches of herbs and grasses gave way to closed canopy forest, the Petite Ceinture developed structural diversity and astounding biodiversity. With no management regime and human visitation officially prohibited, it soon became a beloved "secret garden" lacing the city's outer arrondissements. Naturalists and adventurers found entry points through the fencing, artists occupied the abandoned stations, and people set up urban homesteads on the

edges of the tracks.

In response to competing visions of how this astounding urban asset should be planned and managed, the City of Paris launched public consultations in 2013 that were organized around a set of provocation questions that could lead to more open-ended and visionary discussions. Consultations included educational events, guided tours, online portal discussions, community-specific workshops, public meetings, and public gatherings with elected officials. The consultative process generated vivid public exchange. Thousands participated, building the foundation of a plan to support the Petite Ceinture as a social and “respiration” space in the city, with emphasis on the potential to learn how to “live together” through the Petite Ceinture. There were points of deep disagreement, such as the level of security necessary for enjoyment of the space and the intensity of access compatible with biodiversity conservation. The City proceeded with a light touch, opting not to develop any portions intensively. Rather, the City decided to simply start opening portions of the Petite Ceinture and welcome people onto the tracks.

The City created access points and basic safety measures, and opted to continue the “hands off” approach that had already generated such a verdant urban landscape. Particular portions have been more carefully landscaped, with a view to habitat enhancement, according to local preferences. But for the most part, the Petite Ceinture remains off limits to human visitors, and the design approach embraces the ideals of terrain vague, with indeterminacy and unregulation as guiding principles.

This presentation presents the Petite Ceinture as a case study in planning for urban wastelands as socio-ecologically important spaces in their own right. The presentation suggests that these spaces hold unique values, and that there is much to be gained by building awareness for novel ecosystems and aesthetic appreciation beyond conventional Western expectations. The presentation is based on archival and field research, as well as site analysis, intensive interviews and analysis of policy and planning documents. This presentation situates the Petite Ceinture as an innovative approach to urban sustainability, particularly in terms of post-industrial sites and urban wastelands.

Citations

- Foster, J., 2010. Off Track, In Nature: Constructing Ecology on Old Rail Lines in Paris and New York. *Nature and Culture* 5, 316–337.
- Brun, M., Di Pietro, F., Bonthoux, S., 2017. Residents’ perceptions and valuations of urban wastelands are influenced by vegetation structure. *Urban Forestry and Urban Greening*.
- Edensor, T., 2005. *Industrial Ruins: Space, Aesthetics and Materiality*. Berg, New York.
- Foster, J., 2014. Hiding in plain view: Vacancy and prospect in Paris’ Petite Ceinture. *Cities* 40, 124–132.
- Godard, F., 2019. *De la Jungle au Jardin des Traverses sur la Petite Ceinture - Paris18e*. Paris, France.

Key Words: Paris, ecological planning, industrial ruins, environmental aesthetics, public engagement

ARE CITIES PREPARING FOR THE CLEAN ENERGY TRANSITION? A CONTENT ANALYSIS OF 30 U.S. LOCALITIES.

Abstract ID: 2021

Individual Paper Submission

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The clean energy transition is upon us. What are cities doing about it? This paper will address the role of local governments in the clean energy transition, and will evaluate the extent to which U.S. cities are currently embracing and preparing for that role via their master or comprehensive plans, sustainability or climate action plans, and municipal zoning codes.

We begin by discussing the specific ways in which local governments can support and facilitate the transition to an economy and society driven by clean energy systems with net-zero carbon emissions. Our focus is not on the broad range of carbon-reduction strategies found in most municipal climate action plans, which includes the reorientation of traditional land use and transportation planning functions with the goal of greenhouse gas (GHG) emission reduction. We focus solely on the evolving role of cities in supporting clean energy systems, primarily distributed renewable electricity systems and the “grid-edge” technologies (e.g., energy storage) needed to help those technologies displace conventional fossil-fuel generation in our electricity portfolio. Our focus on energy systems builds off of early research by Andrews (2008) who identified emerging planning challenges related to clean energy siting, district energy systems, etc., as well as more recent work on how urban planning can help to support solar energy and other distributed energy resources (DER’s) including micro-grids, smart energy management systems, energy storage, and electric vehicle infrastructure (e.g., Adil and Ko, 2016).

Our methodology is inspired by prior studies that analyzed municipal planning documents to evaluate the extent to which cities are preparing for sustainable development (Berke and Conroy, 2000), adopting innovative climate action

practices (Bassett and Shandas, 2010), or incorporating equity and justice into climate action plans (Schrock, et al., 2015). Similar to those studies, we conduct a methodical content analysis of planning documents from 30 U.S. cities, representing a range of high, middle, and low rankings on the American Council for an Energy-Efficient Economy's Clean City Energy Scorecard.

We examine each selected city's comprehensive or master plan, as well as their most recent sustainability or climate action plan, to determine if the plans address DER's in their discussion of existing conditions, needs, and opportunities, recommend DER's for incorporation into municipal operations, or recommend any policies or programs to support DER technologies in the community. Unlike many of the previous studies, we also examine each city's municipal code to determine whether DER's are identified and defined, permitted (where applicable) as an allowed use in any zoning districts, or in any way promoted or incentivized for use in the community.

These findings will provide an understanding of whether U.S. cities are preparing for their role in the clean energy transition, whether certain DER technologies are more recognized than others in local planning documents, and whether cities known as leaders on renewable energy and efficiency (i.e., per the ACEEE rankings) are also more prepared for other emerging aspects of the clean energy transition. It will also set the stage for further research analyzing the characteristics of the cities that are farthest along in the clean energy transition, as well as for detailed qualitative research on planners' and city officials' perspectives on the role of cities in this transition.

Citations

- Adil, Ali, and Yekang Ko. (2016). "Socio-technical evolution of Decentralized Energy Systems: A critical review and implications for urban planning and policy." *Renewable and Sustainable Energy Reviews* 57: 1025–1037. <https://doi.org/10.1016/j.rser.2015.12.079>.
- Andrews, Clinton J. 2008. "Energy Conversion Goes Local: Implications for Planners." *Journal of the American Planning Association* 74 (2): 231-254. <https://doi.org/10.1080/01944360801993531>.
- Berke, P., & Conroy, M.M. (2000). "Are We Planning for Sustainable Development? An Evaluation of 30 Comprehensive Plans." *Journal of the American Planning Association* 66 (1): 21-33. <https://doi.org/10.1080/01944360008976081>.
- Bassett E., & Shandas V. (2010). "Innovation and climate action planning: perspectives from municipal plans." *Journal of the American Planning Association* 76 (4): 435–450. <https://doi.org/10.1080/01944363.2010.509703>.
- Schrock, G., Bassett, E., & Green, J. (2015). "Pursuing Equity and Justice in a Changing Climate: Assessing Equity in Local Climate and Sustainability Plans in U.S. Cities." *Journal of Planning Education and Research* 35 (3): 282–295. <https://doi.org/10.1177%2F0739456X15580022>.

Key Words: Energy, Technology, Climate, Sustainability

SPATIAL DISTRIBUTION OF USES OF GREEN SPACES BY SCHOOLS AND THE SOCIAL BENEFITS: THE CASE OF STAVANGER, NORWAY

Abstract ID: 2029

Individual Paper Submission

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Green spaces are an inextricable part of a city as it offers plenty of valuable things and traits to the urban environment and people-residents. Past studies have documented that green spaces bring various types of benefits to people and a major part of the literature focuses on how adults use green areas and parks, however, the schools' use of green areas has attracted less interest. Green spaces are a key component of the urban environment as it provides multiple advantages to people of all age groups (from infants to elderly) and presents various functions, such as recreation, education, play. Regarding the benefits, one of them is the socio-cultural aspects that are derived from the green spaces. The term includes educational values, aesthetic values, social relations, sense of place, cultural values and psychological well-being, and also the interaction with nature. The effect of green areas on the sustainability and quality of life is documented (Cilliers & Cornelius, 2018). Children's way of interacting with green spaces can differ from that of adults. In that regard, the social aspects parks provide for children have been explored, particularly regarding play, social integration or socialization, and inclusion (Seaman et al., 2010). For older children and teenagers, parks are known to provide important settings for socializing with their peers and getting involved in sports and physical activity (Loukaitou-Sideris & Sideris, 2009). Urban-dwelling children in proximity to nature have been found to have better social skills and social, emotional, and behavioural scores (Richardson et al., 2017). It has also been hypothesized that, by encouraging the development of social contacts, green spaces might improve psychological health (Maas et al., 2009). The present study focuses on the spatial allocation of green spaces' uses by schools and the social benefits that children gain from the interaction with urban nature. The analysis is based on a dataset consisting of 51 green spaces units (ranging from small neighbourhood green spaces to large urban forests)

and on a survey and interviews. The survey and interviews were conducted by schoolteachers of the four different grades (kindergartens, primary, secondary and high schools) in the city of Stavanger in Norway. The survey indicated that the green spaces are located in a close distance to the different school grades. Hence, an outcome of the analysis of the results concluded that schools use the nearby green spaces at a close distance of 1000 meters. This average distance is bigger comparing to the standards proximity of green spaces to houses, which ranges from 250 to 400 meters. Based on the schools' responses, the majority of the identified green spaces are situated inside their respective area and radius influence. However, it is observed that 42% of the schools use also green spaces that are outside of their local area and far away from their units. Those identified green spaces consists major big and known green areas in Stavanger city as they are landmarks of the whole town.

Citations

- Cilliers, E. J., & Cornelius, S. (2018). An approach towards the planning of green child-friendly spaces in South Africa. *Community Development Journal*, 53(2), 263-280.
- Loukaitou-Sideris, A., & Sideris, A. (2009). What brings children to the park? Analysis and measurement of the variables affecting children's use of parks. *Journal of the American Planning Association*, 76(1), 89-107.
- Maas, J., Verheij, R. A., de Vries, S., Spreeuwenberg, P., Schellevis, F. G., & Groenewegen, P. P. (2009). Morbidity is related to a green living environment. *Journal of Epidemiology & Community Health*, 63(12), 967-973.
- Richardson, E. A., Pearce, J., Shortt, N. K., & Mitchell, R. (2017). The role of public and private natural space in children's social, emotional and behavioural development in Scotland: A longitudinal study. *Environmental research*, 158, 729-736.
- Seaman, P. J., Jones, R., & Ellaway, A. (2010). It's not just about the park, it's about integration too: why people choose to use or not use urban greenspaces. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 1-9.

Key Words: Green spaces, Schools, Social benefits, Spatial, Stavanger

UNPACKING INTERSECTIONAL CLIMATE PERCEPTIONS: UNDERSTANDING THE IMPACTS OF RACE AND GENDER ON CLIMATE IMPACTS, FUTURE CONCERNS, AND PLANNING EFFORTS

Abstract ID: 2037

Individual Paper Submission

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Climate change impacts are intensifying existing social inequalities locally and globally. Exposure to those impacts, as well as the ability to prepare for and recover from them, are shaped by complex power structures. Growing scholarship documents how systems like racial capitalism, patriarchy, heteronormativity, and ableism impact how people experience climate change, perceive future threats, and envision actions to reduce harms (Goldsmith, Raditz, & Méndez, 2021). Simultaneously, an expanding body of literature uses an intersectional lens to explicate a more nuanced understanding of how co-constituted power structures manufacture differential climate vulnerability (Combahee River Collective, 1983; Jacobs, 2019). This is complemented by research describing innovative acts of refusal and survival against environmental violence that are rooted in an intersectional understanding of oppression and liberation (Amorim-Maia et al., 2022; Dorries & Harjo, 2020). Despite the increasing focus on intersectional approaches to climate planning, there are limited quantitative studies examining how the co-constituted processes of being racialized and gendered influence climate change perceptions in the United States. In contribution to these conversations, we examine how race and gender together shape experiences of climate impacts, perceptions of future risk, and desire for adaptation actions in Austin, Texas.

Our research, based on a city-wide survey of Austin households, suggests that race and gender are related to which climate threat people have experienced, their estimates of past and future changes to various climate risks, their trust in major actors for climate adaptation projects, and overall concern regarding climate change. For example, we found that Black men and women were more likely to report experiences with extreme heat and poor air quality, while white men indicated greater exposure to drought risks. Importantly, we note that Black women were less likely than white men to report experiencing climate impacts but held significantly higher concerns for climate change more broadly. Generally, white men had lower concerns for climate change compared to all other groups, even while holding income, education, and political party constant. Additionally, the survey indicates that all groups preferred local community organizations or local governments to develop adaptation projects instead of NGOs, the federal government, or the State of Texas. However, the perception of the roles of local government and community organizations in adaptation projects varied considerably, with Latino men, Latina women, and Black women being less supportive of local government actions.

Together, this paper offers an analysis to examine climate change perceptions in Austin and provides insights into how research centering intersectional experiences can be used to shape local plans, policies, and programs to address climate injustices. Our study contributes to larger conversations on understanding and addressing interlocking systems of oppression in climate planning research and practice.

Citations

- Amorim-Maia, A. T., Anguelovski, I., Chu, E., & Connolly, J. (2022). Intersectional climate justice: A conceptual pathway for bridging adaptation planning, transformative action, and social equity. *Urban Climate*, 41, 101053.
- Combahee River Collective (1983). The Combahee river collective statement. *Home girls: A Black feminist anthology*, 1, 264-274.
- Dorries, H., & Harjo, L. (2020). Beyond safety: Refusing colonial violence through indigenous feminist planning. *Journal of planning education and research*, 40(2), 210-219.
- Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, 18(1), 24-39.
- Goldsmith, L., Raditz, V., & Méndez, M. (2021). Queer and present danger: understanding the disparate impacts of disasters on LGBTQ+ communities. *Disasters*.

Key Words: Climate change, Climate justice, Intersectional, Racism, Patriarchy

RETHINKING THE SPATIAL FRAMEWORK AGAINST GROWING HEAT VULNERABILITY IN DEVELOPED COUNTRIES' CITIES: THE CASE OF SEOUL, SOUTH KOREA

Abstract ID: 2041

Individual Paper Submission

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Cities worldwide have faced inevitable impacts of climate change on their citizens' lives in recent years, and cities of developed countries are no exception. Among different kinds of climate change impact, this research specifically aims to suggest the countermeasures against the growing heat vulnerability in developed countries' cities that can be contributed from urban planning and design perspective. Seoul, the capital city of South Korea, was selected as the appropriate study area since the Republic of Korea was the country with the OECD member country with the highest population density in 2020, which would mean the biggest impact to the most population, and Seoul was the 7th climate-vulnerable country according to the Nestpick's 2050 Climate Change City Index, since its' climate shift will move from the hot summer continental climates to dry winter humid subtropical climate and its temperature shift by 2.12 in the annual average temperature fluctuation. The two most significant changes of Seoul are the urban heat island effect and the heatwave. The average daily temperature in summer has enormously risen so far, and so is the number of days with the heatwave. Seoul has its natural condition conditions of mountains that cover 60.75 mi² out of 233.68 mi² with rare developed land the plain left and a network of riverside parks along the Han River. It also has the urban condition of public transportation composed of the public shared system of bicycle, bus, and subway, which has 10 lines, 331 stations, hourly passenger traffic of 18,000, and also is transferable to bus freely. Also, its megastructure shows increasing multi-purpose complex buildings that are often connected to metro stations and underground spaces. The current discourse in terms of these climate change impacts are the street amenities including the shading canopies at crosswalk and cooling fog systems and the wind path plan in the planning progress currently. Their limitations are, however, that there is still lack of the comprehensive approach to the spatial framework on the whole city scale. Thus, this research looks into how the city will look differently with two future suggestions. First, transit-oriented densification will show the adaption for the urban island heat that there will be no need to go out for pedestrians in the case of extreme heat outside with the spatial solution of direct connection of multi-purpose megastructures and buildings to metro stations with underground development and inter-structural connection and also the qualitative solution of incentives for the new public or private development near the metro stations. The hierarchy of connection and incentives can depend on the level of centers in the city. Second, the mitigation for the heatwave that moderates heatwaves in urban areas by natural air conditioning through the wind path, can have the spatial solution of empty or green corridor linkage between mountains and rivers or the qualitative solution of the regulations on the high rises completely blocking the riverside.

Citations

- <https://www.hani.co.kr/arti/science/future/926433.html>
- https://academic.naver.com/article.naver?doc_id=288420351
- <https://www.joongang.co.kr/article/21852169#home>

EQUITABLE COMMUNITY RESILIENCE: THE CASE OF WINTER STORM URI IN TEXAS

Abstract ID: 2070

Individual Paper Submission

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Between February 13-17, 2021, Winter Storm Uri impacted 25 states and more than 150 million Americans leading to extended power and water outages nationwide, with Texas being the hardest hit. The impact of Uri on the state of Texas was far beyond expectation due to the lack of precautionary measures to withstand prolonged freezing temperatures]. While the electric grid in Texas is capable of withstanding extreme humidity and warm weather conditions, it was not designed to endure extended freezing temperatures, leaving administrators with no other options than to implement rolling blackouts. These blackouts were supposed to last less than an hour but ranged anywhere from couple of hours to couple of days across the state. The storm led to several deaths due to carbon monoxide poisoning, a significant halt in the administration of COVID-19 vaccines, and an economic loss that is estimated to be around \$90 billion. Meanwhile, various outlets brought to light the issue of environmental justice, and the human-centric and equity aspects of the impact. While four million people lost electricity and water in Texas the impact was disproportionate in low-income communities of color. Low-income non-white families were reported to bear the brunt of compounding crises in the aftermath of Uri.

Community resilience in the face of natural hazards relies on a community's potential to bounce back. A failure to integrate equity into resilience considerations results in unequal recovery and disproportionate impacts on vulnerable populations, which has long been a concern in the United States. This research investigated aspects of equity related to community resilience in the aftermath of Winter Storm Uri in Texas which led to extended power outages for more than 4 million households. County-level outage/recovery data was analyzed to explore potential significant links between various county attributes and their share of the outages during the recovery/restoration phase. Next, satellite imagery was used to examine data at a much higher geographical resolution focusing on census tracts in the city of Houston. The goal was to use computer vision to extract the extent of outages within census tracts and investigate their linkages to census tracts attributes. Results from various statistical procedures revealed statistically significant negative associations between counties' percentage of non-Hispanic whites and median household income with the ratio of outages. Additionally, at census tract level, variables including percentages of linguistically isolated population and public transport users exhibited positive associations with the group of census tracts that were affected by the outage as detected by computer vision analysis. Informed by these results, engineering solutions such as the applicability of grid modernization technologies, together with distributed and renewable energy resources, when controlled for the region's topographical characteristics, are proposed to enhance equitable power grid resiliency in the face of natural hazards. Additional discussion is on planning policy for critical infrastructure investment.

Citations

- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2012). Social vulnerability to environmental hazards. In *Hazards vulnerability and environmental justice* (pp. 143–160). Routledge.
- Chakraborty, J., Collins, T. W., & Grineski, S. E. (2019). Exploring the environmental justice implications of Hurricane Harvey flooding in Greater Houston, Texas. *American Journal of Public Health*, 109(2), 244–250.
- Peacock, W. G., Van Zandt, S., Zhang, Y., & Highfield, W. E. (2014). Inequities in long-term housing recovery after disasters. *Journal of the American Planning Association*, 80(4), 356–371.
- Esmalian, A., Dong, S., Coleman, N., & Mostafavi, A. (2021). Determinants of Risk Disparity Due to Infrastructure Service Losses in Disasters: A Household Service Gap Model. *Risk Analysis*, 41(12), 2336–2355. <https://doi.org/10.1111/risa.13738>
- Bergstrand, K., Mayer, B., Brumback, B., & Zhang, Y. (2015). Assessing the Relationship Between Social Vulnerability and Community Resilience to Hazards. *Social Indicators Research*, 122(2), 391–409. <https://doi.org/10.1007/s11205-014-0698-3>

Key Words: power grid, equitable community resilience, disasters, Winter Storm Uri

URBAN FORM AND RESIDENTIAL WATER CONSUMPTION: ANALYSIS OF CALIFORNIA CITIES

Abstract ID: 1556

Poster

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In the relatively dry Western United States, as much or more water is consumed outdoors (e.g. irrigation for lawns and gardens) than is consumed indoors. How much outdoor space there is to irrigate is directly influenced by city land use policies. In this paper, we explored the degree to which land use and built environment characteristics affect per capita residential water use across 194 California cities.

To investigate this relationship, we performed linear regression analyses comparing residential per capita water use in January and July 2021 with various land use and non-land use characteristics hypothesized to have an impact with water use. Data on water use came from the Pacific Institute's California Urban Water Use Map, which is a compilation of state reported data. Independent variable data came from multiple sources including the American Community Survey, ESRI, weather stations, and original calculations based off property data.

Our analysis revealed the importance of several land use characteristics. In the summer, share of detached houses in a city, share of large lots, and the presence of swimming pools were all significantly associated with increased water use. Presence of detached houses was the second most impactful variable in the model ($\beta = 0.38$), second only to temperature ($\beta = 0.41$), and more important than household size ($\beta = -0.32$). Share of large lots ($\beta = 0.19$) was a stronger predictor than precipitation ($\beta = -0.13$).

In the cooler and wetter winter, there was less variation between cities in water use. As a result, all explanatory variables had less influence on water use than in the summer. However, detached houses still significantly impacted water use, and was the single strongest predictor in the model ($\beta = 0.39$).

These results have clear implications for planning practice as planning policies directly influence the share of detached houses in a city and lot size. To save water, cities could legalize more attached housing, eliminate minimum lot size requirements (and perhaps institute maximum lot size requirements), and reduce setback requirements that also enforce large yards. Additionally, California could locate more of its housing growth in Mediterranean climate areas, which had significantly lower water use, versus semi-arid and desert areas.

Citations

- Stoker, P., & Rothfeder, R. (2014). Drivers of urban water use. *Sustainable Cities and Society*, 12, 1-8. doi:10.1016/j.scs.2014.03.002
- Mitchell, D., Hanak, E., Baerenklau, K., Escrivá-Bou, A., McCann, H., Perez-Urdiales, M., & Schwabe, K. (2017). Building Drought Resilience in California's Cities and Suburbs. San Francisco: Public Policy Institute of California.
- Gage, E., & Cooper, D. J. (2015). The Influence of Land Cover, Vertical Structure, and Socioeconomic Factors on Outdoor Water Use in a Western US City. *Water Resources Management*, 29, 3877-3890. doi:10.1007/s11269-015-1034-7

Key Words: water use, urban form, lot size, sustainability

VULNERABILITY OF MIAMI-DADE COUNTY, FLORIDA TO IMPACTS OF CLIMATE CHANGE (SEA-LEVEL RISE AND REPETITIVE FLOODING)

Abstract ID: 1665

Poster

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Over the last 40 years, the United States has sustained 273 weather and climate disasters with overall costs exceeding \$1.7 trillion. In addition to these more extreme events, flood damages from repetitive non-extreme flooding and sea-level rise are also expected to increase both in frequency and severity with climate change. Therefore, identifying and measuring the vulnerability of communities to climate change is crucial for long-term risk management and planning.

Vulnerability indices are used increasingly by researchers and practitioners because of their ability to reflect multidimensional data with reduced complexity (Rufat et al., 2019). However, a lot remains unknown about the accuracy and validity of these indices (Gall, 2013). For example, most current vulnerability indices have limited power to explain flooding exposure, damage, and post-disaster assistance when validated using outcome variables (Rufat et al., 2019; Tate, 2012). Additionally, much of the social vulnerability index literature focuses on extreme weather events like severe storms and hurricanes.

While taking a different approach, this study proposes to test the validity of individual components of vulnerability and an aggregate index at a spatial scale more relevant to local planning and decision making (blocks groups). This study focuses on Miami-Dade County, Florida, as a high-value region particularly vulnerable to climate change and coastal flooding. The research uses information on areas prone to repetitive flooding and losses to validate the individual vulnerability components and the aggregate index.

The analysis proceeds in three steps. 1) identification and mapping of individual vulnerability components at the block group level, 2) cluster analysis, and 3) validation of the individual vulnerability components and the aggregate vulnerability index. First, the main contributing factors of vulnerability were identified through a literature review (Cutter, 2003) and consolidated using Principal Component Analysis (PCA). The primary data source is the 2016 ACS and the 2010 decennial census. After examining variable distributions and assessing multicollinearity, data on 33 variables reflecting demographic, housing, and neighborhood characteristics were used for these analyses. The seven components extracted from PCA explained 70.6 % of the variance. Next, the component scores (regression) were generated and mapped for each block group. Second, we implement K-means clustering to identify clusters of vulnerable populations based on the vulnerability components identified from the PCA. We find that block groups scoring high on population density and smaller housing size, older housing with less vehicular access, and low on personal resources are situated in areas prone to sea-level rise in Miami springs, downtown Miami, and other block groups along the Miami River.

The next step in the analysis will be to validate the individual vulnerability components and the aggregate vulnerability index. We will use the information on exposure (sea-level rise and repetitive flooding spots), and post-flooding assistance (repetitive flood loss data) to understand the distribution of vulnerability in Miami-Dade county. Vulnerability components and indices validated using SLR and repetitive flooding data will be crucial for decision-making in communities like Miami-Dade facing the threats of climate change.

Citations

- Rufat, S., Tate, E., Emrich, C. T., & Antolini, F. (2019). How valid are social vulnerability models?. *Annals of the American Association of Geographers*, 109(4), 1131-1153.
- Gall, M. (2013). From social vulnerability to resilience: measuring progress toward disaster risk reduction. *Unu-Ehs*.
- Cutter, S. L., Boruff, B. J., & Shirley, W. L. (2003). Social vulnerability to environmental hazards. *Social science quarterly*, 84(2), 242-261.
- Bukvic, A., Rohat, G., Apotsos, A., & de Sherbinin, A. (2020). A systematic review of coastal vulnerability mapping. *Sustainability*, 12(7), 2822.
- Tate, E. (2012). Social vulnerability indices: a comparative assessment using uncertainty and sensitivity analysis. *Natural Hazards*, 63(2), 325-347.

Key Words: Vulnerability index, Validation, Repetitive flooding, Sea-level rise

CLIMATE SCIENCE AND GOVERNMENT CAPACITY: HOW SEA LEVEL RISE SCIENCE VARIES BY MUNICIPALITY SIZE, WEALTH, AND POLITICS

Abstract ID: 1826

Poster

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National and state agencies are increasingly pushing responsibility for adapting to climate change down the ladder to local governments (Baker et al., 2012). However, local planning agencies' capacity and willingness to adapt to climate change can vary significantly (Fu, 2020; Measham et al., 2011). These variances in adaptive capacity especially matter in sea level rise planning, where expensive adaptation measures intersect with uncertainty over future sea level rise conditions.

This study evaluates questionnaire responses from 40 United States municipalities. It explores the degree to which population size, per capita income, and political leanings affect the quality of sea level rise science used in local planning processes. By understanding how uptake of sea level rise science varies between differing municipalities,

climate planners and strategists may better engage with a diverse array of communities facing uncertain climate futures.

This study was conducted as part of a global study on the quality of sea level rise science used by national, state, and local planning agencies. In our work we gathered empirical data to understand how municipalities in the United States are using sea-level rise science. We used an online questionnaire to gather data from 40 municipalities. We then designed a new numerical scoring system based on the presence of six key measures of sea level rise science, which we applied to the municipalities' responses. This produced a measure of the rigor of municipalities' sea level rise science which we evaluated for relationships to the municipalities' population sizes, per capita income, and political leanings.

Preliminary results suggest two insights into the variations in quality of sea level rise science between municipalities.

First, the quality of sea level rise science appears to shift slightly with political leanings. We found a small but significant positive correlation between the percent of Democratic voters at the county level and the quality of sea level rise science for municipalities in those counties. Likewise, there is a small but significant negative correlation for percent of Republican voters. While political climate is not the primary driver, it does seem to influence the quality of sea level rise science that municipalities use. This suggests that Democratic-leaning municipalities will generally show greater adaptive capacity in a wider range of potential climate futures than Republican-leaning municipalities.

Second, contrary to initial expectations, population size does not appear to correlate with quality of sea level rise science used in municipal planning. One possible explanation is that smaller municipalities appear to rely heavily on the existing science done by larger communities in their regions, as well as state and national datasets that provide place-specific analysis at the local scale. This makes networking between municipalities an important factor for planning. This also indicates that large-scale planning entities play an important role in local-scale climate adaptation even when they are not directly involved.

Citations

- Baker, I., Peterson, A., Brown, G., & McAlpine, C. (2012). Local government response to the impacts of climate change: An evaluation of local climate adaptation plans. *Landscape and Urban Planning*, 107(2), 127–136. <https://doi.org/10.1016/J.LANDURBPLAN.2012.05.009>
- Fu, X. (2020). Measuring local sea-level rise adaptation and adaptive capacity: A national survey in the United States. *Cities*, 102, 102717. <https://doi.org/10.1016/j.cities.2020.102717>
- Measham, T. G., Preston, B. L., Smith, T. F., Brooke, C., Gorddard, R., Withycombe, G., & Morrison, C. (2011). Adapting to climate change through local municipal planning: Barriers and challenges. *Mitigation and Adaptation Strategies for Global Change*, 16(8), 889–909. <https://doi.org/10.1007/s11027-011-9301-2>

Key Words: climate change, coastal management, knowledge systems, resilience, community resources

HOW RESILIENCE PLANNING THREATENS POOR AND VULNERABLE COMMUNITIES: A CASE STUDY OF NEW BERN, NORTH CAROLINA U.S.

Abstract ID: 1898

Poster

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Cities are increasingly adopting resilience plans (Meerow et al. 2019). Resilience plans focused on flood hazard mitigation utilize solutions that span structural and natural infrastructure investments, changes in land use regulations, and relocation efforts. These solutions, however, can produce unjust outcomes for historically marginalized and underrepresented communities (Anguelovski et al. 2016). As flood hazards become more frequent and intense with climate changes, both the risks and the impacts of inappropriate resilience planning increase (Berke et al. 2019). As a result, poor and vulnerable communities, already burdened by inequitable exposure to flood hazards from past planning injustices, will see disproportionate negative impacts from resilience policies, unless planning efforts across sectors integrate their other goals, like economic development and equity inspired investments, to also address flood risk reduction.

Low income, minority, and immigrant communities have been historically underrepresented and marginalized in planning processes. Although these procedural inequities persist, recent planning efforts seek to remediate distributional inequities that were caused by historically unjust practices. These efforts often call for structural and economic investments in vulnerable communities that can unintentionally contribute to the resilience and equity planning paradox. For example, costly investments in vulnerable communities may simultaneously increase the community's risk of losses in future flood events and perpetuate existing trends of disproportionate flood hazard loss

and recovery burdens (Burby 2006).

In this project I use a case study approach to examine how a lack of integration of resilience and equity policies across planning efforts represent a new form of injustice for flood prone poor and vulnerable communities. I use New Bern, North Carolina as my case study city as it is a southern city in the United States that experiences riverine and coastal flooding hazards, has a long tradition of planning, and a history of racial discrimination. Additionally, current planning efforts in New Bern have produced a network of plans that include a hazard mitigation plan, multiple neighborhood revitalization plans, a comprehensive land use plan, and a recent resilience plan, making a study such as this one timely.

To examine how New Bern's historical planning practices have contributed to present day inequalities in flood exposure, I use an archival analysis of local historical maps to identify how planning practices have produced the current spatial pattern of social demographics and flood exposure in New Bern. Part of this analysis includes an evaluation of historical documents from the area which help interpret how past planning policies and priorities helped shape the current landscape. I use these historical analyses as context for evaluating the resilience and equity outcomes of current planning efforts in New Bern. To investigate if the policies within the current network of plans exacerbate flood injustices in New Bern, I use the Plan Integration for Resilience Scorecard (PIRS) methodology to spatially analyze where, and for whom, plan policies are integrating to promote resilience to flood hazards in the city (Berke et al. 2015).

The combination of these methods reveals that policies promoting flood resilience in New Bern are concentrated within the 100-year flood hazard area and in neighborhoods with higher median household incomes and proportions of white residents. Areas just outside of the 100-year flood hazard area, particularly those flooded during Hurricane Florence in 2018, show less robust integration of policies for flood resilience and in some areas have policies that will contribute to increased risk of losses in future flood events. The results of this New Bern case study present an example of the resilience and equity planning paradox and underscore the need for increased integration across planning sectors to avoid creating new forms of injustices through resilience planning efforts.

Citations

- Anguelovski, Isabelle, Linda Shi, Eric Chu, Daniel Gallagher, Kian Goh, Zachary Lamb, Kara Reeve, and Hannah Teicher. 2016. "Equity Impacts of Urban Land Use Planning for Climate Adaptation: Critical Perspectives from the Global North and South." *Journal of Planning Education and Research* 36 (3): 333–48. <https://doi.org/10.1177/0739456X16645166>.
- Berke, Philip, Galen Newman, Jaekyung Lee, Tabitha Combs, Carl Kolosna, and David Salvesen. 2015. "Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard." *Journal of the American Planning Association* 81 (4): 287–302. <https://doi.org/10.1080/01944363.2015.1093954>.
- Berke, Philip, Siyu Yu, Matt Malecha, and John Cooper. 2019. "Plans That Disrupt Development: Equity Policies and Social Vulnerability in Six Coastal Cities." *Journal of Planning Education and Research* 00 (0): 1–16. <https://doi.org/10.1177/0739456X19861144>.
- Burby, Raymond J. 2006. "Hurricane Katrina and the Paradoxes of Government Disaster Policy: Bringing About Wise Governmental Decisions for Hazardous Areas." *ANNALS of the American Academy of Political and Social Science* 604 (March): 171–91. <https://doi.org/10.1177/0002716205284676>.
- Meerow, Sara, Pani Pajouhesh, and Thaddeus R. Miller. 2019. "Social Equity in Urban Resilience Planning." *Local Environment* 24 (9): 193–80. <https://doi.org/10.1080/13549839.2019.1645103>.

Key Words: Resilience, Equity, Flood Hazards

TEMPORAL AND SPATIAL VARIATION PATTERNS OF URBAN HEAT ISLAND AND AIR QUALITY IN FIVE MAJOR CANADIAN CITIES

Abstract ID: 1958

Poster

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The proportion of the world's urban population has reached 55%, and it is expected to increase to 68% within 30 years (United Nations, 2018). Rapid urbanization is a key contributor to greenhouse gases (GHG) emissions and air pollution. Massive emissions of GHGs are leading to global warming and change in climate (IPCC, 2014). Large-scale urbanization is also increasing the temperature inside urban areas leading to the urban heat island (UHI) (Zhou et al., 2014). In addition, Crutzen (2004) pointed out that the UHI effect exacerbated the emission of air pollutants. People who are exposed to high concentrations of air pollutants for a long time will suffer from various diseases (Chen et al.,

2011). Therefore, the characteristics and processes of UHI and air pollution are worthy of an in-depth study. Since UHI and air pollution can affect human health and wellbeing, energy wastage, regional planning and climate, studying the temporal and spatial evolution of UHI and air pollution is of great significance to regional, national, and even global climate change. However, no one has studied the coupling relationship between UHI and air quality in Canada. Thus, this study aims to analyze the temporal and spatial patterns of UHI and air quality in five major Canadian cities in 2020 and their interrelationships to fill this gap.

This study selected five major Canadian cities, including Toronto, Montreal, Vancouver, Edmonton and Calgary, as case studies. Based on MODIS land use/cover data, we extracted the built-up area of each city, and created the buffer zone with a radius of 5km which is determined as the suburb, as well as the land use maps of each city. Then we utilized MODIS surface temperature data to calculate the day and night urban heat island intensity of each city in the four seasons in 2020 to obtain the temporal and spatial variation patterns of the UHI in each city. Besides, we used the daily average PM_{2.5} data of National Air Pollution Surveillance (NAPS) program to obtain the time trends of air quality, and use the air quality and air pollutants data of the ground monitoring station on the PurpleAir website to obtain the spatial distribution of air pollutants in these five cities through spatial interpolation. At the same time, the UHI and air quality of different land cover types were analyzed. Finally, we will compare the spatial distribution of urban heat islands with the spatial distribution of air pollutants in each city to find out whether there is any relationship between UHI and Air Quality in these cities, as well as determine whether these five major Canadian cities follow the same spatial-temporal relationship.

This study can provide ideas for the improvement of the urban ecological environment and the sustainable development of the city, and provide certain reference significance for urban planners and urban ecological environmental researchers.

Citations

- Adopted, I. P. C. C. (2014). Climate change 2014 synthesis report. IPCC: Geneva, Switzerland.
- Chen, R., Pan, G., Zhang, Y., Xu, Q., Zeng, G., Xu, X., ... & Kan, H. (2011). Ambient carbon monoxide and daily mortality in three Chinese cities: the China Air Pollution and Health Effects Study (CAPES). *Science of the total environment*, 409(23), 4923-4928. <https://doi.org/10.1016/j.scitotenv.2011.08.029>
- Crutzen, P. J., 2004: New directions: The growing urban heat and pollution island effect—Impact on chemistry and climate. *Atmos. Environ.*, 38, 3539–3540.
- United Nations. (2018). 2018 Revision of World Urbanization Prospects. <https://www.un.org/development/desa/publications/2018-revision-of-world-urbanization-prospects>.
- Zhou, D., Zhao, S., Liu, S., Zhang, L., & Zhu, C. (2014). Surface urban heat island in China's 32 major cities: Spatial patterns and drivers. *Remote sensing of environment*, 152, 51-61. <https://doi.org/10.1016/j.rse.2014.05.017>

Key Words: UHI, Air Quality, spatial-temporal variation, Canada cities

PARK SECTOR REDLINING: EXAMINING THE IMPACTS OF PARK SECTOR FINANCING ON GREENSPACE EQUITY IN HOUSTON, TEXAS.

Abstract ID: 2022

Poster

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In Houston, Texas, new parks and greenspace development are funded through fees in lieu of land dedication (impact assessment or "linkage" fees) equivalent to \$700 per dwelling unit, limited by nexus to 21 park sectors. ArcMap was used to overlay Mean Normalized Differential Vegetation Index (NDVI) data derived from Landsat ETM+ satellite imagery, Houston's parks inventory, 1930s Home Owners Loan Corporation (HOLC) mortgage redlining boundaries, Houston's park sector boundaries, and collected linkage fees in Houston's Parks Dedication Fund. Our GIS analysis found a high degree of correlation between park sector boundaries, which determine the collection of fees-in-lieu of park dedication from developers, and the 1930s race-based security ratings of the Home Owners' Loan Corporation. Sectors 15 (Third Ward), 11 (East End), and 17 (Near Northside/Fifth Ward), which were heavily redlined by HOLC as "hazardous" and "declining" neighborhoods and remain predominantly Hispanic and African-American, each have around \$100,000-\$200,000 available for new park acquisition, while the predominantly white areas on the west side of Houston rated as "desirable" and "best" by HOLC each have \$1 million or more in their park dedication funds, even though they already contain the bulk of Houston's greenspace. Sector 14, which encompasses River Oaks, Montrose, Midtown, Upper Kirby, and Rice Military, has over \$6 million available for new park acquisition, even though it already contains Memorial Park Conservancy and Buffalo Bayou Park, Houston's largest expanse of park space. Additional analysis is currently underway to understand interaction between urban heat island effect, tree canopy, and Houston's park sector financing of greenspace expansion. Data show a 17.1°F difference in

temperature across Houston/Harris County at the same time of day. Furthermore, Houston has a discrepancy of about 14% between tree canopy cover in the wealthiest and the most impoverished neighborhoods; and a 16% difference between communities with the highest share of white residents compared to those with the highest share of residents who are people of color. We will conduct simulation and scenario analysis of decreasing land surface temperature across Houston through tree canopy expansion. Ultimately, we hope this research will help planners and policymakers to understand the funding redistribution required in each park sector to offset urban heat island effect in an equitable manner; understand how park sector funding affects the balance of burdens and benefits in environmental justice communities; expand tree planting interventions throughout Houston; and reform Houston's park sector financing scheme. This research will also have application to other cities who fund parks and greenspace expansion through defined park sectors and/or linkage fee assessments.

Citations

- Smiley, K. T., Sharma, T., Steinberg, A., Hodges-Copple, S., Jacobson, E., & Matveeva, L. (2016). More inclusive parks planning: Park quality and preferences for park access and amenities. *Environmental Justice*, 9(1), 1-7.
- Nicholls, S. (2001). Measuring the accessibility and equity of public parks: A case study using GIS. *Managing leisure*, 6(4), 201-219.
- Wolch, J., Wilson, J. P., & Fehrenbach, J. (2005). Parks and park funding in Los Angeles: An equity-mapping analysis. *Urban geography*, 26(1), 4-35.

Key Words: Parks, Greenspace, Equity, Redlining, Tree Canopy

Track 5 – Gender & Diversity in Planning

Track 5 Pre-Organized Session Summaries and Abstracts for the Sessions

CREATING PLACE: QUEER, TRANS, AND GENDER EXPANSIVE UNDERSTANDINGS OF URBAN SPACE

Pre-Organized Session 76 - Summary

Session Includes 1545, 1546, 1548

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Even though Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex (LGBTQI+) individuals and communities can be found throughout the United States and the world, their everyday experiences are largely absent from planning practice and planning theory. To create a more inclusive planning field, it is vital for academics and practitioners to develop a deeper understanding of queer, trans, and gender expansive spaces and places. Drawing from a diverse range of fields including queer theory, critical geography, social psychology, mobility justice, feminist studies, and transfeminism, the papers included in this session advance planning's engagement with both gender and queerness. This work provides a foundation for understanding what a queer, trans, and gender expansive urban environment is and how we might bring such a vision into the work of planners. In an effort to be perfectly queer, this session brings LGBTQIA+ communities and theories related to queerness into the center and reimagines mobilities, aging, safe spaces, inclusive cities, and the possibilities of planning itself.

Objectives:

- Develop a deeper understanding of queer, trans, and gender expansive theories and practices within urban planning
- Expand knowledge on spaces and places serving the LGBTQI+ communities

TRANS FEMINIST PERSPECTIVES ON CITIES

Abstract ID: 1545

Abstract within Pre-Organized Session 76

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In the past several years people who identify as transgender are increasingly in the crosshairs of critics from the right as well as some radical presumably left-leaning feminists. At the same time there is a proliferation of gender non-conforming (GNC) identities that fall roughly under the trans umbrella (Doan 2019, Doan and Johnston 2022). Multiple state legislatures within the United States have already or are considering passing legislation to limit the ability of trans youth to participate in sports, receive gender-affirming health care (cf. the attempt in Texas to prosecute parents for child abuse who support their trans children's need to transition), and even to be discussed openly in schools. Prior attempts to regulate trans use of bathrooms has failed legislatively and in the courts (Cofield and Doan 2021), and these most recent efforts similarly politicize and weaponize non-conforming identities.

Similarly, there is an of these anti-trans policies on the far left from radical feminists reviving trans exclusionary rhetoric from the 1990s. This resistance may reflect their deep-seated unease that visibility of trans issues may have sidelined still unresolved women's issues (equal pay, abortion rights, etc) and threatened vitally important women's spaces by the "invasion" of trans and GNC (Stryker and Bettcher, 2016). Furthermore, because many trans and GNC people have been subjected to discrimination over correct pronouns and criticisms about gender identity, some individuals within this population have developed a fierce and self-protective radar that causes them to try to silence incorrect pronouns, unflattering terminology, and critiques of their very identity. This has in turn lead to claims of censorship by trans exclusionary radical feminists (TERFs) who feel deeply threatened by the very existence of people who destabilize the gender binary.

Because of these attacks from the left and the right, it is not clear whether the attempt to plan for safe spaces for trans and gender non-conforming people can survive, much less thrive. In general, cities have been safer and more inclusive spaces for a variety of sexual and gender non-conforming people. However, the current push by state legislatures to pass sweeping bills that pre-empt local ordinances, threatens these protections. Will there be a pushback similar to the widespread condemnation that forced the rescinding of North Carolina's 2016 bathroom bill (NC-2) or is there a real pendulum swing against queer people that threatens to undermine decades of social

acceptance. This paper reviews the ways that these politics complicate the possibilities for creating safe spaces in cities for the trans community.

This paper will provide a review of these debates and examine transfeminist perspectives on the urban. The paper will reflect on what this means for planning and urban policy. To that end the paper will consider the following questions:

What is the nature of the relationship between feminist and transgender work in urban studies?

How does transfeminist urban research confront persistent material and power imbalances in the circuits of academic knowledge production, including academic feminism and feminist urban studies?

Citations

- Rachael Cofield and Petra Doan. 2021. Toilets and the Public Imagination: Planning for Safe and Inclusive Spaces. In Banu Gökarike, Michael Hawkins, Christopher Neubert, & Sara Smith (Eds.), *Feminist Geography Unbound: Intimacy, Territory, and Embodied Power*. West Virginia University Press.
- Petra Doan. 2019. To Count or Not to Count: Queering Measurement and the Transgender Community. In Matt Brim, & Amin Ghaziani (Eds.), *Imagining Queer Methods*. NYU Press.
- Petra Doan and Lynda Johnston. (Eds.). 2022. *Rethinking transgender identities: Reflections from across the globe*. London: Routledge.
- Susan Stryker and Talia Bettcher. 2016. Introduction Trans/Feminisms, *Transgender Studies Quarterly*, 3 (1-2): 4-14

Key Words: LGBTQ, transgender, transfeminism, urban policy, safe spaces

QUEERS IN THE CITY: DELHI SINCE THE REPEAL OF SECTION 377

Abstract ID: 1546

Abstract within Pre-Organized Session 76

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After India's independence from Britain in 1947, the country maintained much of the colonial legal code. This included Section 377, which criminalized "unnatural sex" as a punishable offense with up to 10 years of imprisonment; the law was codified in 1861 and modeled after Britain's 16th century Buggery Act, in turn based on interpretation of the Judeo-Christian Old Testament. Sexual minorities in post-colonial India have been marginalized, with limited access to jobs, services and opportunities, and subject to public humiliation. Scholars argue that much of this discrimination is rooted in the colonial practice of criminalizing non-conforming sexualities and gender identities, as pre-colonial India had carved spaces for varied sexualities and gender expressions. This colonial marginalization was most severe for the Hijras—a blanket term covering eunuchs, intersex, asexual, transsexual and sometime even gay persons—categorizing them as "criminal tribes" and a threat to colonial morality and political authority. This is especially ironic since Hijras have traditionally held a special place in Hinduism for their loyalty towards Hindu gods and with traditionally recognized powers of blessings and curses.

After seven decades, and multiple legal twists and turns, the Supreme Court of India finally ruled in 2018 that the application of Section 377 to consensual homosexual sex between adults was unconstitutional. More recently, Hijras have gained some protections through the Transgender Persons (Protection of Rights) Act, 2019 so that they have guaranteed access to education and livelihoods. All these developments have led to greater visibility of queer folk in India, especially in large cities.

This visibility has in fact been growing for well over a decade now. Many cities have since 2009 been hosting Pride festivities. Queer folk have been using various online location-based apps to not just find romantic and sexual partners, but also to organize social events and activism. Bollywood has been increasingly churning out queer-themed cinema, bringing wide-spread visibility. Delhi and other major metros now have a small number of queer-friendly eateries and bars (in addition to long-standing gay cruising spots), and some host weekly queer events and gatherings on certain week nights. Most of these spaces, however, are in practice limited to primarily the upper classes and caste, and specifically to educated, cis-gendered, gay men, whose various forms of privilege allow them to afford the venues, take on the social and financial risks of being "out", and shield them from discrimination.

This work relies on archival and field ethnography to understand how queerness has been shaped in the urban Indian context since colonial times up to the present-day, with a particular focus on Delhi, as the capital city. In somewhere as dense and teeming as Delhi, every use of public space is a highly visible and often fraught process. This is especially true in this time of highly divergent politics, with a right-wing Hindu nationalist government in power at the national level but a center-left reformist party in Delhi proper. Urban battle lines are being etched, as claim to public spaces and their "appropriate" use are being contested. Ultimately as some spaces open up for a certain class of queers,

others that have served a much larger community of more economically and socially marginal queers are taken away. This work documents these changes and their impacts on the many people and communities within the broad umbrella of "queer". While the particulars here are of great importance, the main story mimics so many other aspects of urban Indian society: to become a truly inclusive city, Delhi will need to find a way to accommodate the needs and aspirations of all city inhabitants and not just the elite that it continues to prioritize.

Citations

- Hinchy, J. (2019). *Governing gender and sexuality in colonial India: The Hijra, c.1850-1900*. Cambridge University Press.
- Macmillan, P., Vanita, R., & Kidwai, S. (2000). *Same-Sex Love in India: Readings from Literature and History*. Palgrave Macmillan US.
- Mitra, D. (2020). *Indian sex life: Sexuality and the colonial origins of modern social thought*. University Press.
- Sircar, O., & Jain, D. (2017). *New intimacies, old desires: Law, culture and queer politics in neoliberal times*. Zubaan.
- Tonini, M. (2018). *Circumscribed Recognition: Creating a space for young queer people in Delhi*. In *Routledge Handbook of Queer Development Studies*.

Key Words: Queer, Delhi, Inclusive city

LOCATING LESBIAN LIVES: AGING-IN-(QUEER)-PLACE

Abstract ID: 1548

Abstract within Pre-Organized Session 76

TURESKY, Marisa [University of Southern California] turesky@usc.edu, presenting author

Although there has been a recent increase in attention to urban planning for aging populations in the United States (Warner, Homsey, & Morken, 2017; Kan, Forsyth, & Molinsky, 2020), the scholarship scarcely notes differences in aging based on gender and sexual orientation. This paper adds a queer feminist lens to frameworks of aging-in-place by centering older lesbians' attachments to the home as they navigate loneliness, one of the strongest predictors for poor health and quality of life among older LGBTQ+ adults (Fredriksen-Goldsen et al., 2019).

With thirty oral histories of lesbians aged 65 to 85 in Los Angeles County, I examine the different ways in which older lesbians use homes to develop identity and community in the face of ageism, homophobia, and patriarchy. In particular, I ask: does aging shape lesbians' homemaking practices? Does lesbian identity affect aging-in-place? Is a house a sanctuary, an escape, or a trap for lesbians as they age? This paper contributes to urban planning research that advances the liberation of a heterogeneous LGBTQ+ community. These spatial oral histories demonstrate ways for neighborhoods and cities to enhance services and the built environment in ways that would improve the safety and health of the LGBTQ+ community.

Citations

- Fredriksen Goldsen, K., Kim, H.-J., Jung, H., & Goldsen, J. (2019). The Evolution of Aging With Pride—National Health, Aging, and Sexuality/Gender Study: Illuminating the Iridescent Life Course of LGBTQ Adults Aged 80 Years and Older in the United States. *The International Journal of Aging and Human Development*, 88(4), 380–404.
- Kan, H. Y., A. Forsyth, and J. Molinsky. 2020. "Measuring the Built Environment for Aging in Place: A Review of Neighborhood Audit Tools." *Journal of Planning Literature*, 35 (2).
- Warner, M., G. Homsy, and L. J. Morken. 2017. "Planning for Aging in Place: Stimulating A Market and Government Response." *Journal of Planning Education and Research* 37 (1): 29–42.

Key Words: Queer space, Aging in place, Gender, Loneliness, Health

PLANNING THE 'INCLUSIVE CITY' IN THE FACE OF SOCIO-LEGAL EXCLUSIONS

Pre-Organized Session 80 - Summary

Session Includes 1593, 1594, 1595, 1596, 1597

SOTOMAYOR, Luisa [York University] sotomay@yorku.ca, organizer

While planners increasingly recognize the need to engage with many ‘stakeholders’ and include the voices of historically marginalized publics, people facing socio-legal exclusions –such as non-citizens, migrant workers, and others with precarious status, as well as Indigenous people– continue to be excluded from planning processes and adequate policy formulation. These populations participate in place-making, shape the urban fabric, and build regional economies. Yet, they do so in the shadows (Sandoval, 2013). They are also increasingly confronted with state tactics of illegalization, expulsion and border enforcement that produce geographies of death in what De Genova and Roy (2020) describe as racialized regimes of citizenship. This session will examine the way various planning actors negotiate the ambiguous relationships and processes of marginalization of populations facing socio-legal exclusions. It will present research that theoretically and empirically opens the process of engagement incapacitating various voices, histories, and positionalities, and those exposing the socio-legal firewalls causing exclusion and insecurity.

Objectives:

- To reflect in the way socio-legal exclusions marginalized undocumented, Indigenous and unhoused people form the planning process

NON-STATUS CITIZENSHIP AND THE PROMISES OF THE INCLUSIVE CITY

Abstract ID: 1593

Abstract within Pre-Organized Session 80

GILBERT, Liette [York University] gilbertl@yorku.ca, presenting author

Proud of its diversity and progressive politics, the City of Toronto adopted a ‘sanctuary policy’ in 2013. However, municipal governments and urban planners have yet to fully address the ‘local turn’ of migration politics at a time when they are increasingly confronted with anti-austerity, anti-racism, and anti-colonial movements. Urban planners have been complicit in neglecting particular populations through the production of uneven urban environments.

This paper presents an examination of how non-status citizenship is negotiated in municipal governance and planning politics in Toronto – in the current moment of COVID-19 pandemic and anti-racism mobilizations. Despite their precarious presence in the city, non-status citizens are subjected to everyday socio-legal violence invested in historical and current state/planning practices of dispossession and racial capitalism. Our inquiry aims to recenter the limits and possibilities of creating an urban fabric where different sectors and service providers within and beyond the state may resist “irregularity” to “circumvent non-juridical status” and where illegalized migrants are increasingly included and afforded housing, labor, and mobility justice (beyond limited sanctuary policy). Using content analysis of official documents and undocumented testimonies, our research seeks to put forward a collective project of planning for migrant solidarity that activate new openings to disrupt exclusionary discontinuities in access to substantive citizenship, services and infrastructure.

Citations

- Darling, Jonathan and Harald Bauder. 2019. *Sanctuary Cities and Urban Struggles: Rescaling Migration, Citizenship, and Rights*. Manchester University Press.
- De Genova, Nicholas and Ananya Roy. 2020. Practices of Illegalisation. *Antipode*. 52(2): 352-364.
- De Graauw, Els. 2020. City Government Activists and the Rights of Undocumented Immigrants: Fostering Urban Citizenship within the Confines of US Federalism. *Antipode* 0(0): 1-20.
- Holston, James. 2019. Metropolitan Rebellions and the Politics of Commoning the City. *Anthropological Theory*, 19(1): 120-142.
- City of Toronto. 2017. Refugees, Refugee Claimants and Undocumented Torontonians – Recent Trends and Issues. CD19.9 Report for Action. Social Development, Finance and Administration. March 30. Accessed from <https://www.toronto.ca/legdocs/mmis/2017/cd/bgrd/backgroundfile-102520.pdf>

Key Words: non-status, citizenship, equity planning, migration politics, Toronto

BARRIERS VS BRIDGES: ACCESS TO POST-SECONDARY EDUCATION FOR NON-STATUS MIGRANTS

Abstract ID: 1594

Abstract within Pre-Organized Session 80

HUDSON, Graham [Toronto Metropolitan University] graham.hudson@ryerson.ca, presenting author

This paper examines the right to post-secondary education for non-status migrants in Ontario, and the legal, policy, and administrative means of bypassing barriers to access. The paper outlines the legal and moral basis for access to

higher education. Using the examples of York University and X University, it then examines how universities can provide access. Attention is paid to: a) legal questions concerning privacy of student records, b) issues of campus security, and c) relationships to larger "sanctuary" initiatives at local levels. Attention is also paid to the place of sanctuary campuses in the broader context of federalism, with specific reference to existing international student framework agreements between federal and provincial governments

Citations

- Marietta Armanyous & Graham Hudson "Barriers vs bridges Undocumented immigrants access to post-secondary education in Ontario" RCIS Working Paper No. 2019/5.
https://www.ryerson.ca/content/dam/centre-for-immigration-and-settlement/RCIS/publications/workingpapers/2019_5_Armanyous_Marietta_Hudson_Graham_Barriers_vs_bridges_Undocumented_immigrants_access_to_post-secondary_education_in_Ontario.pdf December 2019
- illegas, F. J. (2018). 'Don't ask, don't tell': Examining the illegalization of undocumented students in Toronto, Canada. *British Journal of Sociology of Education*, 39(8), 1111-1125
- Dayna Gonzales "Expanding Access to Post-Secondary Education with Precarious Legal Status: A Toronto Metropolitan University Case Study" A Master's Major Research Paper - Unpublished.
- Aberman, T., & Ackerman, P. (2017). Isn't the right to an education a human right? In Sara Carpenter & Shahrzad Mojab (Eds.), *Youth as/in crisis: Young people, Public Policy, and the Politics of Learning* (pp. 127-144). Sense.
- Villegas, P. E., & Aberman, T. (2019). A double punishment: The context of postsecondary access for racialized precarious status migrant students in Toronto, Canada. *Refuge: Canada's Journal on Refugees*, 35(1), 72-82.

Key Words: sanctuary campus, right to education, privacy, security, non-status migrant

BARRED FROM PUBLIC SPACE: ENCAMPMENT EVICTIONS AND URBAN CITIZENSHIP IN TORONTO

Abstract ID: 1595

Abstract within Pre-Organized Session 80

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In the summer of 2021, Toronto police executed paramilitary-style raids, brutalizing the most vulnerated residents in the city - encampment residents - and their supporters in three downtown public parks. During these evictions, state violence manifested in police brutality, using force against encampment residents and their supporters and intimidation tactics including kettling. In October 2021, the state issued Suspension Notices to perceived encampment leaders that barr them from public space and public services. In light of these new eviction tactics, the questions of urban citizenship, the meanings of the "public" in public space, and the processes by which individuals are made illegal are acutely pertinent.

This paper examines contemporary processes of illegalization against unhoused dwellers through eviction notices aimed at formally barring unhoused residents from public spaces. Building on recent socio-legal research on urban exclusion, homelessness, citizenship, and dispossession, it examines how encampment residents in cities of the Global North are subject to arbitrary, changing, and exceptional legal processes of exclusion. Such processes raise questions about urban rights and differentiated citizenships. Reading the North from the South (Parnell & Robinson, 2012), the paper utilizes an informality approach to illuminate state violence against dispossessed publics and state-society tensions around homelessness and encampments in public parks of so-called global cities.

This paper is informed by a discourse analysis of media articles and municipal press briefings where narratives relating to binary thinking, ambiguity of responsibility, aesthetics, and "good" governance are identified. This is complemented with qualitative data from walking interviews with housing justice activists and community lawyers, conducted in the spring of 2022.

Findings from the discourse analysis expose the ambiguity of law. State violence - in the forms of police brutality, encampment evictions, the barring of people from public space, and the invisibilization of unhoused people are evidence of this ambiguity. These ambiguities can also be seen in the un-enforceability of the suspension notice, the mobilization of a provincial act to intimidate encampment residents, and the criminalization of activities that occur outside what the state permits as legitimate. The paper concludes that encampment evictions are a form of legally imposed spatial exclusion, or what Graziani et al (2021) refer to as *banishment*. Encampment residents and other unhoused people are also subject to *migrantization* - where the state enforces the colonial logics of borders, illegalization, and disposability to other historically marginalized groups to subordinate and dispossess them (De Genova and Roy, 2020).

Findings additionally indicate that aesthetics and in/visibility influence the illegalization of encampment residents and other unhoused people. The aesthetics of encampments, their location in the downtown core, the waste they produce, and the “risks” they allegedly pose to housed people contribute to the framing of encampments and their residents as outside of the public order. Their classification as *other* contrasts with propertied residents of the city, who are seen as the public whose access to and behaviour in public space is permissible and legitimate. Overall, this paper offers new insights on processes of illegalization of unhoused dwellers from public space in cities of the Global North.

Citations

- De Genova, N., and Roy, A. (2020). Practices of Illegalisation. *Antipode*, 52(2), 352-364
- Graziani, T., Montano, J., Roy, A., & Stephens, P. (2021). Property, Personhood, and Police: The Making of Race and Space through Nuisance Law. *Antipode*, anti.12792. <https://doi.org/10.1111/anti.12792>
- Parnell, S., & Robinson, J. (2012). (Re)theorizing Cities from the Global South: Looking Beyond Neoliberalism. *Urban Geography*, 33(4), 593–617. <https://doi.org/10.2747/0272-3638.33.4.593>
- Roy, A. (2009b). Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization. *Planning Theory*, 8(1), 76–87. <https://doi.org/10.1177/1473095208099299>
- Valverde, M. (2011). Seeing Like a City: The Dialectic of Modern and Premodern Ways of Seeing in Urban Governance: Seeing Like a City. *Law & Society Review*, 45(2), 277–312. <https://doi.org/10.1111/j.1540-5893.2011.00441.x>

Key Words: urban citizenship, illegalization, encampment evictions, informality, urban governance

TREATY RELATIONS IN TORONTO: EXCAVATING INDIGENOUS URBAN HISTORY THROUGH A COLLABORATIVE APPROACH

Abstract ID: 1596

Abstract within Pre-Organized Session 80

MARTHA, Stiegman [York Univeristy] stiegman@yorku.ca, presenting author

Despite recent calls to decolonize planning and develop meaningful partnerships with Indigenous nations and communities, and the recent changes to the planning policy statement in Ontario, little progress has been made in the field. Many planners don’t know where to start. There is confusion over jurisdictional responsibilities with respect to the Crown’s Duty to Consult. At the very least, planners need to consult with Indigenous peoples; many call for planners to go much farther, by decolonizing their practice and developing meaningful relationships with Indigenous partners grounded in respect and understanding of Indigenous ways of knowing and being, and in-line with the Indigenous governance traditions and structures these relationships must seek to honor. As Bob Goulais of Niibisin Consulting puts it, must learn to “plan at the speed of trust” (Goulais 2021).

Located on the territories of the Huron-Wendat, Haudenosaunee Confederacy, the Anishinaabek Nation and the Mississaugas of the Credit First Nation, the Indigenous history and present of Toronto is rich and complex. Today Toronto is home to a diverse Indigenous population that numbers between 70,000 and 100,000 (Carter 2021). There is an intricate and fraught history of treaty agreements (between Indigenous nations, and between Indigenous nations and the Crown) that allowed for settlement, and eventually the city to be here. From the Toronto’s name, which derives from the Mohawk Tkaronto, to the Black Oak Savannas of High Park, the last remnants of a more than 4000-year-old ecosystem tended by Indigenous stewards; the Indigenous foundations of this place are everywhere – but only to the trained eye. Most planners, like the majority of Torontonians, are ignorant of this history and of the many ways Toronto’s vibrant Indigenous communities are asserting their relationships with the Lands and waters of this place and are shaping the City in the present. While learning about this history is far from enough to establish right relations, it is an important first step in working towards (re)conciliation in the present.

Talking Treaties is a project of Jumblies Theatre + Arts, a Toronto-based community arts organization that collaborates with professional artists, scholars, and diverse communities to make art with, for, and about those communities. Led by Mohawk artist Ange Loft, Associate Artistic Director of Jumblies, Talking Treaties has twinned scholarly and community-based historical research with many forms of Indigenous-led arts-based engagement to explore the history and present of Treaty relations in the city. Stiegman has been collaborating with Talking Treaties since 2016. Our latest project is *A Treaty Guide for Torontonians*, a 200-page artful examination of the complex intercultural roots of treaty relationships in the place we now call Toronto. From the Two Row Wampum and Dish with One Spoon, to the Toronto Purchase, we trace the history of treaty making between Indigenous nations, and between Indigenous nations and the Crown. *A Treaty Guide* inspires an active approach to treaty awareness through embodied learning tools. Land-based activities, theatrical exercises, drawing and writing prompts help readers find their own relationship to this history, and to take up their treaty responsibilities in the present.

In this session I will provide a brief overview of the network of treaty relationships relevant to the Toronto area explored in A Treaty Guide; describe the transdisciplinary collaborative research methodology used to produce the manuscript; and lead the audience in a sample of the arts-based activities presented in the guide in order to consider the ways that community arts-based research can deepen an understanding of Indigenous-settler relations, our treaty responsibilities to each other and to the Land; and to consider the ways such approaches might help planners to decolonize their practice.

Citations

- Truth and Reconciliation Commission of Canada. (2015). Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada. Truth and Reconciliation Commission of Canada.
- Goulais, B. (2021, November 23). Treaty relations, Planning and Indigenous Consultation at the City of Toronto [Webinar]. Polishing the Chain: Treaty relations in Toronto. Faculty of Environmental & Urban Change annual Research Seminar Series.
- Garneau, D. (2016). In D. Robinson & K. Martin (Eds.), *Arts of Engagement: Taking Aesthetic Action in and Beyond the Truth and Reconciliation Commission of Canada*. Wilfrid Laurier University Press. <http://ebookcentral.proquest.com/lib/york/detail.action?docID=4737059>

Key Words: Treaty relations, treaty history, arts-based research

REPRESENTATIONAL DISTORTIONS: PLANNING IM/POSSIBILITIES FOR LGBTQ+ STUDENTS IN SUBURBAN MUMBAI

Abstract ID: 1597

Abstract within Pre-Organized Session 80

ARUN-PINA, Chan [York University] chan.arunnarendra@gmail.com, presenting author

“[A]way from home” and their respective parental family units, “free-floating” university students by their very transient nature are governed by local communities firmly grounded in cis-heteronormative family values. Landowners, in particular, as key community stakeholders in the provision of local student housing assume authority over students’ bodily and spatial relations and occupations. Within the in/formal landlord-tenant agreements, the former often concerns themselves with students’ promiscuity, whereas students themselves often perceive their student life as that of an ascetic because of rigorous academic demands and meager financial means. This is the formulation of tenacious “representational distortions” that a student-image confronts, resulting in especially acute experiences of socio-legal exclusion and spatial unbelonging particular to LGBTQ+ student-tenants in contemporary urban city-regions in India. Thus, this paper deliberates the disjuncts and the congruences between various urban stakeholders involved in shaping the multi-scalar landscape of off-campus student rental accommodation provision surrounding the Deonar campus of the Tata Institute of Social Sciences (TISS) in suburban Mumbai, the wealthiest and the most expensive megacity to live in India. This paper begins with a critical queer review of the urban scholarship on “studentification” which in its current form, is wanting a sexualities framework, is trans-negative, and altogether overlooks LGBTQ+ students’ perspectives and voices. It then looks at the role of various urban stakeholders in distorting the student-image and thereby contributing to, what I argue are, two mutually feeding phenomena—‘studentphobia’ and ‘familification’. In queering the urban scholarship on studentification, this paper counter-positions the term ‘familification’ as multiple ways in which various urban actors that feel threatened by difference in ways of living based on one’s identities (at the intersection of gender, sexual, ethnic, religion, region, and caste), work together to ‘restore’ residential landscapes to a homogenized “spatial purity and temporal order...and its carefully organized family activities” (Bain et al., 2018, p. 11). Here, ‘studentphobia’, specifically in the urban case of India, is witnessed as inseparable from and as a subset of queer/transphobia. The paper then lands the discussion in three empirical “spatial stories” (Certeau, 1984) of unbelonging accentuating 13 LGBTQ+ students’ perspectives, voices and lived experiences from the Deonar Campus of Tata Institute of Social Sciences (TISS) University, Mumbai. These three spatial stories, respectively, follow the three stages of: (i) securing home, or more colloquially known among students as “house-hunting”; (ii) making home; and (iii) leaving home. Distilled from these three stages are six facets of a student-image as they emerge from LGBTQ+ students’ encounters with various formal-legal and informal-social actors at multiple spatial scales—the anti-national terrorist, the future citizen-leader, the activist, the student-client, the promiscuous non-adult, and the ascetic. This paper works to “understand the force of representations” at the intersection of “symbolic and material violences of representations [in] their often hidden but always powerful capacity to harm and damage” (Anderson, 2019, pp. 1120–21) historically marginalized and precarious urban populations. What socio-spatial implications do these representational typologies have on LGBTQ+ students’ access to and lived experiences of housing, particularly, when one or more of these facets work to discredit and invisibilize them, while others alienate and hypervisibilize? Various queer urban scholars in duly noting “barriers that prevent the integration of queer concerns” in planning (Broto, 2021), have challenged the disciplinary “silence on queer issues” (Broto, 2021; Doan, 2011; Vallerand, 2020) and worked towards inclusive planning approaches. Subsequently, the paper concludes by considering how urban planning in a sub/urban context where unaffordable housing market is

routinely compounded with trans/homonegative environment, might enable a sense of belonging for LGBTQ+ university students in India.

Citations

- Broto, V. C. (2021). Queering participatory planning. *Environment and Urbanization*, 33(2), 310–329. <https://doi.org/10.1177/09562478211019377>
- Doan, P. L. (2011). *Queerying planning: Challenging heteronormative assumptions and reframing planning practice*. Ashgate Pub.
- Vallerand, O. (2020). Beyond design education: Queering pedagogies of space. In J. Berry, T. Moore, N. Kalms, & G. Bawden (Eds.), *Contentious cities: Design and the gendered production of space* (pp. 194–203). Routledge.
- Fincher, R. & Iveson, K. (2008). *Planning and diversity in the city: Redistribution, recognition and encounter*. Palgrave Macmillan.
- Kinton, C., Smith, D. P., Harrison, J., & Culora, A. (2018). New frontiers of studentification: The commodification of student housing as a driver of urban change. *The Geographical Journal*, 184(3), 242–254. <https://doi.org/10.1111/geoj.12263>

Key Words: Studentphobia, Familification, Student Housing, LGBTQ+ Students, India

Track 5 Roundtables

PLACE MATTERS: COMPARING PLACE-BASED APPROACHES TO UNDERSTANDING IMMIGRANT INTEGRATION EXPERIENCES IN CANADIAN AND U.S. SECOND/THIRD-TIER CITIES

Abstract ID: 1221

Roundtable

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AGRAWAL, Sandeep [University of Alberta] sagrawal@ualberta.ca, participant
DEAN, Jennifer [University of Waterloo] jennifer.dean@uwaterloo.ca, participant
HARWOOD, Stacy [University of Utah] harwood@arch.utah.edu, participant
LIU, Cathy [Georgia State University] cylui@gsu.edu, participant
FENNIRI, Stephanie Rivera [University of Pennsylvania] sfenniri@design.upenn.edu, participant

Research on immigrant settlement primarily focuses on traditional gateways in Canada and the United States. There is a dearth of comparative study on smaller cities, or second/third-tier, non-traditional gateway cities, which prevents a pluralistic understanding of the integration challenges different from traditional gateways, the new racial, ethnic, and cultural dynamics emerging in smaller urban, suburban, and rural communities, and the welcoming approaches adopted under different national, regional, and local contexts.

As two major global migration destinations, Canada and the United States share geographical proximity and rich immigration histories. Under these geopolitical contexts, the literature has revealed common tendencies towards the localization of immigration policies and place-based approaches in both countries, such as the federally funded Local Immigration Partnerships in Canada and the grassroots Welcoming Cities and Counties initiatives in the US (Harwood, 2022; Huang & Liu, 2018; Zhuang, 2022).

Despite these shared experiences, the two nations greatly differ from each other in terms of the role of the state in the admission and selection of immigrants, jurisdictional power at the state, provincial, and municipal levels, and how local policies and politics have shaped the destination places. Considering the similar but distinct policy and political contexts between the two countries, it has become imperative to develop a thorough understanding of how local immigration policies and place-based approaches have shaped immigrants' settlement and integration experiences.

Scholars on this roundtable have conducted recent research on the role of planning and local governments in the Welcoming Cities movement (Harwood, 2022; Huang & Liu, 2018), refugee resettlement process (Agrawal & Sangapala, 2020), health promotion of rural migrants (Patel et al., 2019), and in facilitating place-making and spatial integration beyond settlement services (Zhuang, 2022). Drawing upon these studies, the roundtable session will present a comparative perspective that is important but often neglected in the literature and will enhance our understanding of the varied places and local initiatives that help shape immigrants' lived experiences in smaller communities, and vice versa. Specifically, it will address the following questions:

1. How do second/third-tier cities develop place-based approaches that address local contexts and needs?
2. What is the role of municipalities and planners in these place-based approaches?
3. Based on immigrants' lived experiences, what are the contributing factors to welcoming and inclusive integration in second/third-tier cities?

The roundtable discussions will help develop a renewed understanding of how immigrants shape their communities in smaller cities and their relationships with place, and how these differ based on ethnic community, city size (and rural/urban/suburban contexts), municipal planning mechanisms, availability of services, provision of infrastructure, and local history and context.

Citations

- Agrawal, S., Sangapala, P. (2020). Does Community Size Matter in the Settlement Process? The Experience of Syrian Refugees in Lethbridge in Alberta, Canada. *Int. Migration & Integration*.
- Harwood, S. A. (2021). Welcoming Immigrants: An Agenda for Municipal Planning. *Journal of the American Planning Association*. Accepted.
- Huang, X., & Liu, C. Y. (2018). Welcoming cities: Immigration policy at the local government level. *Urban Affairs Review*, 54(1), 3–32. doi:10.1177/1078087416678999
- Patel, A., Dean, J., Edge, S., Wilson, K. & E. Ghassemi. (2019). Double Burden of rural migration in Canada? Considering the social determinants of health related to immigrant settlement outside the Cosmopolis. *International Journal of Environmental Research and Public Health*, 16(5); 678-698.
- Zhuang, Z. C. (2022). A Place-based Approach to Understanding Immigrant Retention and Integration in Canadian and American Second-Tier Cities: A Scoping Literature Review. Manuscript under review.

Key Words: place-based, immigrant integration, second/third-tier cities, Canada, the United States

URBAN PLANNING FOR QUEER JUSTICE: QUEERING PLACE AND TIME IN THE INCLUSIVE CITY

Abstract ID: 1640

Roundtable

GUY, Tam [University of California, Los Angeles] tamjguy@ucla.edu, moderator
 TURESKY, Marisa [University of Southern California] turesky@usc.edu, participant
 BUTLER, Tamika [University of California, Los Angeles] tamikabutler@ucla.edu, participant
 DOAN, Petra [Florida State University] pdoan@fsu.edu, participant
 ATALAY, Ozlem [Florida State University] oa17b@my.fsu.edu, participant
 GELBARD, Sarah [McGill University] sarah@gelbard.ca, participant
 STEVENSON, Dylan [Cornell University] dms547@cornell.edu, participant

Though awareness and acceptance of LGBTQIA+ people have grown since the turn of the century, people of sexual and gender minorities have been surviving and thriving in cities long before the latest spate of backlash and inclusion debates. Anti-LGBTQIA+ legislation restricts, and even criminalizes, LGBTQIA+ people's participation in their local services and built environments (ACLU, 2022). In other contexts, the increased visibility and public participation of LGBTQIA+ people realized through complex interaction between activism and local urban politics reveals critical tension between inclusion and normative responsibilities (Podmore, 2015). With genealogies in urban and criminal justice discourse, as well as women of color writing (Moraga & Anzaldúa, 1981), scholars of queer justice (Bacchetta, El-Tayeb, and Haritaworn, 2015; Haritaworn, Moussa, Ware, & Rodriguez, 2018) seek to develop paradigms for dismantling institutional, interpersonal, and market-driven violence.

In this roundtable, we will examine LGBTQIA+ people's claims for justice in cities over time as they inform urban planning's concepts and conversations of inclusive cities. Topics will include racial and colonial capitalisms, telling histories; and modeling, mapping, and sharing spaces. This roundtable highlights case studies from cities in Canada, the United States, and Turkey to explore a queer planning justice through intersectional claims for justice in an inclusive city. We will discuss how the built environment is a site of power and resistance, mobilizing theory in service of healing, community-building, and healing.

Queer experiences of the city elucidate gaps in the field's knowledge of what cities have been, are, and could be. By centering those who have crossed and expanded social boundaries of acceptable genders, this panel asks: who deserves to take up space in what ways? Who deserves to be remembered? How might we better understand how to radically transform fields within urban planning and our roles in moving cities toward inclusive urbanism?

Citations

- ACLU. (2022). "Legislation affecting LGBTQ rights across the country." Retrieved from <https://www.aclu.org/legislation-affecting-lgbtq-rights-across-country>.
- Bacchetta, P. El-Tayeb, F. and Haritaworn, J. (2015). "Queer of Colour Formations and Translocal Spaces in Europe." *Environment and Planning D: Society and Space* 33 (5): 769–78. <https://doi.org/10.1177/0263775815608712>.
- Haritaworn, J., Moussa, G., Ware, S., & Rodriguez, G. (Eds.). (2019). *Queering Urban Justice*. Toronto: University of Toronto Press. doi: <https://doi.org/10.3138/9781487518646>
- Moraga, C. & Anzaldúa, G. E. (Eds.) (1981). *This Bridge Called My Back: Writings by Radical Women of Colour*. Watertown, MA. Persephone Press.
- Podmore, Julie. (2015). *From contestation to incorporation: LGBT activism and urban politics in Montréal. In Queer mobilizations: social movement activism and canadian public policy*. UBC Press.

Key Words: Gender, LGBTQIA, Justice, Historiographies, Inclusion

DIVERSITY, EQUITY, AND INCLUSION: WHAT HAVE WE LEARNED? A ROUNDTABLE DISCUSSION FROM A MINORITY FACULTY PERSPECTIVE

Abstract ID: 2058

Roundtable

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 GARCIA ZAMBRANA, Ivis [University of Utah] ivis.garcia@utah.edu, participant
 FONZA, Annalise [Cal Poly Ponom] ahfonza@cpp.edu, participant
 DIAZ MONTEMAYOR, Gabriel [University of Arkansas] gabriel.d@uark.edu, participant
 VAZQUEZ CASTILLO, Maria Teresa [Universidad Autonoma de Ciudad Juarez] ma.tere.vazquez@gmail.com, participant

Most universities are now openly embracing Diversity, Equity, and Inclusion (DEI) policies. While this applies not only to college campuses but also to professional and academic organizations, this panel will more purposefully focus on universities. In most campuses around the US an office, many times at the vice-presidential level, has been created to directly address ways to diversify faculty and students. Many of these positions are being held by minority faculties who are working in white majority campuses.

This roundtable discussion proposal is led by faculty who have actively participated on "Diversity Councils" or on Diversity Committees" or on any other equivalent office dealing with DEI. The objective of this session is to critically discuss such DEI efforts, their effect on the faculty involved, how are they being implemented, and their impact on their stated objectives. In other words, are they actually creating a more diverse, equitable, and inclusive campus? Specifically, we propose our conversation to address these questions:

- 1) How are DEI policies actually being implemented specifically on planning and design programs? Are they "working"? Are they ingrained in the actual curriculum, research, and engagement/service? Are they institutionalized? For example, have they had any impact on the way recruiting is happening? Or the value assigned to publications vs activism among faculty? Are courses in the planning and design curriculum that directly address systemic racism?
- 2) Who are the faculty engaged on DEI initiatives, policies and actual implementation? Have their service being valued and their voice heard? As most of them are minorities, are they "tokenized"? Is their involvement on DEI making them even more isolated?
- 3) Are DEI offices and policies part of a more integrated university vision of inclusion and equity? Or are they isolated with disconnected initiatives at the university level? Are the upper administration policies actually addressing systemic racism, colonialism, oppression?

Based on the actual experience of those faculty leading this roundtable, this proposal aims at sharing our experiences and learning from each other. We realized that our experiences are systematically similar, our obstacles are sometimes identical, and our progress many times is minimal. We invite all faculty to listen and share their experiences from within and from outside DEI efforts. Are DEI policies relevant? Are DEI strategies impacting faculty? Are they actually promoting diverse, inclusive campuses?

Citations

- "Diversity, equity, and inclusion practices in arts and cultural planning", Amanda J. Ashley, Carolyn G. Loh, Karen Bubb & Leslie Durham, *Journal of Urban Affairs*, 2021

- Where Are We Going? Where Have We Been?: The Climate for Diversity within Urban Planning Educational Programs, Journal of Planning Education and Research, 2018
- A Guide to Designing Engaged Learning, Courses in Community Planning, Nisha Botchwey and Karen Umemoto, Journal of Planning Education and Research 2018

Key Words: Diversity, Equity and Inclusion is Planning, Planning Education

Track 5 Individual Paper Submissions

EQU(AL)ITY AND WELFARE: A POLICY PARADOX VIEW OF PUBLIC HOUSING

Abstract ID: 1064

Individual Paper Submission

ROVERSI, Elena [Auburn University] e.roversi@auburn.edu, presenting author

Starting by exploring how the content and forms of equity and welfare are multiple and shifting over time and space, the research question addressed in this paper is what are the implications of policymakers' choices when giving voice to one claim and one perspective of an issue through public housing policies. Making public housing policies implies deciding over a series of challenging and sometimes contradictory values, going from fundamental rights to the real estate market. Together with other segregationist provisions, public housing policies supported the creation of slums to isolate the African American population of many cities and prevented them from being eligible for public subsidies. It also fostered the creation of a distorted image of housing beneficiaries, often portrayed as lazy, opportunistic, and unskilled, exemplified in the image of the racialized and sexualized "welfare queen".

The method I use in this analysis centers on the concepts of equity and welfare as policy goals analyzed through Deborah Stone's Policy Paradox framework. I examine how four policies (the 1937 and 1949 Housing Acts, the 1968 Fair Housing Act, and Section 8 of the Amendment to the Housing Act of 1974) define who should receive the benefits (equity) and what those benefits represent for them and their community (welfare). I did a literature review of the creation of the Acts and the implications of their provisions adopting Stone's perspective, housing, and planning literature. I used documentation from the development of the Housing Acts and analyzed secondary demographic data on the populations that were subject to, or excluded from, the benefits.

This research finds that a unique and agreed definition of equality is often too ambitious and policymakers are challenged when trying to translate this into practice. Since the initial stages of public housing, this policy sector aimed at providing accommodations for those who could afford decent ones but was never aimed at supporting the poorest segments of the population, such as individuals without revenue. Having income as a requirement for accessing housing subsidies appears to be a paradox, especially for a policy that supplies essential goods to the lowest-income households. It also means rewarding the merit of the beneficiaries, but how can policymakers define, measure, and quantify the abstract concept of merit and translate it into an objective and universal policy? Also, individual effort plays a minor role in how income is distributed, on the possibility of having job opportunities or a regular salary. The definition of welfare is also problematic, particularly since policymakers are generally more interested in satisfying instrumental needs rather than intrinsic ones, leading to less attention to what Amartya Sen defines as the most important strategy for policymakers: assessing people's capabilities to pursue whatever they choose. Relative welfare between the white middle-class household and the black one is brought as an example of the challenges in operationalizing welfare for everyone.

The major implication of this research is that fluctuating social norms and political priorities are in a continuous struggle for their affirmation and concepts like equity and welfare have multiple and valid meanings. Planners cannot avoid operating in a context of perpetual redefinition of perspectives and political claims, but they need to pay more attention to their normative and contextual roots and integrate them into their responses to communities' and minorities' necessities. The "rationality project" is an inappropriate model to understand the dynamics of the polis and address its challenges: there is no absolute right way to frame equity and welfare, but there is a multitude of valid ways for planners to address the needs and quest for equity and wellbeing.

Citations

- Marcuse, Peter. 1995. "Interpreting Public Housing History." Journal of Architectural and Planning Research 12 (3): 240–58.
- Owens, Ann. 2017. "How Do People-Based Housing Policies Affect People (and Place)?" Housing Policy Debate 27 (2): 266–81.

- Rothstein, Richard. 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America*. Illustrated edition. New York?; London: Liveright.
- Stone, Deborah. 2012. *Policy Paradox: The Art of Political Decision Making*. 3rd ed. New York: W.W. Norton & Co.
- Yinger, John. 1999. "Sustaining the Fair Housing Act." *Cityscape* 4 (3): 93–106.

Key Words: Equality, Public Housing, Policy Paradox, Planning Theory, Public Policy

STUDY THE UNDERSTUDIED POPULATION'S TRAVEL BEHAVIORS WITH A NON-TRADITIONAL APPROACH

Abstract ID: 1125

Individual Paper Submission

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If living in most of cities and places in the United States, it is not easy to get around if you do not have a car. That is because the current transportation systems were planned and built primarily for automobiles decades ago, which has resulted in auto dependency. Not only has auto dependency resulted in many of today's most vexing problems— such as urban sprawl, highway congestion, physical inactivity and obesity, air pollution and climate change, etc., but it also leads to an unequal society. For instance, people who cannot afford or choose not to own cars find public transportation unreliable and inconvenient. People who have to, or prefer to, walk or bike find streets unsafe and unfriendly for pedestrians and cyclists. Evidence shows that certain groups of population tend to walk, bike, or take public transit more than others. These people's travel behaviors and travel needs are understudied in the current literature (TRD, 2022).

When quantifying the relationship between built environment and travel behavior, certain statistical models are always employed. For instance, linear regression models are employed when the objectives are continuous variables, such as vehicle miles traveled (VMT), ridership, etc. In fact, the wide usage of statistical models by individual empirical studies has made the meta-analysis studies possible (Aston et al., 2021; Ewing & Cervero, 2017). All statistical models have an assumption – there is a linear (or can be transferred to linear) relationship between the dependent variable (travel behavior) and independent variables (built environmental variables). However, that assumption is not always met or that is not always the case, as planners know in practice. Planners know that population density has to reach a certain point to make walking to destinations possible. Planners also know that a transit network has to reach certain coverage to attract people taking transit. It is also a known issue in research as threshold effects for years (Galster, 2018). Due to the limitation of data and methodology, this issue has not been addressed until recently. In the last a few years, with the availability of machine-learning techniques, scholars have started to explore this issue by unitizing random forest, gradient boosting decision tree (GBDT), and other machine-learning based models. It is still in an early stage and there are many unanswered questions (Zhao et al., 2020).

To summarize, the issues on travel behavior research in the current literature are: 1) understudying certain population groups' travel behaviors and travel needs; and 2) assuming the relationships between built environment variables and travel behaviors are linear.

This study aims to address these issues by focusing on minority population in U.S. and employing machine-learning techniques based on a 36-region database (over 1,000,000 trips generated by 100,000 households across 36 metropolitan areas in U.S.). This dataset also provides precise household locations and trip ends. Household locations are critical for studying walking and biking behaviors since their travel distances are relatively short, and allow the creation of network buffers around each household location to capture spatial heterogeneity of neighborhoods. As active and more affordable transportation modes, walking and biking are also more likely used certain racial groups and low-income population.

This research will have scientific significance and contributions to the current literature in two ways: 1) explore nonlinear relationship between travel behavior and built environment; 2) investigate the travel behaviors and transportation needs of understudied population – minorities. It will provide better understandings of this understudied population group's transportation needs and advance current knowledge on the effects of built environments on travel behavior. It will help promote an equitable, healthy, and environmentally friendly built environment and society.

Citations

- Transportation Research Part D (TRD). (2022). Call for papers: Special issue on Transportation and Environmental Racism. Retrieved from <https://www.journals.elsevier.com/transportation-research-part-d-transport-and-environment/call-for-papers/call-for-papers-special-issue-on-transportation-and-environmental-racism>.

- Aston, L., Currie, G., Delbosc, A., Kamruzzaman, M., & Teller, D. (2021). Exploring built environment impacts on transit use—an updated meta-analysis. *Transport reviews*, 41(1), 73-96.
- Ewing, R., & Cervero, R. (2017). “Does compact development make people drive less?” the answer is yes. *Journal of the American Planning Association*, 83(1), 19-25.
- Galster, G. C. (2018). Nonlinear and threshold effects related to neighborhood: Implications for planning and policy. *Journal of Planning Literature*, 33(4), 492-508.
- Zhao, X., Yan, X., Yu, A., & Van Hentenryck, P. (2020). Prediction and behavioral analysis of travel mode choice: A comparison of machine learning and logit models. *Travel behaviour and society*, 20, 22-35

Key Words: travel behavior, minority, built environment, nonlinear, machine learning

THE PROMISE AND PERIL OF RACIAL EQUITY PLANNING

Abstract ID: 1180

Individual Paper Submission

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Racial equity planning is an explicit attempt to address racial inequities that have arisen due to discriminatory practices and segregation in the built environment. As such it represents a stark departure from the neoliberal, trickle down approach of recent decades which is assumed that race blind planning practices would serve to benefit all in an equitable way. The aim of this article is to introduce the idea of racial equity planning to a broader audience and to contribute to ongoing discussions of how to address persistent racial inequities in the built environment.

We define racial equity analysis or planning as the use of planning studies that explicitly consider whether there are disparate impacts by race or ethnicity resulting from planning actions. The logic behind racial equity analyses is analogous to that which underlies regulations requiring Environmental Impact Statements (EIS). Just as large-scale projects are required to produce EISs to aid in understanding how the environment will be impacted by development, racial equity analyses will help us understand how large-scale planning projects impact racial equity.

The article begins by briefly describing the exclusionary history of land use planning in the US, the legacy of these practices, and the ongoing need to explicitly address racial inequality. The second part of the article describes the case of the Gowanus Neighborhood Plan, a mixed income development in Brooklyn, New York, and the racial equity report that was crafted as a way of examining how the project impacted racial equity. In the last section of the article, the promise, peril and limitations of racial equity planning are discussed.

Citations

- Bullard, R. D. 1990. *Dumping in Dixie: race, class, and environmental quality*. Boulder: Westview Press.
- Hirt, S. A. 2015. *Zoned in the USA: The Origins and Implications of American Land-Use Regulation*. Ithaca, NY: Cornell University Press.
- Solis, M. (2020) Racial Equity in Planning Organizations. *Journal of the American Planning Association*, 86, 302-303.
- Steil, J. (2022) Antisubordination Planning. *Journal of Planning and Education Research*, 42, 9-18.
- Trounstein, J. 2018. *Segregation by design local politics and inequality in American cities*. New York: Cambridge University Press.

Key Words: Landuse Regulation, Racial Equity

INCLUSIVE FUTURES? A SYSTEMATIC REVIEW OF SOCIAL EQUITY IN SCENARIO PLANNING

Abstract ID: 1188

Individual Paper Submission

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Scenario planning is gaining popularity and its value has become particularly evident during these times of uncertainty arising from the intersection of the pandemic, climate change, and growing social and environmental injustices (Stojanovic et al., 2014; Zapata, 2021). However, there has been little consideration of how scenario planning as a method incorporates social equity considerations. While there is growing scholarship and practical applications of more inclusive and participatory planning processes that use scenarios in their approach (Berbés-Blázquez et al., 2021), it is less clear whether and how scenario planning as a method used in various disciplines and

across fields of study is driven by and/or integrates equity considerations at all.

Therefore, as a first step in this research, we conduct a systematic literature review to address the question; in what ways does scenario planning address social equity? We specifically investigate (1) whether existing scenario approaches address equity proactively, (2) the dimensions of equity that are addressed, and (3) the approaches used to operationalize equity. The literature search yielded 1,416 results based on searches in SCOPUS and the Web of Science core collection. The 1,416 articles were imported into the EPPI-Reviewer systematic review software and screened for inclusion using predetermined criteria (e.g., English-language, peer-reviewed papers applying scenario planning to urban futures). Post-screening, 200 peer-reviewed articles were included in the analysis. The articles were published between 1996 and 2021 across various fields, including transportation engineering, energy engineering, and urban planning. We frame social equity broadly, allowing us to look for equity in scenario planning in the ways that it corrects or exacerbates past injustices, addresses different types and depths of participatory processes, and serves the creation of more equitable futures for historically marginalized populations.

Overall, the review reveals that social equity in scenario planning is generally ignored completely or underemphasized in favour of quantitative and analytical rigour of scenario processes and cost reduction. For example, only 10 percent of the papers explicitly address equity as a goal and/or potential future outcome of scenario planning processes. Another 20 percent embed social equity under the themes of power, values, and stakeholder interest dynamics in scenario processes and as an outcome of participation. However, most of the studies that speak to equity do so in a shallow manner, equating social equity merely to the presence of some degree of participation. Few consider how the unique circumstances of historically marginalized groups predispose them to manipulation in scenario planning processes and disproportionate impacts of scenario outcomes.

We still find potential in scenario planning as a tool for implementing aspirations of “co-production” (Barry & Agyeman, 2020) and in considering multiple plausible futures with different equity outcomes. But we emphasize that the deliberate integration of social equity as a core component of the scenario planning process is needed across fields of study. As more planners and policymakers in general turn to scenario planning for insight during uncertain times, it is not only essential to gain a better understanding of if and how equity is being addressed in these approaches but also to develop guides for meaningful equity consideration in the scenario building process. This applies to planning scholarship and practice but importantly also to other fields of study that planning practice commonly draws on for scenario building such as transportation engineering, construction management, and economics. The findings point to the need for planning academics to look outside their immediate research areas and publication circles to speak more directly to how scenario planning can become more participatory across disciplines and fields of study.

Citations

- Barry, J., & Agyeman, J. (2020). On belonging and becoming in the settler-colonial city: Co-produced futurities, placemaking, and urban planning in the United States. *Journal of Race, Ethnicity and the City*, 1(1–2), 22–41. <https://doi.org/10.1080/26884674.2020.1793703>
- Berbés-Blázquez, M., Grimm, N. B., Cook, E. M., Iwaniec, D. M., Muñoz-Erickson, T. A., Hobbins, V., & Wahl, D. (2021). Assessing Future Resilience, Equity, and Sustainability in Scenario Planning (pp. 113–127). https://doi.org/10.1007/978-3-030-63131-4_8
- Stojanovic, M., Mitkovic, P., & Mitkovic, M. (2014). The scenario method in urban planning. *Facta Universitatis - Series: Architecture and Civil Engineering*, 12(1), 81–95. <https://doi.org/10.2298/fuace1401081s>
- Zapata, M. A. (2021). Planning Just Futures. *Planning Theory & Practice*, 22(4), 613–642. <https://doi.org/10.1080/14649357.2021.1956815>

Key Words: scenario planning, social equity, systematic review, participatory planning, futures

INCIVILITIES AND WOMEN’S FEAR OF SAFETY IN LOW-INCOME PARKS OF MEGACITY KARACHI, PAKISTAN

Abstract ID: 1260

Individual Paper Submission

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Parks/Playgrounds are integral part of community open spaces and provides physical, mental, and social benefits to its visitors. Parks/Playgrounds are also perceived as amenities aim to provide equal access to all its residents with no associated cost burden to its users. In practice, this assumption found to be failing in communities and cities which are segregated through race, SES, and any other means. Research on Parks/Playgrounds is usually based on either spatial (park acreage and park accessibility etc.) and/or non-spatial dimension (park quality, park diversity, PA, and optimal park use etc.). “Park Quality” is considered as a very important non-spatial dimension of parks which recently has been gaining more attention from researchers than any of spatial dimensions.

PA and optimal park use are also important factors of park visitation which associate both with spatial and non-spatial dimensions of parks. Some earlier studies generalize both women participation in PA outdoor and park visitation are considerably suppressed by various reasons such as perception and fear of safety, sexual harassment/assaults, distance to parks/playgrounds and presence of opposite gender. One study refers violence, concerning behavior, lack of maintenance, lack of lighting, and traffic/busy roads as biggest indicators of women perception of safety and safety for park visitation. Whereas, other study found “Incivilities”, including use of alcohol and drugs, gangs/political groups activities, graffiti/tagging and sex related incidences, as major deterrent in park use by general population specially women. “Incivility” has a Latin origin “in Civilis” meaning “not of a citizen”. It describes any social behavior which is disruptive and/or threatening. It includes unacceptable social practices such as littering, dumping of waste near, on or around park, graffiti, vandalism, drunkenness, use of drugs, political groups activities etc. These physical surroundings and/or social behaviors send some signal to park users which clearly deters park use by park visitors especially females.

In case of megacity of global south, Karachi, Pakistan, the overall quality of neighborhood parks is entirely depending on the SES they associate with. A previous survey of 50 parks (from all SES) indicates that parks in low-income neighborhood of Karachi are low quality and low maintenance parks including some of the parks where female visitation was null. A recent survey of 15 neighborhood parks in Karachi city reveals that parks showing signs of “Incivilities” are devoid of female presence. The purpose of this paper is to explore the nature of “Incivility” and its level of impact on female perception of safety and park visitation. We want to examine whether this effect is temporary or permanent by surveying those parks periodically in a month. We also want to analyze whether the female perception of safety is limited to adults or is it also prevailing in female children. This study also focuses on the societal norms and cultural views regarding the role of genders in public open spaces such as parks. This paper root its analysis on both quantitative and qualitative data. This empirical study aims to investigate the non-spatial dimension of parks where incivilities in low-income parks are significantly associated with park use and park visitation by women and girls. Their perception of safety and concerns for safety contribute to suppressed park use which ultimately affect their health, independence of using recreational spaces and confidence in urban spaces mainly parks/playgrounds.

Citations

- Bedimo-Rung, A. L., Mowen, A. J., & Cohen, D. A. (2005). The significance of parks to physical activity and public health: a conceptual model. *American journal of preventive medicine*, 28(2), 159-168.
- Franck, K. A., & Paxson, L. (1989). Women and urban public space. In *Public places and spaces* (pp. 121-146). Springer, Boston, MA.
- Groshong, L., Wilhelm Stanis, S. A., Kaczynski, A. T., & Hipp, J. A. (2020). Attitudes about perceived park safety among residents in low-income and high minority Kansas City, Missouri, neighborhoods. *Environment and Behavior*, 52(6), 639-665.
- Gul, Y., Sultan, Z., & Jokhio, G. A. (2018). The association between the perception of crime and walking in gated and non-gated neighborhoods of Asian developing countries. *Heliyon*, 4(8), e00715.
- Koskela, H. (1997) “Bold Walk and Breakings”: Women’s Spatial Confidence versus Fear of Violence’, *Gender, Place and Culture* 4(3): 301–9.

Key Words: Gender, Incivilities, SES, Perception of Safety/Safety, Parks/Playgrounds

NATURE IS (UN)FREE: HOW RACE SHAPES ACCESS TO URBAN NATURE FOR RACIALISED YOUTH

Abstract ID: 1325

Individual Paper Submission

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The voices of Black and racialised immigrant youth are often absent from the environmentalism discourse in Canada. This needs assessment was undertaken to explore the experiences of these youth in nearby nature and urban forestry (Scott & Tenneti, 2021). Through focus group interviews, the research explored how access to nature is shaped by race, urbanization, and other socio-economic factors for these youth. As the Black and racialised immigrant youth are sharing space on Indigenous land, the assessment also explored how urban nature can be used as bridge between Indigenous people and racialised immigrant youth in the city.

Two significant events occurred which impacted the needs assessment. First, though the research was blindsided by the Covid-19 pandemic, the pandemic itself changed racialised youth’s perception of, and access to urban nature. Second, the research occurred in the context of the police killing of George Floyd and Breonna Taylor, and the racial profiling of Christian Cooper a Black birdwatcher in Central Park, New York. Thus, discussions on racialised youth

experiences in nature, were heightened by the police murders and the subsequent world-wide protests in support of Black Lives Matter, and the racial harassment of Black people in nature spaces.

The study is significant as it disturbs the waters of environmental discussions in Canada – by including the experiences of youth of colour. These youth, like Black people and people of colour, are largely invisible in environmentalism conversations (Finney, 2014). Studies on immigrant youth tend to focus on education, employment and health/mental health challenges they encounter during the settlement process (Shields et al 2018; Long et al 2014). Intersectional analysis on youth, race, and nature engagement other than in a few outdoor recreation studies are limited (Kloek et al, 2015). This study is a bridge between the environmental sector and the lived experiences of racialised youth in nature. Furthermore, the study questions the standard perception that nature is free and accessible to everyone. It underlined that nature is not a neutral space and access to it is entangled with geographies of race and space (McKittrick, 2006).

Citations

- Scott, J. L., & Tenneti, A. (2021). Race and nature in the city. Nature Canada.
- Finney, C. (2014). Black faces, white spaces: Reimagining the relationship of African Americans to the great outdoors. UNC Press Books.
- Kloek, M. E., Buijs, A. E., Boersema, J. J., & Schouten, M. G. (2015). 'Nature lovers', 'Social animals', 'Quiet seekers' and 'Activity lovers': Participation of young adult immigrants and non-immigrants in outdoor recreation in the Netherlands. *Journal of outdoor recreation and tourism*, 12, 47-58.
- Long, J., Hylton, K., & Spracklen, K. (2014). Whiteness, blackness and settlement: Leisure and the integration of new migrants. *Journal of Ethnic and Migration Studies*, 40(11), 1779-1797.
- McKittrick, K. (2006). *Demonic grounds: Black women and the cartographies of struggle*. U of Minnesota Press.

Key Words: urban nature, racialized immigrant youth, black geographies, community engagement, environmental education

CENTERING EQUITY AND JUSTICE IN PARTICIPATORY CLIMATE ACTION PLANNING: DO LOCAL GOVERNMENTS HAVE WHAT IT TAKES?

Abstract ID: 1327

Individual Paper Submission

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Advancing equity and justice in climate action planning presents a considerable challenge for urban governance actors. This paper provides necessary and practical guidance for developing participatory approaches that can help planners avoid perpetuating the dominant knowledge systems and corresponding planning interventions that have brought us to the current state of climate change and social inequity. The paper advances debate about the nature of equitable and just climate action, and encourages us to consider whether local government planning systems are equally capable of advancing progressive climate action and equity and justice goals.

As climate change increasingly causes disruptions to our natural and societal systems, cities are rapidly developing climate action plans as a comprehensive policy mechanism for reducing carbon emissions and adapting to the risks and opportunities posed by climate change. Debates about equity and justice are central to this trend, but clarity is needed about how these concepts are defined and deployed, and whether efforts to integrate equity and justice concerns into local climate action planning lead to better outcomes for marginalized residents.

The current state of municipal climate action planning indicates a discernible trend toward trying to address equity and justice concerns in local government planning systems, but substantive engagement with equity and justice in climate action planning is mainly rhetorical. Cities acknowledge the unequal climate risks faced by vulnerable residents and stress the importance of equity and justice in addressing disparate climate vulnerability, but proposed climate actions rarely direct resources to the people or places identified as vulnerable (Zoll, 2022). There also appears to be a trade-off between achieving long-term viability of municipal climate action agendas, and participatory approaches that grant voice and decision-making power to vulnerable residents (Chu et al., 2016).

At the same time, deliberation on climate change continues to privilege scientific and rational types of knowledge over ways of knowing that tend to be possessed by less powerful communities (Byskov et al., 2021). Scholars emphasize the need to prioritize disadvantaged residents in our responses to climate change, but participatory planning scholarship is much less explicit about the need to prioritize marginalized residents during decision-making processes. Consequently, the voices of people experiencing overlapping, concurrent forms of oppression are largely excluded from climate action planning processes. This oversight results in mismatches between local needs and the policies recommended in climate action plans.

With the shortcomings of current approaches in mind, this paper addresses two key questions: Can we reasonably expect municipal government planning systems to achieve equity and justice goals, and if so, how might we advance these goals in climate action planning? I argue that addressing equity and justice principles in climate action planning requires participatory processes that make specific efforts to center vulnerable residents. To make this argument, I draw on urban justice and participatory planning scholarship to establish a connection between recognition justice and participatory processes that support communication across differences in social position and systems of meaning. I demonstrate that achieving equity and justice in municipal climate action planning beyond the level of rhetoric requires an expansion of the scope of knowledge—and correspondingly, the scope of actors—we consider during participatory processes (Olazabal et al., 2021). This transition—which would begin to address the dissonance between who cities say are vulnerable, and who benefits from climate action planning—requires reflexive practice. Planners must consider how climate change issues are framed and by whom, who participates and how, according to whose terms of reference, and under what structural patterns of advantage and disadvantage (Blue et al., 2019). Reflection of this nature contributes to embedding equity and justice in the collective conscious of planning.

Citations

- Blue, G., Rosol, M., & Fast, V. (2019). Justice as parity of participation: Enhancing Arnstein's ladder through Fraser's justice framework. *Journal of the American Planning Association*, 85(3), 363-376. <https://doi.org/10.1080/01944363.2019.1619476>
- Byskov, M., Hyams, K., Satyal, P., Anguelovski, I., Benjamin, L., Blackburn, S., ... Venn, A. (2021). An agenda for ethics and justice in adaptation to climate change. *Climate and Development*, 13(1), 1–9. <https://doi.org/10.1080/17565529.2019.1700774>
- Chu, E., Anguelovski, I., & Carmin, J. (2016) Inclusive approaches to urban climate adaptation planning and implementation in the Global South. *Climate Policy*, 16(3), 372-392. <https://doi.org/10.1080/14693062.2015.1019822>
- Olazabal, M., Chu, E., Castan Broto, V., Patterson, J. (2021). Subaltern forms of knowledge are required to boost local adaptation. *One Earth*, 4(6), 828-838. <https://doi.org/10.1016/j.oneear.2021.05.006>
- Zoll, D. (2022). We can't address what we don't acknowledge: Confronting racism in adaptation plans. In B. Petersen and H.B. Ducros (Eds.), *Justice in climate action planning* (pp. 3-24). Springer Nature.

Key Words: Climate action planning, Equity, Justice, Participation

MICROPOLITICS IN CO-DESIGN: THE IMPACT OF ABLISM AND OTHER 'HIDDEN' POWER STRUCTURES ON EQUITABLE PARTICIPATION AND OUTCOMES

Abstract ID: 1346

Individual Paper Submission

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The significance of micropolitics or the microlevel practices that influence community based practices in planning has been recognized for decades (Briggs, 1998). Yet practical tools for understanding and potentially intervening in these politics are still needed (Meléndez & Martinez-Cosio, 2019). Micropolitics in planning has been used to refer to the role of culture and art, communication practices, and collective emotions like trust (Tait, 2011). These politics are present in co-design processes and affect their outcomes (Calderon, 2020).

In summer 2021 we conducted a design charette (DC) for the purposes of co-designing an intervention into the accessibility of Work Integrated Learning for Students with Disabilities. We knew in advance that addressing power imbalances and accessibility would be important to this process so we made adjustments to the charette format based in co-design literature and critical disability studies (Stephens et al, under review). Despite our efforts it was clear that power dynamics still influenced the charette process in important ways. We proposed to answer 2 overarching questions 1) Where do we see power relations operating within the co-design process, and what do they look like? 2) How do these power relations affect the co design process and the interventions it generated?

To address these questions our multidisciplinary team conducted a qualitative analysis of the data from the DC from August to Dec 2021, with a focus on understanding power dynamics in the charette. The analysis used the products of the DC, full transcripts of the DC, and observational data gathered by our "Vibes watch"/observational team. We coded the data using a mixed coding approach to account for the known structural hierarchies in the group (student/instructor, disability identifying/non disabled, and professional role) and potential sites of power that were

unexpected. We were broadly led by an intersectional assemblage approach to consider both the flow and fixity of power (Puar, 2012).

Several findings emerged: We noted that ablism (discrimination against people with disabilities) was an identifiable force that led to power imbalances in the co design process. It was significant in that it did seem to impact who's ideas were most centered and received most attention. Ablism was most often structural and took the form of time limits on activities or unspoken cultural preferences for forms of communication, which limited the participation of participants with disabilities among other things. Ablism rarely took the form of explicit discriminatory comments, and in this way this force remained below the surface and was harder to identify/address by participants and facilitators. Ablism was often intertwined with other power dynamics making an intersectional approach necessary.

We also noticed struggles over power happening in the way problems were framed and scoped. Our analysis showed that at times students and professionals framed the problem of access to education quite differently from one another (e.g. the problems within the accommodations process vs the problem with the idea of an accommodations process). The struggle to define a problem within a conversation is a key political moment. The micropolitics present in this struggle included the use of common/dominant discourses, existing structural processes, or unspoken cultural ideas, which could be used to shift the conversation back to a more normative interpretation (e.g. deploying discriminatory ideas that students with disability were a "poor fit" for placements). More effort seemed needed in the deliberative process to reframe a problem in a new way (that might challenge widely accepted ideas) as opposed to maintaining a status quo. This reaffirms the critical role of facilitative leadership, both in pre-consultation to surface different understandings of scope, and in supporting difficult frame shifts if they arise in a collaborative process.

Citations

- Briggs, X. (1998). Doing Democracy up Close: Culture, Power and Communication in Community Building. *Journal of Planning Education and Research*, 18, 1-13.
- Calderon, C. (2020). Unearthing the political: differences, conflicts and power in participatory urban design. *Journal of urban design*, 25(1), 50-64. doi:10.1080/13574809.2019.1677146
- Meléndez, J. W., & Martinez-Cosio, M. (2019). Designing for equitable civic engagement: Participatory design and discourse in contested spaces. *Journal of Civil Society*, 15(1), 18-41. doi:10.1080/17448689.2018.1559471
- Puar, J. K. (2012). "I would rather be a cyborg than a goddess": Becoming-Intersectional in Assemblage Theory. *Philosophia* (Albany, N.Y.), 2(1), 49-66
- Tait, M. (2011). Trust and the Public Interest in the Micropolitics of Planning Practice. *Journal of Planning Education and Research*, 31(2), 157-171. doi:10.1177/0739456X11402628

Key Words: Participation, Co-design, Disability, Power, Micropolitics

AN EVALUATION OF SOCIAL EQUITY AND RACIAL DISPARITIES IN VISION ZERO ACTION PLANS FOR TRANSPORTATION SAFETY IN US CITIES AND REGIONS

Abstract ID: 1451

Individual Paper Submission

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This paper examines the treatment of social equity and racial disparities in Vision Zero Action Plans for transportation safety in US cities and regions. More than 60 cities and regions throughout US have created action plans since 2014 with the goal of eliminating transportation related fatalities and serious injuries (Walljasper 2019). Issues of social equity and racial disparities are particularly important within this genre of strategic plans due to the well-documented disproportionate incidence of traffic fatalities and injuries faced by people of color (National Safety Council, 2021; Governors Highway Safety Association, 2021).

Content analysis of a robust sample of these plans is used to determine how social equity and racial disparities are addressed in different functional areas of the plan (such as analysis, goals, and implementation), as well as specific measures of plan elements targeting communities of color and addressing racial disparities (Loh and Kim; 2021; Vision Zero Network, 2017). Examination of Vision Zero Action Plans for US cities and regions serves as the basis for both identifying current best practices within the field, as well as defining corrective plan-making approaches and policy improvements based on observed strengths and weaknesses of existing plans.

Citations

- Governors Highway Safety Association (2021). *An Analysis of Traffic Fatalities by Race and Ethnicity*. Washington, DC: Author.

- Loh, C. G., & Kim, R. (2021). Are we planning for equity? Equity goals and recommendations in local comprehensive plans. *Journal of the American Planning Association*, 87(2), 181-196.
- National Safety Council (2021). *Equity in Transportation: Best Practices Framework*. Itasca, IL: Author.
- Vision Zero Network (2017). *Equity strategies for practitioners*. San Francisco: Author.
- Walljasper, J. (2019). Mission zero. *Planning*, 85(6): 26-31.

Key Words: racial disparities, strategic planning, Vision Zero, transportation equity, social equity

CYCLING FACILITIES, GENDERED EXPERIENCES AND BICYCLING FREQUENCY AMONG WOMEN

Abstract ID: 1500

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Central theme: Cycling facilities are a widely used transportation policy tool aimed at promoting healthy and sustainable transportation choices. Although cycling facilities have been shown to enable increased cycling in some contexts (Mitra et al., 2021), the impacts of cycling facilities on mitigating gendered barriers to bicycling is unclear. Women constitute only a small proportion of current bicyclists in North America, with little known about how gender construction and the interplay between various aspects of identity may create barriers to cycling (Garrard et al., 2012; Ravensbergen et al., 2019). Within this context, two research questions are addressed in this paper: 1) How do self-identified women's gendered life experiences influence their commute-related bicycling frequency when compared to men? And 2) What is the role of new cycling facilities in modifying these above-mentioned relationships?

Methods: An online household survey (n= 1,492) was conducted in the Greater Toronto Area (GTA), Canada, in summer and fall of 2019, specifically focusing on 10 urban and suburban neighbourhoods. Five of these neighbourhoods had one recently installed cycling facility, while five others did not have any cycling facility. Correlates of women's bicycling frequency were explored using weighted ordinal logistic regression models. In these statistical models, we examined the interaction between gender (women versus other) and four life experiences (living situation, age, employment and trip chaining).

Results: Results indicated a higher likelihood of commute-related bicycling among women who are between the ages 30-44 years, who work part-time, and who have children, in neighbourhoods with a new cycling facility. Younger women are likely to bicycle more frequently (for commuting) in the absence of cycling facilities. We observed no statistical difference in self-reported bicycling frequency between women who work full time and women who work part time, when cycling facilities were not present. Regardless of the presence of cycling facilities, car ownership negatively influences the likelihood of anyone cycling. Those with a higher education (Bachelor degree or higher) were more likely to cycle to commute in the absence of cycling facilities, but the presence of cycling facilities, a respondent's education level was not associated with their commute-related cycling frequency.

Conclusions: Using a feminist geography lens, we argue that the presence of cycling facilities potentially allow some women to minimize the patriarchal barriers they experience when bicycling, including psychological and social expectations around feminine performance, and embodiment and material understanding of their "cycling body" (Hanson, 2010; Ravensbergen et al., 2020). Findings support the policy efforts focused on providing safe bicycle infrastructure for all population groups.

Citations

- Garrard, J., Handy, S., & Dill, J. (2012). Women in cycling. In John Pucher, Ralph Buehler (Eds.), *City cycling*. Cambridge: MIT Press. Pp. 211-234.
- Hanson, S. (2010). Gender and mobility: New approaches for informing sustainability. *Gender, Place & Culture: A Journal of Feminist Geography*, 17(1), 5-23.
- Mitra, R., Khachatryan, A. & Hess, P. M. (2021) Do new urban and suburban cycling facilities encourage more cycling? *Transportation Research Part D: Transport and the Environment*, 97, <https://doi.org/10.1016/j.trd.2021.102915>
- Ravensbergen, L., Buliung, R., & Laliberté, N. (2019). Toward feminist geographies of cycling. *Geography Compass*, 13(7), e12461. <https://doi.org/10.1111/gec3.12461>
- Ravensbergen, L., Buliung, R., & Sersli, S. (2020). Velomobilities of care in a low-cycling city. *Transportation Research Part A: Policy and Practice*, 134, 336-347.

Key Words: Cycling, Gendered mobility, Women, Gender equity, Feminist geography

FINDING COMMON GROUND: INCLUSIVE ENGAGEMENT OF NEWCOMER COMMUNITIES IN LAND USE AND PLANNING DECISION-MAKING PROCESSES IN THE GREATER TORONTO AREA

Abstract ID: 1507

Individual Paper Submission

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Following decades of immigration-centered growth, Toronto is among the fastest growing cities in North America and lays claim to being the most diverse city in the world. In recent years, municipal planners in the Greater Toronto Area (GTA) have endeavored to refine their approach to engaging local communities—especially its newcomer populations—in public consultations that inform the planning decision-making process. However, since the beginning of the COVID-19 pandemic, local governments in the region have had to take greater strides towards infusing their engagement practices with added creativity, particularly in confronting obstacles for the effective inclusion of immigrant communities. Drawing upon interviews eliciting the knowledge and experience of planning practitioners, representatives of locally-based civil society organizations, and migrant community members, this research uses case studies concentrating on land use and planning public participation exercises in selected municipalities in the GTA to determine how municipal decision-making processes are evolving to best accommodate newcomers' strengths and adapt to their particular needs.

While some progress has been made with respect to drawing planners' attention to the realities of managing and embracing diversity, commonly-held notions persist among many practitioners that the public interest should be promoted without consideration for the demands of specific groups (Burayidi, 2015). As it relates to planning *for* and *with* diverse populations, Fincher & Iveson (2008) describe the need for generating 'encounter', the production of spaces and environments that can foster meaningful interactions and cultivate mutual understanding and reciprocity among different segments of society. Key elements in this regard are recognition of the value in developing creative participation techniques that engage *multiple* publics and the careful management of expectations on the potential scope, outcomes, and impact of such processes across and within contributing communities (Nguyen et al., 2015).

As immigrants form an increasingly sizable proportion of the GTA's population, learning how to engage them as co-producers of municipal and community plans not only serves to make the practice of public participation in planning a more inclusive and representative enterprise, but also has broader implications for policies relating to multiculturalism, integration, and citizenship. Planning practitioners in the GTA have taken innovative steps to design more accessible methods of engagement during the COVID-19 pandemic, especially in terms of taking on more of an 'activist' role (Sager, 2012) to advocate for the needs of newcomer communities and convene them in a variety of settings to better capture their voices. In particular, there has been a pronounced flourishing of a sense of 'community'—employed as an action to be performed, rather than as a noun or a phenomenon simply to be studied—in order to allow for the identification of a common purpose and the emergence of more cooperative forms of interaction (Blokland, 2017). Nevertheless, as they struggle to navigate the barriers to entry inherent to the top-down planning logic informing most local governments' development practices, planners continue to confront significant barriers to promoting more inclusive engagement activities. It is essential for local governments to extend additional resources to support planning practitioners as they seek to implement culturally-sensitive public participation practices and revitalize their governance structures to more effectively integrate the contributions of and, in turn, best serve the interests of their diverse communities.

Citations

- Blokland, T. (2017). Community as urban practice. Cambridge, Massachusetts: Polity Press.
- Burayidi, M. (2015). Cities and the diversity agenda in planning. In M. Burayidi (Ed.), Cities and the politics of difference: Multiculturalism and diversity in urban planning (pp. 3–27). Toronto, Ontario: University of Toronto Press.
- Fincher, R., & Iveson, K. (2008). Planning and diversity in the city: Redistribution, recognition, and encounter. Basingstoke, United Kingdom: Macmillan International Higher Education.
- Nguyen, M. T., Gill, H., & Steephen, A. (2015). Community planning for immigrant integration. In M. Burayidi (Ed.), Cities and the politics of difference: Multiculturalism and diversity in urban planning (pp. 214–235). Toronto, Ontario: University of Toronto Press.
- Sager, T. Ø. (2012). Reviving critical planning theory: Dealing with pressure, neo-liberalism, and responsibility in communicative planning. Abingdon, United Kingdom: Routledge Press.

Key Words: Immigration, Public Participation, Municipal Government, Diversity, Community Development

WHAT ARE WE PRESERVING? GENTRIFICATION, HISTORIC PRESERVATION, AND PROFESSIONALIZED NONPROFITS AND STONEWALL NATIONAL MONUMENT

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Situated in New York City's Greenwich Village is Stonewall National Monument. Designated by President Obama in 2016, the park commemorates the events of the 1969 Stonewall riots, where queer people fought back after years of harassment and violence by the NYPD. The monument's designation was spearheaded by several nonprofit organizations, including the NYC LGBTQ Historic Sites Project and the National Parks Conservation Association, in the waning years of the Obama administration. The monument consists of the Stonewall Inn bar, neighboring Christopher Park, and uniquely, several of the streets on the surrounding blocks to commemorate the riots that occurred on those streets.

The monument is now a major tourist attraction in Greenwich Village. When visiting the site, one can see people taking selfie pictures with the Gay Liberation statue, which depicts two gay men and two lesbians conversing in the park, or one can go into the bar for an expensive drink (even by New York City standards) with barely an acknowledgment of the events that happened at that site in 1969, save for a small interpretive sign near the Gay Liberation statue. How is there a site to a critical moment in radical history that is seemingly also so sanitized? In this paper, I argue that this may be due to the relationship between professionalized nonprofit organizations, especially ones engaged in historic preservation, and processes of gentrification.

The literature on social movements and historic preservation answer some of this. Social movements have been shown to adopt increasingly bourgeois and middle-class values as they professionalize and grow.[1] Additionally, large philanthropic organizations can engage in movement capture through funding mechanisms.[2] Notably, the NYC LGBTQ Historic Sites Project is part of the larger philanthropic organization Fund for the City of New York. This major organization provides millions of dollars in funding to various nonprofit organizations in and around New York City. The literature on historic preservation illustrates the potential for historic preservationists to engage in gentrification.[3]

The question then is how this might be happening in the context of Stonewall National Monument. Stonewall is in one of the most heavily gentrified neighborhoods in New York City. The monument is flanked by high-end boutique shops and expensive condominiums, both classic hallmarks of gentrification.[4] I will attempt to address this through interviews and archival documents for some of the organizations in question, including the Fund for the City of New York and the NYC LGBTQ Historic Sites Project. Additionally, I am conducting interviews with people at the National Park Service, which oversees the monument.

This has significant implications for planning practice and education because it is essential for planners to consider which nonprofits and organizations to partner with when planning monument projects such as Stonewall. If an organization promotes gentrification in the promotion of a project, planners may need to consider different partners or limit the influence of those partners.

Citations

- Suzanne Staggenborg, "The Consequences of Professionalization and Formalization in the Pro-Choice Movement," *American Sociological Review* 53, no. 4 (August 1988): 585–605.
- Megan Ming Francis, "The Price of Civil Rights: Black Lives, White Funding, and Movement Capture: Price of Civil Rights," *Law & Society Review* 53, no. 1 (March 2019): 275–309.
- Non Arkaraprasertkul, "Gentrifying Heritage: How Historic Preservation Drives Gentrification in Urban Shanghai," *International Journal of Heritage Studies* 25, no. 9 (September 2, 2019): 882–96.
- David Ley, "Alternative Explanations for Inner-City Gentrification: A Canadian Assessment," *Annals of the Association of American Geographers* 76, no. 4 (December 1986): 521–35.

Key Words: gentrification, historic preservation, social movements

GENTRIFICATION BY ATTRITION, THE CASE OF PILSEN IN CHICAGO

Abstract ID: 1627
Individual Paper Submission

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Gentrification has showed to be highly sensitive to local political economies and specific neighborhood dynamics. Despite the mounting resistance to urban renewal, the neighborhoods of the Near North, Lincoln Park, and Hyde Park in Chicago gentrified rather expediently through the removal of their low-income populations. Similarly, the

central area of the city absorbed neighborhoods to its west and south in a short period of time establishing a continuum of gentrification in the central area of the city. In contrast, despite its central location, Pilsen resisted first 'urban renewal' gentrification in the 1970s and 1980s and public-private gentrification drives thereafter remaining a predominately low-income Latino neighborhood after five decades. This paper examines the ways in which local resistance has kept gentrification in check, especially in the last two decades. This, however, does not mean that the threat of gentrification is over; rather, gentrification has been eroding the neighborhood compact and resistance via attrition measure by the progressive loss of families, the end of Pilsen as an immigrant receiving port of entry, studentification, lack of affordability, culture, and symbolic gentrification.

This research is part of a longitudinal study of Pilsen's immigrant Latino community's trajectory over the past 30 years through a historical genealogical approach using a mixed methods approach of grounded critical visualization by the authors who have followed carefully the politics of gentrification in the neighborhood. We conduct spatial analysis using longitudinal Census data to document the significant and subtle shifts. Using published and unpublished materials from archives, secondary data, published research, interviews, and participant observations to show the ways in which gentrification has proceeded under the radar screen.

As a major form in the recolonization of the city by capital, gentrification has produced significant scholarship ranging from the macro- to the micro-level. Yet, the continued additions to the literature have demonstrated the complexity of the issue and the multiple forms it takes and processes it follows in different contexts and political economies. This paper intends to contribute to the literature through a case that introduces a form of gentrification missing from the literature, gentrification by attrition, while at the same time adding to the literature on neighborhood resistance that, in this case, defeated the repeated intents of growth coalitions for nearly five decades. Lastly, it asks whether resistance can address this form of gentrification - assuming more subtle forms and advancing often under the radar screen.

Citations

- Albet, A. & Benach, N. Editors. (2019). *Gentrification as a Global Strategy, Neil Smith and Beyond*. Routledge.
- Betancur, J.J. (2011). Gentrification and Community Fabric in Chicago. *Urban Studies* 48(2): 383-406.
- Chronopoulos, T. (2020). "What's Happened to the People? Gentrification". *Journal of African American Studies*, 549-572.
- Moskowitz, P. E. (2017). *How to kill a city: Gentrification, inequality, and the fight for the neighborhood*. New York: Nation Books.
- Smith, N. (2002). New Globalism, New Urbanism: Gentrification as Global Urban Strategy. *Antipode* 34(3): 434-457.

Key Words: Gentrification, Neighborhood Resistance, Displacement, Latinos, Pilsen Chicago

SUPPORTING AGING POPULATIONS IN A DECLINING REGION: IDENTIFYING OPPORTUNITIES FOR COLLABORATION(S)

Abstract ID: 1683

Individual Paper Submission

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Over the Winter 2021 term, a University of Manitoba planning studio examined a rural region in western Manitoba (see Milgrom & Camps 2021). It is declining in population but includes ten settlement areas ranging in population from 80 to 1,300. The population is also aging at a rate well above that of the provincial average, as is its aging index (the ration of seniors to children). The work of the studio sought to understand the challenges faced by older adults in this environment, and to identify opportunities to support older adults in this situation, where declining populations are followed by dwindling resources and amenities.

The work covered five municipalities that are arrayed in close proximity to the Yellowhead Highway, the main east-west road connection between Winnipeg and Edmonton. They are immediately south of Riding Mountain National Park, and other tourist attractions. And they are adjacent to several First Nations, that range in population from 100 to 1400.

The work has been carried out as part of Social Sciences and Humanities Research Council (SSHRC) funded project: Age-Friendly Community Initiatives: Impact and Sustainability (PI, Verena Menec, Community Health Sciences, University of Manitoba). It has been examining the resilience of the Age Friendly Manitoba Initiative (AFMI) that was launched in 2008, following the principles of the Age-friendly Cities: a guide (WHO 2007) and the Age-friendly Rural and Remote Communities: a guide (PHAC 2009). The communities that were the focus of the studio investigation were represented by local age-friendly committees and/or local political figures interested to continuing to develop

age-friendly projects, or eager to reinvigorate work that had lost its focus.

Students in the studio conducted GIS analysis and met with members of age-friendly committees, local politicians, and agencies in all of the municipalities. They conducted visual surveys of the settlement areas (all virtual during the pandemic). While there were successes (e.g., the development of walking trails, local handi-transit services), the challenges were significant. Most communities lacked a full range of housing choices for seniors, medical and emergency services had been reduced, and lack of coordination between communities led to inefficient and sometime redundant services. Some feared the loss of ability to renew their communities as they aged – schools were expected to close in some places, and retail outlets were closing.

However, the studio also identified some possibilities for collaboration within the region that might shore up supports for older adults. These avenues were explored by a focus group that included stakeholders from the municipalities, and members of the Manitoba Age-Friendly Resource Team, that advocated for seniors' quality of life for seniors and carries some weight with policy makers. Possibilities started with departments and agencies (e.g., planning, housing, infrastructure, health) within the Provincial prevue but the conservative leanings of current government may limit short-term potential for better services (similar to situations identified in the US by Warner & Zhang 2021). But less conventional approaches were also discussed. These included: collaboration between municipalities to improve the efficiency of hand-transit services between communities, and to provide more frequent access to larger centres; taking advantage of the relatively healthy tourist economy of the region to provide age-friendly amenities and services (one small town boasts a good size supermarket because of the large number of near-by cottages; cooperation between the municipalities to attract economic development along the Yellowhead corridor; and potential partnerships with neighbouring First Nations, whose demographic profiles are currently the growing far faster in the youngest cohorts.

Citations

- Menec, V., Means, R., Keating, N., Parkhurst, G., & Eales, J. (2011). Conceptualizing Age-Friendly Communities. *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement*, 30(3), 479-493.
- Milgrom, R. & Camps, D. (2021). "Age-friendly Communities in a Declining Region? Opportunities and challenges in western Manitoba." Paper presented at the ACSP Conference, Miami (Virtual) November 2021.
- Public Health Agency of Canada (2009). *Age-friendly Rural and Remote Communities: A Guide*. Ottawa: Federal/Provincial Territorial Ministers Responsible for Seniors.
- Warner, M. & Zhang, X. (2021). Serving and Aging Population: collaboration is key. *Local Government Studies*, 47(3), 498-517.
- World Health Organization (2007). *Global Age-friendly Cities: A Guide*. Geneva: WHO

Key Words: Age-friendly, Rural

EXPERIENCE, EXPERTISE, AND THE RATIONAL IDEAL: FUNDS OF KNOWLEDGE AND INFLUENCE IN OREGON'S DECISION-MAKING BODIES

Abstract ID: 1689

Individual Paper Submission

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As reflected in both planning and public administration theory, there is growing interest in placing communities at the center of government decision-making processes. Planners and administration scholars and practitioners largely agree that public engagement is necessary for establishing legitimate governance. In turn, residents expect to have a role in shaping public policy that impacts their lives. Expectations for government planning processes have moved beyond gathering input and service delivery toward meeting needs and creating more fulfilling experiences for individuals (Lee, 2019; Zingale, Cook, & Mazanec, 2018). More recently, as U.S. states and localities have become increasingly diverse, there are mounting calls for decision making to reflect a wide range of demographic identities, with particular emphasis on the inclusion of communities that have historically been underrepresented and marginalized in planning and policymaking. Yet, designing inclusive spaces requires administrators, planners, and public involvement professionals to decipher how power operates within decision making and pay close attention to design elements that may help balance structural power differentials (Quick & Feldman, 2011; Anonymized for Review, 2021).

This article focuses on one foundational way that power manifests in participatory governance spaces—through access to knowledge, expertise, and ways of knowing. Drawing on interviews with 46 first- and second-generation immigrants serving in public decision-making bodies across various jurisdictions in the state of Oregon, our study sought to uncover how participants employed various “funds of knowledge” based in lived experience, identities, and cultural and institutional affiliations (Esteban-Guitart et al., 2020). The funds-of-knowledge approach was initially

developed by researchers in education and anthropology as a framework for incorporating knowledge systems familiar to culturally diverse students into the highly rational U.S. education model. Central to this approach is identifying knowledge and skills that individuals (i.e., students) have in their homes and their communities that can be activated in a setting (i.e., a classroom). This study drew on this framework to examine the sources of knowledge immigrants employed within participatory bodies. Further, it examined whether immigrants felt they had more influence over government decisions if they relied more heavily on knowledge based in lived experience or technical training. The study findings contribute important insights about the kinds of knowledge that immigrants rely on to participate and influence decision makers. In line with Young (2000) and others, we argue that to create inclusive and empowering forums for participation, planners, bureaucrats and decision makers should actively level the playing field, balancing highly rational forms of knowledge derived from technical training and forms of knowledge that are contextualized, experiential, cultural, and non-rational. We conclude this article with recommendations for facilitating decision-making processes that aim to be inclusive of different forms of knowledge expression. Although we used the term decision-making body across the research informing this article, we note that, while these bodies do make decisions and policy recommendations, most of the bodies studied are advisory groups that have no formal, binding decision-making authority over policy.

Citations

- Quick, K. S., & Feldman, M. S. (2011). Distinguishing participation and inclusion. *Journal of Planning Education and Research*, 31(3), 272–290.
- Lee, C. A. (2019). Engaging non-citizens in an age of uncertainty. *Journal of the American Planning Association*, 85(3), 271–286.
- Meléndez, J. W., & Martinez-Cosio, M. (2021). Differentiating participation: Identifying and defining civic capacities used by Latino Immigrants in participatory budgeting. *City & Community*, 20(3), 212–234.
- Young, I. M. (2000). *Inclusion and democracy*. Oxford University Press.
- Zingale, N. C., Cook, D., & Mazanec, M. (2018). Change calls upon public administrators to act, but in what way? Exploring administration as a platform for governance. *Administrative Theory and Praxis*, 40(3), 180–199.

Key Words: Immigrants, Civic Engagement, communicative rationality, funds of knowledge, Oregon

THE COLONIA TARAHUMARA IN CIUDAD JUAREZ

Abstract ID: 1732

Individual Paper Submission

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The Tarahumaras or Raramuris are one of the main indigenous groups in the state of Chihuahua, in northern Mexico. Although they have been living for several decades in the border city of Ciudad Juárez, their colonia only began to take shape in approximately 1996. Climate change and violence have been gradually displacing this indigenous groups to urban areas. Droughts and the land grabbing by drug traffickers have limited the chances of Tarahumaras for survival and have been reducing their chances for living in peace in their places of origin. How is this community integrated in Ciudad Juárez, an industrial city with more than 380 maquiladoras? Where do they live and how are they organized? What is the relationship and representation that this community has in the city? Is city planning takes them into account? These are some of the research questions that motivated this study. Ciudad Juárez receives many immigrants due to the job opportunities in the maquila and the Raramuris have joined this labor force. Racism and classism are elements faced by this indigenous community that wears their indigenous clothes and makes their handicrafts to sell. How does the industrial city behave towards this colonia? Recently, the municipal government opened the space for Tarahumara representative in the City Council and with it the possibility of having a voice in this space previously closed to them. With field visits, interviews with people from the Raramuri community and their representative in the city, I document this colonia that is located on the outskirts of the city. This research documents their way of organizing and their way of planning the Tarahumara colony in a border city that continues to be violent and unjust. Although this community has been widely documented in its places of origin, in the southern highlands of Chihuahua, the documentation of this indigenous group must be done to trace their presence in the city and to propose alternatives to ensure their rights in the city.

Citations

- Jojola, T. (October 01, 2000). INDIGENOUS PLANNING. *Traditional Dwellings and Settlements Review*, 12, 1, 77.
- Walker, R., Jojola, T. S., & Natcher, D. C. (2013). *Reclaiming indigenous planning*. Montreal: McGill-Queen's University Press.

- Porter, L., & Barry, J. (2018). Planning for coexistence?: Recognizing indigenous rights through land-use planning in Canada and Australia.

Key Words: Tarahumara or rarámuri , Indigenous people , Ciudad Juarez, indigenous planning

GENDERED CYCLING UNDER THE COVID-19 PANDEMIC IN QUITO, ECUADOR

Abstract ID: 1733

Individual Paper Submission

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The global COVID-19 pandemic immobilized cities around the world. Yet in cities like Quito, it became clear that ordinary people went out on a daily basis because they had no other choice. In response in April 2020, the municipal government of the metropolitan district of Quito (DMQ) added bike lanes to existing infrastructure to provide people with healthy mobility options to move around during the global emergency. The Covid-19 pandemic demanded overnight solutions to urban mobility due to limited or canceled transportation offerings. As cycling lanes were constructed, the city grew more insecure for everyone and in particular for women. How did cycling infrastructure create opportunities for women's inclusion in urban public space? Did women's cycling mobilities change during pandemic conditions? This paper responds to these questions by presenting research findings recovered through digital and in-person ethnography. By following ten women who cycle, it draws on participatory WhatsApp photo-diaries, a WhatsApp focus group, semi-structured interviews, and GoPro ride-alongs to show how urban planners extended secure spaces for cycling. Despite physical bodily protection that the feminine cyclists felt against the virus, the paper shows how municipal planners did not directly address other forms of safety required for women to feel safe. As a result, this paper focuses on how feminine mestiza cyclists navigated an insecure urban landscape by bicycle. It presents data that underscore how design solutions that only focus on the built environment do little to address the wider causes of women's fear.

Citations

- Pain, Rachel, and Tim Townshend. 2002. "A Safer City Centre for All? Senses of 'community Safety' in Newcastle upon Tyne." *Geoforum* 33 (1): 105–19. [https://doi.org/10.1016/S0016-7185\(01\)00025-2](https://doi.org/10.1016/S0016-7185(01)00025-2).
- Ravensbergen, Léa, Ron Buliung, and Nicole Laliberté. 2019. "Toward Feminist Geographies of Cycling." *Geography Compass* 13 (7): e12461. <https://doi.org/10.1111/gec3.12461>.
- Koskela, Hille. 1999. "'Gendered Exclusions': Women's Fear of Violence and Changing Relations to Space." *Geografiska Annaler: Series B, Human Geography* 81 (2): 111–24. <https://doi.org/10.1111/j.0435-3684.1999.00052.x>
- Koskela, Hille, and Rachel Pain. 2000. "Revisiting Fear and Place: Women's Fear of Attack and the Built Environment." *Geoforum* 31 (2): 269–80. [https://doi.org/10.1016/S0016-7185\(99\)00033-0](https://doi.org/10.1016/S0016-7185(99)00033-0).
- Valentine, Gill. 1989. "The Geography of Women's Fear." *Area* 21 (4): 385–90

Key Words: gendered cycling, bicycle infrastructure, public space, fear, safety

ADDRESSING GAPS IN 'AVERAGE' MEASURES WHEN ASSESSING WALKABILITY FOR ALL

Abstract ID: 1758

Individual Paper Submission

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The '15-Minute Neighbourhood' concept – where residents live within a 15-minute walk (or roll) to daily goods, services, and amenities – is a popular basis for the design and analysis of pedestrian-friendly communities. However, the 15-minute 'walkable' journey has often been applied using an assumed 'average' pedestrian model – often adult, male, and able-bodied (Hamraie, 2017) – limiting clear consideration for community members of varying age, gender, or abilities in the assessment of neighbourhood walkability.

Using 'average' walk speed (1.2m/s), most able-bodied adults can travel approximately 1,080 metres – or just over 1 kilometre – in 15 minutes. Residents who are older or live with disabilities experience greater challenges moving around and participating in their communities whose built environment has not been designed with them in mind (Forsyth, 2015). When considering average walking speed of pedestrians with mobility impairment, such as persons who use a cane or crutch (0.8m/s), the 15-minute walkable distance is reduced to 720 metres, while the 15-minute walkable distance of small children and oldest older adults may be as short as 360m (0.4m/s). Pedestrians using

wheeled mobility devices, such as manual and power-assist wheelchairs or scooters, will also have variable speeds of travel.

This research collected indicators of walkability and access to services for 117 communities in Halifax Regional Municipality (HRM), Nova Scotia. Locations of essential services and destinations (e.g., supermarkets, pharmacies, transit stops, outdoor recreation space) were mapped and analysed within three radii of walking distances from most residences in a community. The three distances used for this analysis were 1200m (derived from 1.2m/s, considered to be the average walk speed), 800m (considered more inclusive of persons with mobility impairments), and 400m (the most conservative threshold). Initial results show that while access to all services is available within a 1200m journey in 25% of the communities assessed (29/117), only 12% of communities offer the same within a 800m journey (14/117), and 1% within a 400m journey (1/117). Similar comparisons are made between communities that are home to higher proportions of vulnerable pedestrians. For instance, in communities with the oldest populations (20% or greater proportion of residents aged 65 years or older), 9.1% (2/22) offer all services within a 800m journey. The same was found true of only 2.1% (1/48) of communities with the highest proportions of children (40% or greater).

This research exposes the extent to which vulnerable pedestrians are less likely to comfortably and independently access services and destinations in their communities. By using diverse measures for walkability, including varying 'walkable' distances as well as other environmental factors, neighbourhood-level assessments can offer a more complete and inclusive picture of whose needs are being adequately served. This research proposes a new status quo for walkability assessments to go beyond 'average' measures, by demonstrating the value of considering indicators of walkability with vulnerable pedestrians, particularly children, older adults, and persons who experience disability, in mind.

Citations

- Bohannon, R.W., & Andrews, A.W. (2011). Normal walking speed: a descriptive meta-analysis. *Physiotherapy*, 97(3):182-9.
- Dumbaugh, E. (2008). Designing Communities to Enhance the Safety and Mobility of Older Adults: A Universal Approach. *Journal of Planning Literature*, 23(1), 17-36.
- Forsyth, A. (2015). What is a walkable place? The walkability debate in urban design. *Urban Design International*, 20(4), 274-292.
- Hamraie, A. (2017). Designing collective access: A feminist disability theory of universal design. *Disability, space, architecture*. Routledge, 78-297.
- Stafford, L. & Baldwin, C. (2018). Planning walkable neighbourhoods: Are we overlooking diversity in abilities and ages? *Journal of Planning Literature*, 33(1), 17-30.

Key Words: walkability, accessibility, neighbourhood-level assessment

CONTEXTUALIZING IDENTITY AND HISTORICAL NARRATIVES IN LANGLEY PARK FOR ECONOMIC DEVELOPMENT STRATEGIES

Abstract ID: 1774

Individual Paper Submission

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In the last two decades, the growth of multi-ethnic immigrant concentrations in the suburbs has outpaced that of the inner-city. Once the aspirational destination for homeownership, upward economic mobility, and White families, inner-ring suburbs have gone through extensive demographic and structural changes. Langley Park is an inner-ring suburb of Washington, D.C. composed predominantly of working-class Latinx residents. Like several post-World War II communities, Langley Park has become racially and ethnically diverse. Yet, it has also faced disinvestment since the 1980s. Due to their proximity to the urban core, inner-ring suburbs like Langley Park have become recent casualties of significant economic redevelopment efforts, such as transit-oriented development. This paper examines the historical and economic development strategies since the 1970s that have been considered by the county and planning agency, and other institutions, as Langley Park became a predominantly Latinx immigrant community.

I argue that post-World War II inner-ring suburbs that were revitalized by minority and immigrant-serving businesses in the 1980s are not benefiting from contemporary economic redevelopment strategies. Instead, their minoritarian identities are being molded and used to encourage redevelopment, all the while marginalizing and displacing small businesses that do not fit the dominant and most profitable narrative. The 2000s saw the naming of the commercial corridor on University of Boulevard as the 'International Corridor', the creation of the Takoma-Langley Crossroads Community Development Agency, and changes in jurisdictional boundaries. These initiatives have been primarily conducted by top-down actors, with an emphasis on marketing and branding potential. Nevertheless, while these institutional narratives capture the capitalization of its demographic body, sector plans often describe the Langley Park community as 'lacking a formal identity.' In 2016, the corridor's area was renamed

the Northern Gateway by Councilmember Deni Taveras to bring together unincorporated legacy communities of her district in Prince George's County. This effort's goal has been to 'rebrand and rejuvenate' and to 'reduce blight in the community' (PG Sentinel, 2016). The most recent effort has been a campaign around 'the Salvadoran Corridor', initiated by the CEO of Salvadoran Corridor Los Angeles, the Salvadoran American Chamber of Commercial, Comunidades Transnacionales Salvadoreñas Americanas, and the local councilmember.

This paper is based on findings from semi-structured interviews and historical analysis and archival research from newspapers and planning proposals, and from dissertation fieldwork. The semi-structured interviews with local small businesses will answer how economic development strategies such as marketing or branding initiatives have may (or may not) helped them and will address the challenges they face during neighborhood changes. Semi-structured interviews will also be conducted with top-down stakeholders, such as the local councilmember, non-profits, and city agencies. These interviews will be compared to understand how narratives of local businesses' lived experiences differ from top-down understandings of the commercial landscape. Through this lens, my paper aims to answer, "Are economic and redevelopment strategies that focus on ethnic identity for marketing and branding purposes valuable in helping immigrant-serving businesses stay in place?"

Citations

- Chapple, K., & Jacobus, R. (2008). Retail trade as a route to neighborhood revitalization. In *Urban and regional policy and its effects*. Washington, DC: Brookings Institution Press.
- Hwang, J. (2015.) Gentrification in changing cities: Immigration, new diversity, and racial inequality in neighborhood renewal. *Annals of the American Academy of Political and Social Science* 660(1): 319–400.
- Zukin, S. (1995). *The cultures of cities*. Blackwell.
- Sarmiento, C. (2021). Not diverse enough? displacement, diversity discourse, and commercial gentrification in Santa Ana, California, a majority-Mexican city.
- González, E (2017). *Latino City: Urban Planning, Politics, and the Grassroots*. London: Routledge.

Key Words: commercial gentrification, Latinx, small businesses, suburbs, displacement

STUDENTS TAKING OWNERSHIP OF SAFETY ON AN URBAN CAMPUS

Abstract ID: 1815

Individual Paper Submission

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Central Theme. Gender-based violence against women and other marginalized populations is a significant problem in cities and university campuses across the globe. Cincinnati and the University of Cincinnati campus are no exception. According to the 2017 Women Helping Women annual report, sexual assault responses rose 40 percent and therapy services more than doubled. They served nearly 11,300 clients including nearly 6,000 survivors. On UC's Uptown Campus, according to the Department of Public Safety, 15 cases of rape were reported on campus (including residence facilities) in 2020, with 15 in 2019 and 9 in 2018. Aggravated assault included 15, 16, and 24 for the same years (though not necessarily against women).

This Participatory Action Research (PAR) project describes researchers partnering with UC-related women's groups to employ a cellphone mapping app (e.g., Safetipin) that tracks respondents' perception of the safety of specific spaces on and around campus. This employment of cell phones provides an opportunity to update findings from earlier studies on campus violence. In addition, the project employs Geographic Information System mapping of where crime has occurred, based on official reporting. Focused largely on the built environment, the self-reporting and official records will be compared to produce a data base of campus locations associated with violence.

The focus on the built environment reflects how elements are often designed and installed without adequate consideration of how they may increase potential for violence against women and other vulnerable populations. In terms of the characteristics of the spaces, the Safetipin app asks for an assessment of variables raised in the literature: lighting, openness, visibility, people, security, walk path, public transport, gender usage, feeling.

Approach and Methodology. The Participatory Action Research methodology emphasizes the research team working alongside student groups in identifying problems, selecting software, collecting, analyzing, and interpreting data, and developing and implementing action plans to address the issues. Several campus organizations will be partners in the process, which is anticipated to last one year.

The first, assessment, phase of the research is the subject of this paper and examines the research team mapping crime data based on City of Cincinnati and the UC Department of Public Safety's records, beginning with on-campus

incidents, and extending to near-campus incidents. A complementary element involves collaborating with groups on campus that are particularly vulnerable to violence. Initially we will engage campus women's groups, like sororities. These groups will use cellphone apps like Safetipin to assess perception of safety on different paths through campus, at different times of day.

Main results. The main result will be the comparison of the two datasets via GIS. The expectation is that there will be considerable overlap between places where fear of crime is high and where crimes have occurred. If this is the case, then we hope to be able to assess the effectiveness of Safetipin-type apps to identify problem spots. Mismatches will either point to places where crime may be likely but has not (yet) occurred or where the app needs refinement. Qualitative analysis of photographic evidence will look for elements of the built environment that reveal patterns.

Relevance. This phase of the research will examine the intersection of self-reported sense of safety on/near campus and official data on crimes from university and municipal reports. Ultimately, the PAR project proposes to collaboratively identify places that make persons feel vulnerable, recognizing that violence against vulnerable population is facilitated by the physical environment in which they live. The project will eventually incorporate co-creation/modification of software and analytical approaches to examine patterns of crime and perceived risk and to develop strategies to advocate for mitigating problems and new construction on/near campus.

Citations

- Ceccato, Vania & Mahesh K. Nalla. 2020. Crime and fear in public places: an introduction to the special issue, *International Journal of Comparative and Applied Criminal Justice*, 44:4, 261-264, DOI: 10.1080/01924036.2020.1824716
- Cozens, Paul Michael, Greg Saville, and David Hillier. 2005. "Crime prevention through environmental design (CPTED): a review and modern bibliography." *Property management*.
- Fisher, Bonnie S., John J. Sloan, Francis T. Cullen, and Chunmeng Lu. 1998. "Crime in the ivory tower: The level and sources of student victimization." *Criminology* 36, no. 3: 671-710.
- Loukaitou-Sideris, Anastasia. 2006. "Is it safe to walk? 1 neighborhood safety and security considerations and their effects on walking." *Journal of Planning Literature* 20, no. 3: 219-232.
- Stalker, Katie Cotter, Mary Ellen Brown, Caroline BR Evans, Julie Hibdon, and Cody Telep. 2020. "Addressing Crime, Violence, and Other Determinants of Health through Community-Based Participatory Research and Implementation Science." *American Journal of Community Psychology* 66, no. 3-4: 392-403.

Key Words: crime and fear of crime, Participatory Action Research (PAR), built environment, self-reporting via mobile technology, crime prevention through environmental design

INSURGENT BUREAUCRATS: HOW MUNICIPAL BUREAUCRATS MOBILIZE FOR RACIAL EQUITY AND JUSTICE IN LONG BEACH CALIFORNIA

Abstract ID: 1825

Individual Paper Submission

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Central Themes:

This paper examines how municipal bureaucrats can play a strategic role in pushing a racial equity and social justice agenda in their cities. It does this through the case of Long Beach, California. The literature on advocacy and insurgent planning largely focuses on the role of community organizations in mobilizing for more inclusive policies (Miraftab 2009; Friedmann 2011). This literature conceives of government bureaucrats as either working on behalf of the neoliberal capitalist state (Brenner and Theodore 2002; Stein 2019) or as playing the role of neutral arbiter in deliberations between contending stakeholders (Forrester 2009). Rather than serve as a tool of the neoliberal state or neutral arbiter in planning deliberations, this paper shows that bureaucrats can also become insurgents who collaborate with allies (community organizations and elected officials) in a struggle to advance equity and social justice agendas.

Methodology

The paper draws on five sources of information. First, we performed interviews with 16 bureaucrats and nonprofit organizations. Second, we employed demographic and political data to assess the changing context. Third, we constructed a dataset based on newspapers articles for the period of 2010-2020. The searches yielded a total of 153 relevant articles. This data was used to analyze issues and debates, key actors involved in debates, and protests. Fourth, we performed observations and analyses of relevant pre-recorded city council meetings and public deliberation for the 2010-2020 period. Fifth, we performed qualitative and quantitative analyses of important

documents (e.g., Strategic Plans, Housing Element) of two different departments (Parks and Recreation, Urban Planning) over a twenty-year period. This allowed us to assess the impact of insurgent bureaucrats on language and strategic priorities.

Findings

Our paper shows that Long Beach has moved in a decidedly inclusive direction over the past ten years. The city sponsored a racial reconciliation committee run by insurgent bureaucrats, city council adopted many of the committee's recommendations, and strategic documents (Housing Element, Strategic Plan) embrace the language and goals of racial equity and social justice. We explain for these changes by identifying the growing prominence of insurgent bureaucrats from 2016 onwards. These bureaucrats collaborated with like-minded bureaucrats and community allies, adopted similar discourses and viewpoints, and mounted Rather than serve as a tool of the neoliberal state or neutral arbiter in planning deliberations, campaigns to achieve their common goals. They worked closely with one another to incrementally improve their positioning within the bureaucratic field. Over time, this small group of bureaucrats acquired more resources, climbed the bureaucratic hierarchy, and established a network of supporters across the bureaucratic field. Alongside progressive organizations and politicians, this network of bureaucratic insurgents played a decisive role in pushing the enactment of more equitable and inclusionary policies.

Relevance

The planning literature largely ignores the role of bureaucrats as activists or insurgents in broader struggles for social justice and racial equity. This paper suggests that, under certain conditions, government bureaucrats can work in broader coalitions to achieve such goals. Though we understand the important structural constraints on bureaucrats, we nevertheless argue that the planning literature needs to develop better theory to understand the varying levels of political agency within government bureaucracies.

Citations

- Brenner, N. and Theodore, N. (2002) 'Cities and Geographies of "Actually Existing Neoliberalism"', *Antipode* 34 (3): 349-379.
- Friedmann, J. (2011) *Insurgencies: Essays in Planning Theory*, London and New York: Routledge.
- Forrester, J. (2009) *Dealing with Differences: Dramas of Mediating Public Disputes*. Oxford: Oxford University Press.
- Miraftab, F. (2009) "Insurgent planning: situating radical planning in the global south," *Planning Theory*, 8(1): 32-50.

Key Words: Insurgent planning, equity, social justice, bureaucrats

PLANNING FOR DISABILITY INCLUSION: ASSESSING PLANS

Abstract ID: 1881

Individual Paper Submission

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Community planning is an essential pathway to addressing social, cultural, and economic discrimination (Christensen, 2010). The characteristics of the physical environment affect opportunities for community integration independent of socioeconomic and demographic variables. In particular, the human-made environment that provides the setting for human activity influences an individual's community integration (Christensen & Byrne, 2014). A supportive environment facilitates participation in everyday activities and relationships, provides opportunities for self-determination, and allows individuals to build social capital (Law, 2002).

This presentation is part of a larger research project developing a comprehensive socio-ecologic framework describing the physical environmental factors associated with community participation for individuals with disabilities. The lack of inclusion of people with disabilities in planning and design fields has contributed to physical environments that exclude this population from accessing and participating (Imrie & Kumar, 1998). This framework will examine the effect of mainstream community planning practices and policies on individuals with disabilities' community participation.

This research addresses inclusion in planning policy and practices by asking, what barriers prevent people with disabilities from participating in their communities? And what practices exist in evaluating obstacles and facilitators to inclusion in the built environment?

To assess accessibility and community participation issues for individuals with disabilities, the research team reviewed literature focused on evaluating the built environment and social participation of people with disabilities. Building from the literature review, researchers adopted the framework Human Development Model- Disability Creation Process (Fougeyrollas et al., 2019). The tools used to validate the HDM-DCP, the LIFE-H, and the Measure of Quality Environment questionnaires, account for physical limitations, built environment, and social obstacles to inclusion. These assessment tools are complemented by the built environment and social sustainability assessments methodologies (Mahmood et al., 2019; Rashidfarokhi et al., 2018), together with elements from the Community Health Inclusion Index (NCHPAD, 2015)

The researchers maintained the categories of both the LIFE-H and MQE questionnaires that are under the influence of planning policy, including physical accessibility, public infrastructure, and commercial services. In addition, a review of publications-covering a variety of disabilities collected obstacles and facilitators noted throughout the studies. Using the category classification and the scoring scale of the LIFE-H/MQE questionnaires, researchers created a rubric for planners to evaluate planning documents' considerations of these obstacles and facilitators, for example, commercial and community services, an-MQE categorization, can support or hinder the life habit of participating in community life (LIFE-H). Influencing factors include location size, accessible parking, and usability of entrance (Lit Review). The following steps in this project include reviewing planning documents using the rubric to score the level of facilitators and obstacles addressed.

Findings in reviewing disability-inclusive planning policies include a lack of explicit disability focus in plans, a limited scope of disability, focusing on aging and mobility, and the role of attitudinal barriers in preventing inclusion despite the accessibility of the environment. These findings help identify gaps in included populations, amplify the concerns of stigma, ableism, and discrimination as barriers to accessing the physical environment, and help further the planning best practices to prioritize a variety of disabilities in the planning process.

Citations

- Christensen, K. M., & Byrne, B. C. (2014). The built environment and community integration: A review of states' Olmstead plans. *Journal of Disability Policy Studies*, 25(3), 186-195.
- Christensen, K. (2010). The Impact of the Physical Environment on the Social Integration of Individuals with Disabilities in Community. Utah State University Graduate Theses and Dissertations.
- Fougeyrollas, P., Boucher, N., Edwards, G., Grenier, Y., & Noreau, L. (2019). The Disability Creation Process Model: A Comprehensive Explanation of Disabling Situations as a Guide to Developing Policy and Service Programs. *Scandinavian Journal of Disability Research*, 21(1), 25–37.
- Imrie, R., & Kumar, M. (1998). Focusing on Disability and Access in the Built Environment. *Disability & Society*, 13(3), 357–374.
- Law, M. (2002). Participation in the Occupations of Everyday Life. *The American Journal of Occupational Therapy*, 56(6), 640–649.

Key Words: Disability, Disability Creation Process, Built Environment, Inclusion

STRENGTHENING NETWORKS OF SURVIVAL FOR UNDOCUMENTED IMMIGRANTS: FROM RELIEF DISTRIBUTION TO RADICAL FORMS OF CARE

Abstract ID: 1892

Individual Paper Submission

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While immigrant communities in the United were disproportionately harmed by the COVID-19 pandemic, undocumented immigrants were categorically excluded from the federal stimulus checks in 2020 and face numerous barriers to accessing other forms of assistance. Building on years of organizing against gentrification, deportations, and other discriminatory planning practices at various scales (Hum 2010; Carpio, Irazábal, & Pulido, 2011, Sandoval 2021), migrant and migrant serving organizations responded to the crisis by providing mutual aid and relief aid. However, even national organizations reached capacity minutes after opening applications due to having less aid available than what was needed. The state of California and other organizations made additional funding available through public-private partnership, grantmakers, and nonprofit organizations.

This research is a participatory action research project done in collaboration with one local grassroots organization on the front line of supporting undocumented immigrants through cash assistance in the City of Santa Ana, one of the hardest hit cities in Orange County, California. Despite the years of experience, organizations like this cultural center

had never experienced this type of health crisis nor had participated in cash assistance programs at this level but build on local organizing and transnational networks (Sarmiento & Beard 2014). Lxs Esenciales was a project meant to reach those individuals excluded not only from the federal relief program but also from the majority of relief efforts due to undocumented status, precarious housing, flexible employment, and low rates of formal education. The case study analyzes participant observation of the relief distribution processes, organizing meetings, and in depth interviews with a group of 14 immigrant women from the community. The research also includes a participatory analysis of 682 survey responses of benefit recipients from across Orange County that were administered by community organizers. These analyses were completed in collaboration between organizers and University of Wisconsin-Madison graduate researchers and intend to both provide an overview of benefit recipients (who they are, their struggles during the pandemic, and how they compare to surrounding communities in the context of COVID-19) — and also highlight the experiences of the interviewers whose organizing has been essential to the success of Lxs Esenciales. In addition to activating spatial, cultural, and social networks, organizers established agreements in distributing assistance and provided community support as a way to process trauma, rehumanize, and rebuild trust in each other in order to reach those most in need (even amongst the undocumented community). We found that the organizers of Lxs Esenciales, most of whom were undocumented women, expressed radical care in various forms at the individual and community level, with implications for how to address structural barriers and the compounded risks experienced by the community. These actions helped reinforce trust in each other, specifically in community organizations, but not necessarily trust in structural systems. Instead, the assurance and safe keeping fostered between community members and the organizers demonstrated how mutual aid and community networks may be reliable resources but heavily dependent on established relationships and spatial, social, and cultural networks.

Citations

- Carpio, G., Irazábal, C., & Pulido, L. (2011). Right to the suburb? Rethinking Lefebvre and immigrant activism. *Journal of Urban Affairs*, 33(2), 185-208.
- Hum, T. (2010). Planning in neighborhoods with multiple publics: Opportunities and challenges for community-based nonprofit organizations. *Journal of Planning Education and Research*, 29(4), 461-477.
- Sandoval, G. F. (2021). Planning the barrio: Ethnic identity and struggles over transit-oriented, development-induced gentrification. *Journal of Planning Education and Research*, 41(4), 410-424.
- Sarmiento, C. S., & Beard, V. A. (2013). Traversing the border: community-based planning and transnational migrants. *Journal of Planning Education and Research*, 33(3), 336-347.

Key Words: immigration, networks, undocumented immigrants, radical care

DO SIZE AND LOCATION MATTER? THE IMPACT OF LOCAL IMMIGRATION PARTNERSHIPS ON IMMIGRANT INTEGRATION IN SMALL AND MEDIUM-SIZED CANADIAN CITIES

Abstract ID: 1909

Individual Paper Submission

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In Canada, 75% of immigrants concentrate in three gateway cities (i.e., Toronto, Vancouver, Montreal), which have primarily drawn researchers' attention. There is a dearth of research on immigrant retention and integration in Canadian smaller cities despite a growing number of immigrants settling there in recent years (Williams et al., 2015).

In order to attract immigrants to small and medium-sized communities to address local economic and demographic challenges (Graham & Pottie-Sherman 2020), the federal government has formed the Local Immigration Partnerships (LIPs) since 2008 to leverage community resources and engage local governments and agencies to strategically plan for the settlement and integration of newcomers at the ground level. LIPs have been found to be successful by virtue of place-based initiatives, localized program delivery, and their ability to build strong multi-sectoral partnerships (Cullen & Walton-Roberts, 2019; Veronis, 2019). Therefore, LIPs have been described as an essential framework in fostering improved outcomes for newcomers. However, much of the research attention regarding LIPs had focused on specific case studies at specific locations whereas a systematic examination of LIPs practices, priorities, and challenges have not yet been academically studied. This hinders our understanding of the varied places and local initiatives that help shape immigrants' lived experiences. It calls for a systematic approach to compare and contrast local policies and settlement and integration approaches which will help local governments and communities to tackle settlement and integration challenges in smaller communities.

This study aims to investigate two research questions: 1) How have small (<50,000), medium (50,000-500,000), and large (>500,000) municipalities across Canada developed local intentions and integration strategies? 2) Considering various local contexts (e.g. historical, geographical, and physical attributes), what are the contributing factors to welcoming and inclusive integration in small and medium-sized cities?

Using a mixed-methods approach, this study systematically surveyed 62 respondents from 42 LIPs across Canada

about their current priorities, practices, and challenges of immigrant settlement work from a local capacity; followed by 19 semi-structured interviews with LIP coordinators who had filled out the survey. The results indicated that LIPs regardless of size and location were primarily established to coordinate service delivery at a localized capacity and coordinate inclusion to address increasing diversity in their communities, and that physical location impacts LIP-partner coordination. For most small and medium-sized cities, the current prioritization of LIPs are related to immediate settlement needs such as employment, housing, and language training, whereas the civic, social, and multi- and inter- cultural (including Indigenous-Newcomer relations) related integration work tends to be recognized as important but are secondary or not considered in implementation. Notable practical challenges that smaller LIPs may face were found to be: a disconnection between the role of LIPs to facilitate local coordination and their capacity and mandate from the federal government, challenges to municipal buy-in especially in politically conservative environments, contingency on municipal and provincial support to implement place-based initiatives, and engagement implications from the COVID-19 pandemic.

This paper argues that municipalities have an imperative role to play in championing and supporting the work of LIPs and developing a structured framework for social, cultural, and civic engagement and inclusion is required. The findings highlight the importance of smaller LIPs in shaping welcoming and inclusive communities and what this means for the future of immigrant settlement and integration in the Canadian context. It contributes empirical knowledge of the role and imperative of smaller LIPs to address challenges related to newcomer integration in place which may have implications towards diversity, equity, and inclusion related to anti-racism and reconciliation.

Citations

- Cullen, B.T., and Walton-Roberts, M. (2019). The role of local immigration partnerships in Syrian refugee resettlement in Waterloo Region, Ontario. *The Canadian Geographer* 63(3), 374-390.
- Graham, N., and Pottie-Sherman, Y. (2020). The experience of immigrant entrepreneurs in a medium-sized Canadian city: The case of St. John's, Newfoundland and Labrador, Canada. *The Canadian Geographer*, 1-13. DOI: 10.1111/cag.12627.
- Veronis, L. (2019). Building intersectoral partnerships as place-based strategy for immigrant and refugee (re)settlement: The Ottawa Local Immigration Partnership. *The Canadian Geographer* 63(3), 391-404.
- Williams, A. M., Kitchen, P., Randall, J., Muhajarine, N., Newbold, B., Gallina, M., Wilson, K. (2015). Immigrants' perceptions of quality of life in three second-or third-tier Canadian Cities. *The Canadian Geographer* 59(4), 489-503.

Key Words: Local Immigration Partnership, immigrant integration, small and medium-sized, Canadian cities

TOWARDS ANTI-RACIST PLANNING IN MINNESOTA? EXPLORING THE EXPERIENCES OF PROGRESSIVE WHITE AND BIPOC PLANNERS

Abstract ID: 1920

Individual Paper Submission

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As the discipline of urban planning in the United States confronts an institutional reckoning due to its embedded legacies of white supremacy, professional planning culture in Minnesota (MN) emerges as a relevant field to investigate how progressive planners incorporate antiracist approaches into their practice. By carrying out a qualitative study based on archival research, policy analysis and open ended interviews, we argue that the incorporation of anti-racist approaches in urban planning practices involves a tension defined by the embrace of new discourses, techniques and frameworks addressing Racial justice, but also re-affirmation of a progressive status quo. To consider this position we interviewed 20 self-identified white and BIPOC planners from across MN. Our findings establish a conceptual framework based on three domains: Technocratic Resistance and DEI Fatigue, Tepid Ally ship, and Emergent Double Agency. Within this framework White progressive planners struggle with the notion of allyship and negotiate questions of Race to maintain the status quo, while BIPOC planners steer away from DEI work to practice a double agency based on anti-racist strategies and tactics. We conclude by considering how the imperative for anti-racist work may involve moving beyond the delivery of DEI frameworks prioritizing the education of white practitioners towards the recognition of BIPOC identities as the basis for emergent anti-racist strategies and tactics in urban planning work.

Citations

- (2020) Like a Fish Out of Water. *Journal of the American Planning Association*, 87(1), 108–122. Garcia, I, Jackson, A. Greenlee, A., Yerena, A. Chrisinger, B. Lee, A.
- (2021) Feeling like and Odd Duck: The Experiences of African American/Black and Hispanic/Latin/o/a/x planning practitioners. *Journal of the American Planning Association*, 87(3), 326–340.

- Goetz, E. G., Williams, R. A., & Damiano, A. (2020). Whiteness and Urban Planning. *Journal of the American Planning Association*, 86(2), 142–156. <https://doi.org/10.1080/01944363.2019.1693907>
- Roy, A. (2006). Praxis in the Time of Empire. *Planning Theory*, 5(1), 7–29. <https://doi.org/10.1177/1473095206061019>
- Williams R.A. (2020). From Racial to Reparative Planning: Confronting the White Side of Planning. *J. Plann. Educ. Res. Journal of Planning Education and Research*.

Key Words: Race, Urban Planning Culture, Anti-racist, Diversity, Equity

BLACKENING THE CITY: COUNTER-CARTOGRAPHIES AS A TOOL FOR COMMUNITY PLANNING

Abstract ID: 1922

Individual Paper Submission

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Blackening The City: Counter-Cartographies as a Tool for Community Planning engages with the concept of counter cartographies as a tool for creating spatial equity, underpinned by Black Feminist Theory. Historically and currently, the spatial distribution of cities is heavily skewed to favour those in positions of power. Practices have focused on the needs of socioeconomic elites and prioritized the city as a vehicle for economic success, rather than the success of its citizens. Access to social services, transportation, safe and affordable housing, healthcare, and other necessities need to be prioritized in marginalized communities for them to thrive. Black Feminist Theory offers a theoretical lens through which planning processes can be viewed, as it centres the intersection of racialized and gendered oppression towards creating equitable spaces. Black Feminist Theory elevates marginalized voices, as they are the most knowledgeable of the issues they face.

This study focuses on Jane and Finch, a community in Toronto that is predominantly made up of visible minorities, with Black people making up just over twenty six percent of the population. The community is heavily stigmatized, due to white supremacist stereotypes associated with racialized, migrant, and low-income communities. This study documents ways in which Black women move through and connect with their community using counter cartographic methodologies. Community members are engaged in a participatory counter mapping workshop using GIS software, and walking interviews. The information gathered in both methodologies is evidentiary of the multiple ideas, experiences, and truths that exist in space and across time. A spatial analysis is then performed on the data collected, that culminates in an online mapping tool that writes the community from the view of its residents, and serve as a planning consulting and advocacy tool. The spatial analysis highlights the ways Black women move through and engage with space, and how this movement is shaped by current urban planning practices and policies.

Counter cartographies offer a vehicle through which Black Feminist Theory can be applied. Through using counter cartographic tools and methods, this study rewrites space through a gendered and racialized lens, and subverts the power imbalance that exists in traditional mapping. The final mapping tool includes the knowledges of Black women in Jane and Finch, and visualizes narratives of marginalized communities, voices, and geographies. This study investigates the use of counter cartographies as a vital planning tool towards creating more equitable communities where the needs of marginalized people are met, and their dreams and desires are written into their landscapes. Since urban planners regularly consult maps, I conclude that counter cartographies aid in centring the knowledges of Black women in a tool that underpins much of planning work, and thus ground planning in anti-colonial and anti-oppressive knowledges and practices.

Citations

- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241. <https://doi.org/10.2307/1229039>
- Hill Collins, P. (2014). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment* (2nd ed.). ROUTLEDGE.
- Lynch, K. (1960). *The Image of the City*. MIT Press.
- McKittrick, K. (2006). *Demonic grounds black women and the cartographies of struggle*. University of Minnesota Press.
- Thomas, J. M. (2004). Neighborhood planning: Uses of oral history. *Journal of Planning History*, 3(1), 50–70. <https://doi.org/10.1177/1538513203262047>

Key Words: Black Feminism, Counter Cartographies, Participatory Urban Planning, Spatial Equity

(IN)SECURITY, GENDER, AND URBAN SPACE: THE EXPERIENCES OF WOMEN AND CUERPAS DISIDENTES IN PUERTO RICO

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Recognizing that urban configuration is not neutral and how one navigates the city is shaped by diverse experiences, recent contributions made by feminist scholars and feminist movements in the past decades have called for a gender perspective in urban planning and design. According to Valdivia (2018), social characteristics determine the privileges and oppressions that we experience in our daily lives in the urban space. Some of these include gender, class, race, sexual identity, age or functional diversity, among others. The city, designed with an androcentric character, has failed to consider the plurality of needs and experiences of women and cuerpas disidentes in its configuration. Framed upon Ana Falú (2009) and other contributions (Vega, 2011; Ramos, 2021; Valdivia, 2018), we define cuerpas disidentes as bodies that challenge the politics and social norms of binary definitions of gender. Drawing on feminist critiques of Lefebvre's "right to the city" theorization, Pérez Sanz (2013) emphasizes the importance of reflecting on the countless violations gendered bodies are subjected to when exercising their rights to public spaces. These violations, such as sexual violence, street harassment, transphobia, and other forms of gendered violence, entail serious implications on patterns of movements, daily reproductive tasks, and matters of safety when women and cuerpas disidentes navigate the city. Several studies in the disciplines of geography, planning, and architecture have paid close attention to women and cuerpas disidentes' perceptions of (in)security in urban spaces. While there is scholarly literature found on the subject, there is a limited body of literature regarding the experiences of Caribbean women and cuerpas disidentes on these matters. This study seeks to contribute a particular focus on the experiences of Puerto Rican women and cuerpas disidentes' perceptions of (in)security when moving through public spaces in the urban center of Río Piedras.

Like many town centers in Puerto Rico, Río Piedras started as a colonial plaza surrounded by a grid system buzzing with housing and commerce. Due to its direct connection to the capital through the Carretera Central, it became the ideal transit and exchange hub between San Juan and the rest of the island. However, during the second half of the twentieth century, the combination of sub-urbanization efforts and large-scale shopping malls pushed citizens and local businesses out of the area. In addition, other migrating spatial and geographical limitations on a national level, such as an increase in migration to the United States (Ramos, 2021), have resulted in the loss of residential population in Río Piedras, leaving behind a shadow of what the urban center once was. Despite having the largest University of Puerto Rico (UPR) campus on the archipiélago a few blocks away and a culturally diverse population, community efforts have not been supported enough by the State to prevent its fragmentation. For these reasons, the deteriorating infrastructure, enclosed alleys, poor illumination, and the social-spatial implications of public disinvestment have contributed to the area's high incidence of street violence.

Driven by the increasing levels of gender violence in Puerto Rico and our own experiences navigating the urban center as gendered bodies studying at UPR, this action-research experience focused on urban design elements and their relation to perceptions of (in)security by women and cuerpas disidentes that either study-live-work-play Río Piedras. Using participatory mapping methodologies, walks, and community dialogues, we identified what elements in the urban space made participants perceive certain areas as more or less (in)secure.

Citations

- Pérez Sanz, P. (2013). Reformulating the concept of 'Right to the City': A feminist critique. *Encrucijadas*, 5, 92-105.
- Valdivia, B. (2018). From the androcentric urbanism to the caring city. *Hábitat y Sociedad*, (11). <https://doi.org/10.12795/HabitatySociedad.2018.i11.05>
- Ramos, R. (2021). San Juan queer: mobile apps, urban spaces, and LGBTQ identities. In R. Ramos & S. Mowlabocus (Eds.), *Queer Sites in Global Contexts* (pp. 14-32). Routledge.
- Vega Suriaga, E. (2011). Comments on the dossier How is 'queer' thought of in Latin America?. *Iconos. Revista de Ciencias Sociales*, (40), 119-127.
- Falú, A. (Ed.). (2009). *Mujeres en la ciudad. De violencias y derechos*. Ediciones SUR. Red Mujer y Hábitat de América Latina.

Key Words: space, gender, insecurity, feminist planning, right to the city

WHY INDIA'S TRANSPORT SYSTEM FAIL ITS WOMEN? GENDER SEGREGATION, SURVEILLANCE, AND TECHNOLOGY FETISHIZATION

Abstract ID: 1944

Individual Paper Submission

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In India, women's concerns in urban transportation primarily surfaced through the lens of safety in 2012 (ITDP, 2017; Mahadevi et. al, 2016), post the high-profile gang-rape case of a 23-year-old student on a moving bus in Delhi – the nation's capital. The Government of India, since then, has undertaken multiple initiatives to address women's mobility needs in cities in India. Some of the common interventions include increased real-time tracking of public vehicles, the introduction of CCTV cameras in public spaces, and the introduction of women-only helplines and women-only transportation services, among others. This paper presents a critical review and analysis of the state response to providing a safe and inclusive mobility environment, particularly for women in cities in India. In doing so, it highlights the limitations and gaps of this 'security-led' approach and how it fails women by not adequately accounting for their needs.

The article draws on the fieldwork undertaken in the northern state of Haryana in India between 2017-19. A diverse range of research methods, including on-site observations, document analysis, and in-depth interviews conducted with planning actors, women groups, and other stakeholders, are used to assess and challenge the current transport policies and planning approach, with a focus on identifying gaps and limitations of this 'security-led' approach.

The preliminary study findings indicate that the Indian state's response to women's mobility concerns can be grouped into three broad categories: gender segregation in public transport vehicles (Agrawal & Sharma, 2015), increased surveillance of public spaces (Banerjee & Loukaitou-Sideris, 2013), and heavy reliance on technology for quicker response to incidents of violence. The paper argues that this approach of the Indian government is not only reactive and scattered in nature, but also offers only a temporary solution to a much more complicated problem. Though in some ways, the security-led approach has led to an increase in the perceived sense of security among women on specific routes or transport modes, it however does not get to the root of the problem of gender-blindness in transport of gender-blindness in transport policies and planning practices. It instead creates new geographies of tension and gender-based conflict and reaffirms the patriarchal belief that 'women need protection.' The paper concludes with a discussion about the limitations of this 'security-led' policy response of the Indian government and suggests measures for a more comprehensive approach towards building more gender-sensitive mobility systems in cities in India.

The study findings would be of particular interest to transport planners and policymakers interested in gender-sensitive planning and policymaking in general and in special context to India.

Citations

- Agrawal, A., & Sharma, A. (2015). Gender Contests in the Delhi Metro: Implications of Reservation of a Coach for Women. *Indian Journal of Gender Studies*, 22(3), 421–436.
- Banerjee, T., & Loukaitou-Sideris, A. (2013). Suspicion, surveillance, and safety: A new imperative for public space?. *Policy, planning, and people: Promoting justice in urban development*, 337-355.
- ITDP. (2017). Women and Transport in Indian Cities: A Policy Brief. Retrieved from http://itdp.in/wp-content/uploads/2017/12/171215_Women-and-Transport-in-Indian-Cities_Final.pdf
- Mahadevia, D., Mishra, A., Joseph, Y., & Borah, T. (2016). Safe Mobility for Women Case of Guwahati Centre for Urban Equity (CUE).

Key Words: gender and mobility, women's mobility, transport planning, Transit security, gender-sensitive planning

WE THEE DISPLACED: INVESTIGATING HOW BLACK WOMEN NAVIGATE THEIR TRANSITION OUT OF GENTRIFYING NEIGHBORHOODS

Abstract ID: 1948

Individual Paper Submission

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Central theme

As gentrification rapidly reshapes historically disinvested neighborhoods, low-income African American communities have been a primary focal point for researchers. While scholars have critically analyzed this process primarily in terms of race and class-based inequality; few studies articulate how race, class, and gender dynamics intersect (Butler and Hamnett, 1994; Bondi, 1999) and contribute to why specifically low-income Black Women are often more vulnerable to displacement. Moreover, there is little research within the gentrification and displacement literature that follows

black women to their new locations post-displacement to understand what the transition process is like for them specifically. Meanwhile, Black Women are forced to grapple with rising housing costs, the social and physical transformation of their communities, and ultimately displacement to make way for more affluent households. Consequentially, the exclusion of their thoughts, concerns, and basic needs from the decision-making process is often followed by the greenlighting of demolition and/or new development projects that fuels their displacement. As a result, this qualitative study will pursue the following questions: (1) where do black women go post-displacement; (2) how do they navigate their transition out of gentrifying neighborhoods? and (3) how can their perspectives help inform effective anti-displacement policies and strategies designed to protect Black Women when their communities gentrify.

Approach/Methodology

Theoretically grounded in Black Feminist Thought, this study will collect primary and secondary data using semi-structured interviews and archival analysis, to investigating how low-income Black Women experience gentrification, survive displacement, and navigating their transition out of gentrifying neighborhoods. Following IRB approval, I will recruit participants through snowball and convenience sampling from multiple neighborhoods that have gentrified across the U.S. In addition, I will conduct an archival analysis of newspaper articles and reports that document black women's displacement and their participation in anti-displacement efforts after learning that their communities were being gentrified. Compensation to participants will be in kind services and assistance with connecting to needed resources and opportunities in their new locations. For my participant sample, I will purposefully seek a diverse array of identities and expressions to speak to the layered complexities that make up black women's lives (Collins, 2015; Crenshaw, 1990). I will transcribe and code each of the participant interviews, employ software to assist with analyzing the data for themes, and conclude with a full summary of the experiences shared.

Relevance

Gentrification is much more than the redevelopment of a neighborhood or an increase in the flow of capital into a non-affluent community. It is a multifaceted process of strategic community redevelopment that is socially, politically, economically, and culturally driven. When accompanied by displacement, it becomes a vicious process that changes the characteristics of a community by uprooting longtime residents, erasing local histories, and disrupting social networks and community institutions (Fullilove, 2004). For black women specifically, more research is necessary to understand the pressures that force their displacement; and how to create effective anti-displacement policies and strategies that protect them when their communities gentrify.

Citations

- Bondi, L. (1999). Gender, Class, and Gentrification: Enriching the Debate. *Environment and Planning D: Society and Space*, 17(3), 261–282.
- Butler, T., & Hamnett, C. (1994). Gentrification, Class, and Gender: Some Comments on Wardens 'Gentrification as Consumption.' *Environment and Planning D: Society and Space*, 12(4), 477–493.
- Collins, P. H., & Bilge, S. (2020). *Intersectionality*. John Wiley & Sons.
- Crenshaw, K. (1990). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stan. L. Rev.*, 43, 1241.
- Fullilove M.T. (2004). *Root Shock: How Tearing up City Neighborhoods Hurts America, and What We Can Do about It*. One World/Ballantine Books; New York, NY, USA.

Key Words: Black Women, Gentrification, Anti-Displacement, Black Feminist Theory

FRAMES OF BLACKNESS IN THE RACIALIZED PALIMPSEST CITY: AN INCORPORATED COMPARISON OF CHICAGO, ILLINOIS AND JOHANNESBURG, SOUTH AFRICA

Abstract ID: 1967

Individual Paper Submission

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This research, an incorporated comparison, explores the digital dialectic between local municipalities and Black-identified residents centering on the digital discursive practices and frames of Blackness enacted within municipal Twitter accounts of the cities of Johannesburg, South Africa and Chicago, Illinois.

The United States and South Africa, specifically, Chicago and Johannesburg, are exemplars of “archsegregation” (Nightingale, 2012). While Blackness was differently operationalized in the respective geographies, both histories derive from a singular racialized evolutionary arc based on the conceptualization, and centering of race, and humanity, within European whiteness and categorization of Blackness as “other,” and “nonhuman,” as theorized within Wynter’s archipelago of Human Otherness (Wynter, 2003).

Embedded in the fabric of urban form and function through the profession and practice of planning, the operationalization of these delineations transforms the modern city into a racialized palimpsest city, defined as an urban form in which historical racialized forms and functions remain not just politically, socially, and institutionally legible, but their presence and ineffective erasure alters and undermines new discursive content and contexts – continuing to inform the differentiated geospatial, health, social, and economic outcomes of Black communities.

As the most resident proximal unit of government with comprehensive economic, spatial, physical control over its residents, the city has become both the site, and source, of discourse and contestation of urban place and space. Following municipal adoption of social media tools, the sites of urban discourse now encompass both physical and digital space and place. While initially called “great equalizers,” social media practices are enacted from, and within, broader social, political, and economic matrixes derived from historic and contemporary choices centered on racialized otherness, geographically embedded over time. The continuation of racialized othering within urban (digital) discourse, harms through a “ubiquitous and deep-seated form of injustice, called ‘misrecognition’...whether out of malice or out of ignorance...[Misrecognition] subverts the possibility of equal democratic participation” (Harris-Perry, 2011).

In complementing ways, discourse analysis and framing analysis are both “preoccupied with how ideas, culture, and ideology are used, interpreted, and spliced together with certain situations or phenomena in order to construct particular ideative patterns through which the world is understood by audiences” (Lindekilde, 2014). This research strives to deepen the understanding of the frames of race (Blackness) embedded in municipal discourse to understand their ideologies, contextualizations, and motivations and most critically, how Black audiences engage, disengage or contest these representations.

Situated within a transnational Black feminist social matrix. This research applied integrated qualitative mixed-methods, including digital ethnography, grounded theory, frame analysis and Fairclough’s social change discourse analysis (Fairclough, 1992) to four-months of Twitter data collected from the respective cities between December 2019 and March 2020. Through this research, six latent frames used to enact Blackness, of which four were present in both geographies, emerged from within the data. Additionally, this research contributes an analysis of the contradictions present within democratizing municipal discursive practices enacted within existing hegemonic structures of control.

Citations

- Wynter, S. (2003). Unsettling the Coloniality of Being / Power / Truth / Freedom. *CR: The New Centennial Review*, 3(3), 257–337.
- Harris-Perry, M. V. (2011). *Sister Citizen: Shame, Stereotypes, and Black Women in America*. In Yale University Press. <http://ir.obihiro.ac.jp/dspace/handle/10322/3933>
- Fairclough, N. (1992). *Discourse and Social Change*.
- Nightingale, C. H. (2012). *Segregation: A Global History of Divided Cities*. The University of Chicago Press.

Key Words: Racialized Palimpsest City, Black Feminisms, Digital Discourse

EXPERIENCES OF WOMEN AND MINORITIES IN THE WORKPLACE: BIAS, UNFAIR TREATMENT, AND THE STATE OF DEI IN THE PLANNING INDUSTRY

Abstract ID: 1969

Individual Paper Submission

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Equity has been central to the planning profession for some time. The Code of Conduct for the AICP includes a section on working to provide economic, social, and racial equity in communities where planners practice. Recently, AICP has started requiring annual credit maintenance for equity training. However, there has been limited attention by scholars focused inward on diversity, equity, and inclusion within the planning profession itself (García et al. 2020; García et al. 2021; Jackson et al. 2020; Lee et al. 2020; Transportation Research Board, 2021). Focusing on positions around DEI within the profession and tools for changing DEI outcomes, I ask: how do women and racial/ethnic minorities vary in their assessment of DEI relative to men and the white majority?

This paper is based on a survey that was designed through deliberations within the DEI committee and feedback from the Board at APA Colorado. Topic areas covered in the survey included workplace environment, perspectives on DEI in the planning field, and questions about how to make improvements in those areas. A series of Likert-scale questions were used to collect information on attitudes around how DEI is experienced by planners. Specifically, anxieties about career development, inclusiveness of opinions, work-life balance, and flexibility, examined through a DEI lens, were part of the attitudinal statements. The survey was disseminated online during April-May 2021, with

1,695 completed of which 397 (23%) were retained for the analysis after detailed checks.

Using this data, I examined consensus about two ideas in the planning profession. First, that positions around DEI were well thought through, and second that tools existed for employers to improve on DEI outcomes in the workplace. Using a series of bivariate and multivariate analyses, I examined how planners across cohorts by gender and racial/ethnic identities varied in their assessment of the state of DEI in the profession. Specifically, I developed latent constructs to capture notions of DEI relying on collected attitudinal data, and used discrete choice models to examine consensus about DEI. I relied on a thematic analysis of open-ended responses to foreground lived experiences that emerged in the statistical analysis.

Most (89%) respondents felt like they belonged in their workplace. However, when the responses were broken down by gender and race/ethnicity, women and people of color reported not belonging in the workplace at higher rates than their counterparts. A majority (86%) reported that they had experienced some sort of bias. This worrying finding indicates that very few planners taking this survey have been able to escape bias in the workplace. Particularly, individuals who identify as female and people of color reported experiencing bias at even higher rates than their counterparts. Overall, almost half of respondents said they had been treated unfairly. When asked to discuss details of their unfair treatment, many reported some sort of in-group and out-group in their workplace. Respondents mentioned a “boys club” or not respecting opinions of younger, less experienced planners. Unfair compensation and promotions were also commonly mentioned. When asked about DEI principles in the planning workplace, only about half of the respondents agreed that DEI is well thought through in the profession, or that DEI tools exist in their workplace; this is a cause for concern. Evidence provided through open-ended commentary suggested that leadership is particularly important in the work environment, as is building a community of allies to counteract the systemic bias inherent in the planning industry.

Citations

- García, I., Jackson, A., Harwood, S.A., Greenlee, A.J., Lee, C.A., Chrisinger, B., 2020. “Like a Fish Out of Water” - The Experience of African American and Latinx Planning Students. *Journal of the American Planning Association* 0, 1–15. <https://doi.org/10.1080/01944363.2020.1777184>
- García, Ivis, April Jackson, Andrew J. Greenlee, Anaid Yerena, Benjamin Chrisinger, and C. Aujean Lee. 2021. “Feeling like an ‘Odd Duck’ - The Experiences of African American/Black and Hispanic/Latin/o/a/x Planning Practitioners.” *Journal of the American Planning Association* 0 (0): 1–15. <https://doi.org/10.1080/01944363.2020.1858936>
- Jackson, April, Ivis Garcia, Benjamin Chrisinger, Andrew Greenlee, C. Aujean Lee, and Anaid Yerena. 2020. Diversity Climate Survey— Moving from Aspiration to Action: Reorienting Planners Values towards Equity, Diversity, and Inclusion. <https://doi.org/10.13140/RG.2.2.34937.29289>
- Lee, C.A., Chrisinger, B., Greenlee, A.J., Garcia Zambrana, I., Jackson, A., 2020. Beyond Recruitment: Comparing Experiences of Climate and Diversity between International Students and Domestic Students of Color in U.S. Urban Planning Programs. *Journal of Planning Education and Research* 0739456X20902241. <https://doi.org/10.1177/0739456X20902241>
- Transportation Research Board, National Academies of Sciences, Engineering, and Medicine, 2021. Attracting, Retaining, and Developing the Transportation Workforce: Transportation Planners. The National Academies Press, Washington, DC. <https://doi.org/10.17226/26429>

Key Words: DEI, Women, Race, Minority, Planning

BRUNCHING WHILE BLACK: AN ETHNOGRAPHIC STUDY OF BLACK JOY AND PLACEMAKING IN AMERICAN CITIES

Abstract ID: 2015

Individual Paper Submission

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Often located in the historic (and gentrifying) downtown districts of predominantly Black American cities, Trap Brunch is a cultural repository for Black millennials, acting as a centralized and weekly hub of fashion, dance, and communal fellowship. The research project examines the ways in which an ascendant Black Millennial middle class is co-opting historically white elite cultural practices, specifically weekend brunches. The hybridizing of elite conspicuous consumption with Black cultural production is analyzed through the study of trap brunches in three major U.S. cities, each associated with a distinct Black urban experience: Atlanta, Georgia; Detroit, Michigan; and Washington, D.C. Brunch, historically a family affair for middle-class and affluent white Americans, has evolved to a decadent weekend tradition for urban millennials and Trap Brunch, has emerged in recent years as a themed variant proliferated by their Black counterparts.

Using a mixed method approach that employs both ethnographic interviews and participant observation in all three study sites, I detail how Trap Brunch provides a vibrant, analytical lens through which to witness Black Millennials

fusing place-making and Black American cultural production in subversive ways and in historic spaces. Trap music, a hip hop subgenre emerging in the American South in the mid-2000s, is known for gritty street narratives that detail the illicit drug trade and the increasing economic disparities that fall squarely along racial cleavages in the United States. The merger of trap music and brunch cuisine is not coincidental or random but rather is the intersection of economic ascendancy and staunch reminders of the structural barriers and violence that many Black millennials are transcending in order to enjoy bottomless mimosas and eggs benedict. Trap Brunch (and its R&B-themed variants) acts as a site of Black joy, optimism, and kinship immersed in the soundtrack of Black resilience and nourished by ancestral Southern fare.

Citations

- Bower, A. (Ed.). (2008). African American foodways: Explorations of history and culture (Vol. 21). University of Illinois Press.
- Haymes, S. N. (1995). Race, culture, and the city: A pedagogy for Black urban struggle. SUNY press.
- Hunter, M. A., Pattillo, M., Robinson, Z. F., & Taylor, K. Y. (2016). Black placemaking: Celebration, play, and poetry. *Theory, Culture & Society*, 33(7-8), 31-56.
- Ternikar, F. (2014). Brunch: A History. Rowman & Littlefield.
- Woods, C. (2007). Sittin' on top of the world: The challenges of blues and hip hop geography. *Black geographies and the politics of place*, 46-81.

Key Words: Black joy, brunch, ethnography, placemaking, trap music

WOMEN LIVING IN SHARED HOUSING: EXPERIENCE OF COMING OF AGE AND MOVING OUT IN SOUTH KOREA

Abstract ID: 2035

Individual Paper Submission

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The experience of home varies depending on gender, class, and age. Especially between adolescence and adulthood, the experience Korean men and women have in their family's home is distinct due to patriarchal norms derived from Confucianism rooted in modern Korean society. In a patriarchal family, gender division of consumption and production is salient between daughters and sons, where daughters focus on household labor and sons on economic production (Hagan et al., 1987). The gendered experience differentiates how individuals perceive and create the meaning of their home. For the adults who have failed to leave their parents' house, following their transition to adulthood, home is a place where parental domination operates. However, the strict rules tend to be more weighted on women. The women were perceived to have a lack of privacy through being violated by the restrictions on their body and sexuality (White, 2002).

Currently, in South Korea, 86% of the residents living in shared housing are women in their twenties. This article seeks to identify the reasons for the lopsided phenomenon through women's experience of coming of age and moving out of their family home. The circumstances of young women in their 20s, whose age is in the distinctive stage between adolescence and adulthood, is defined as Emerging Adulthood, a stage in the life cycle first coined by Arnett (2000). The study examined the conflicts and compromises between the familism and individualization of young adults trying to achieve autonomy from their parents. The in-depth interviews were conducted with people in the stage of Emerging Adulthood, who were living or have experienced living in house-sharing.

The result showed that Korean women choose shared housing as the first autonomous space for several reasons. When making decision to move out, women face a limited choice of the dwelling due to their gender. They are concerned about the safety of urban spaces and fear of crime (Young, 1990). Second, they are constrained by stigmatizing views on women who live alone, created by the males and older generations (Song, 2010). Third, because they receive financial help from their parents, they are required to obtain parental permission for their choice. As a result, women end up in shared housing exclusively for women. Parents allow shared housing because the sexuality of their daughter can be controlled and watched at a minimum level. Hence, though physically away from families, women cannot fully achieve autonomous space because of the ways in which shared housing operates by having public and private spaces inside the house.

In conclusion, shared housing has a similar nature to young people in their emerging adulthood stage. A temporary dwelling that serves as a steppingstone from lower to upper housing, providing an incomplete space rather than the fully autonomous space. The implication of this study is to take gender perspective into account of how individuals consume and make choices regarding dwellings. It is not merely by personal reasons but by genderized social views and spatial exclusion inherent in urban spaces. Also, this study points out the limitations and possibilities of shared housing which in previous studies were not interpreted in terms of social and cultural terms.

Citations

- Hagan, J., Simpson, J., & Gillis, A. R. (1987). Class in the household: A power-control theory of gender and delinquency. *American journal of sociology*, 92(4), 788–816.
- White, N. R. (2002). “Not under my roof!” - Young people’s experience of home. *Youth and Society*, 34(2), 214–231.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, 55(5), 469.
- Jesook, Song (2010) ‘A room of one’s own’: the meaning of spatial autonomy for unmarried women in neoliberal South Korea, *Gender, Place & Culture*, 17(2), 131-149

Key Words: Gender, Housing, Emerging Adulthood, South Korea

POLICING IN AMERICAN INDIAN RESERVATIONS: A CASE STUDY OF TRIBAL SOVEREIGNTY AND INTER-GOVERNMENTAL COORDINATION

Abstract ID: 2055

Individual Paper Submission

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Within the United States, 573 federally recognized tribes exist as sovereign governments, and as such are responsible for the direct provision of services to residents of their reservations as well as their tribally enrolled citizens, wherever they may live. To date, research on tribal governance within the field of planning (Barry and Porter, 2012; Zafateros, 2015; Webster, 2016) and public administration and management has been limited (Ronquillo, 2011; Evans, 2011). In particular, the ways in which state and local governments should and do interact and work with tribes is rarely researched, nor are the basic principles of tribal sovereignty and native rights typically taught to planners in the United States. Yet, this is an important knowledge basis for intergovernmental relations that are rightfully respectful of tribal sovereignty and are well informed about American Indians’ rights and contexts across an array of planning and other public policy areas (Quick, 2021).

Policing and public safety are particularly important aspects of this relationship. As with other non-White populations in the U.S., law enforcement is one of the key points of contact with government for many Native people. Manifestations of coordination among Native- and non-Native police departments, emergency responders, and court systems is central to coercive and welfare tensions, legitimacy, authority, and equity in the context of the U.S. settler-colonial state (Dunbar-Ortiz 2021) and the historically patronizing “ward/guardian” dynamic of the U.S. government’s relationships with native people (Anderson et al., 2015). In a confusing over-write of sovereignty in some U.S. states, Public Law 280 allows state and county police to make arrests for felonies and misdemeanors in reservations (French, 2015); conversely, tribal law enforcement may or may not have authority on and off the reservation (Fletcher et al., 2010).

In this paper, I analyze ethnographic and survey data on police interactions around roadway safety in American reservations as a case study in tribal sovereignty and inter-governmental coordination. Data are drawn from four case studies conducted in partnership with the tribal governments of Red Lake, Fond du Lac, Leech Lake, and Mille Lacs in Minnesota, which involved extensive ethnographic fieldwork (90 days), interviews (n=102), focus groups (n=8), and brief surveys with residents (n=220) (Quick and Narváez, 2017). We interviewed both tribal government leaders and their counterparts in county, city, and state government agencies with overlapping – and indeed often ambiguous and competing – jurisdiction and responsibility for policing and public safety.

Analysis of the data uncovers strong interdependence between tribes and local governments in three areas of roadway safety, including law enforcement. Despite interdependence, actual practice is mixed. Often, local governments challenge tribal sovereignty out of hostility and/or ignorance. In other areas, tribes and local governments coordinate well in selected areas (e.g., mutual aid between county and tribal law enforcement), or actively cultivate synergy to enhance safety (e.g., pooling resources for road improvements, collaborating on safe routes to school infrastructure).

I conclude the paper with a brief discussion of the implications of the study for urban and regional planning and governance research, education, and practice on equity, tensions of state authority, and Native sovereignty.

Citations

- Webster, R. M. (2016). This land can sustain us: Cooperative land use planning on the Oneida Reservation. *Planning Theory and Practice*, 17(1), pp. 9-34

- Zaferatos, N. C. (2015). Planning the American Indian reservation: From theory to empowerment. Syracuse University Press.
- Barry, J., & Porter, L. (2012). Indigenous recognition in state-based planning systems: Understanding textual mediation in the contact zone. *Planning Theory*, 11(2), 170–187.
- Evans, L. E. (2011). Power from Powerlessness: Tribal Governments, Institutional Niches, and American Federalism. Oxford University Press.
- Quick, K.S. (2021) “Tribal sovereignty and the limits and potential of intergovernmental collaboration in the U.S.” *Handbook on Collaborative Public Management*. Jack Meek, editor. Northampton, MA: Edward Elgar Publishing, pp. 253-267.

Key Words: Tribal sovereignty in the United States, Equity and power in urban and regional planning, Policing and public safety, Inter-governmental coordination, Ethnographic methods

Track 5 Posters

HOW FAMILY NETWORKS AFFECT THE QUALITY OF LIFE AND HAPPINESS OF MARRIED WOMEN IN KOREA

Abstract ID: 1883

Poster

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Research Question

For married women, who are in an important position in the family network and have to maintain a balance between both work and family, the advantage of a family network may be that it promotes intimate dialogue and enables physical and economic mutual assistance beyond simply connecting family members. The purpose of this study is to empirically analyze which factors among the social capital possessed by the family network affect the quality of life and happiness of married women.

Data and Methods

This study obtained data on 6,577 married women from the seventh wave of the Korean Longitudinal Survey of Women and Families (KLoWF) (2018). KLoWF data includes information about whether the respondent's family members live together, and whether or not they give or receive financial help. It also contains specific information on the type and frequency of conversations being held within the family network. In this study, the number and types of connections with family members were used as key explanatory variables for measuring the advantages of family networks, which were analyzed in terms of the degree of economic help and the types of conversations between family members.

The health-related quality of life perception of an individual (QoL), which is a dependent variable, is related to five areas: exercise ability, self-management, daily activities, pain/discomfort, and anxiety/depression. As a collection of individual perceptions of each level, a binomial variable was constructed, in which 0 indicates there was a problem in each category and 1 indicates there was not. Another dependent variable, happiness (Happiness), was composed of a continuous variable with a 1 assigned to the answer being “very unhappy” and a 10 for being “very happy” in response to the question of how happy one is.

This study employed logistic regression to identify the effect of family networks on quality of life (see Model 1). As seen in Model 2, this study also empirically analyzed how family networks affect married women's happiness by using the ordinary least squares model. Both the number and types of connections married women have with their family members—assessed according to the degree of economic help they receive and the types of conversations among family members—were used to measure the advantages of strong family networks.

Findings

An increase in additional family member types with whom married women frequently converse positively impacts married women's quality of life and well-being. In contrast, an increase in additional family member types based on economic help negatively impacts married women's quality of life and well-being. In fact, this study affirms the effects of family networks in the Korean context, suggesting that an increase in networks based on abundant opportunities

for conversations may positively impact individual happiness rather than simply increasing the varied types of connection.

Implications

In terms of government policy and urban planning, it is important to not simply increase the size of the network and implement a policy to connect its members but also to establish a network that allows members to regard each other as close in order to increase the social capital of family relations. For example, community facilities, open spaces, and public spaces can be created so that individuals can communicate and feel intimacy. This study suggests that not only the economic aspect but also the emotional and cognitive aspects should be considered in the policymaking for urban welfare promotion.

Citations

- Mulder, C. H., & Malmberg, G. (2014). Local ties and family migration. *Environment and Planning A*, 46(9), 2195-2211.
- Wu, W., Stephens, M., Du, M., & Wang, B. (2019). Homeownership, family composition and subjective wellbeing. *Cities*, 84, 46-55.
- Li, T., & Zhang, Y. (2015). Social network types and the health of older adults: Exploring reciprocal associations. *Social Science & Medicine*, 130, 59-68.
- Keim, S., Klärner, A., & Bernardi, L. (2009). Qualifying social influence on fertility intentions: Composition, structure and meaning of fertility-relevant social networks in Western Germany. *Current sociology*, 57(6), 888-907.
- Bernardi, L., & Klärner, A. (2014). Social networks and fertility. *Demographic research*, 30, 641-670.

Key Words: Family Network, Quality of Life, Life Satisfaction, Married Women

Track 6 – Housing

Track 6 Pre-Organized Session Summaries and Abstracts for the Sessions

RESIDENTIAL MOBILITY AND NEIGHBORHOOD TRAJECTORIES

Pre-Organized Session 14 - Summary

Session Includes 1149, 1150, 1151, 1152, 1153

PARKER, Madeleine [University of California Berkeley] madeleine.parker@berkeley.edu, organizer

Neighborhood characteristics have significant implications for household outcomes. The types of neighborhoods residents move to, in comparison to their origin neighborhoods, are very important. The papers in this session examine residential mobility outcomes in relation to factors including rezoning, gentrification, and housing policy. How do these factors influence residential moves and the types of neighborhoods households move to? Residential mobility has historically been hard to study due to a lack of longitudinal household data: by using unique proprietary data on individual households and moves, these papers shed new light on residential mobility in relation to different causes.

Objectives:

- To understand how different factors, including rezoning, gentrification, and housing policy, influence residential mobility and the types of neighborhoods households move to
- To understand how residential mobility and neighborhood trajectories are moderated by household demographics as well as planning factors

RESIDENTIAL MOBILITY OUTCOMES AFTER LEAVING HOUSING ASSISTANCE: THE ROLE OF LOCAL HOUSING MARKET CONDITIONS

Abstract ID: 1149

Abstract within Pre-Organized Session 14

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Relatively few studies have assessed the experiences of households that leave HUD-assisted housing, particularly with respect to the role of local housing market conditions in determining household outcomes. Most research focuses on outcomes for households currently living in public housing and/or for those who receive a voucher, but understanding what happens after a household leaves subsidized housing can provide insights into whether HUD programs provide a ladder for upward mobility, or whether the loss of subsidy leads to negative outcomes such as subsequent housing instability and/or worsening neighborhood conditions. In this paper, we examine the housing trajectories of households who leave HUD-assisted housing, focusing on housing tenure, housing stability, and neighborhood attainment. Specifically, we consider how leaving HUD-assisted housing influences subsequent housing and neighborhood outcomes, as well as how these outcomes differ within different local housing market contexts. Does an exit from HUD-subsidized housing lead to moves to higher or lower poverty neighborhoods? Are these exits associated with moves within particular housing submarkets? What household and housing market factors influence those outcomes? To answer these questions, we match HUD administrative data with annual residential address data from Data Axle between 2006 and 2020 to track residential moves. We find some neighborhood improvements for those who leave housing assistance overall, but also observe significant variation due to local housing market costs and dynamics related to racial segregation.

Citations

- Ambrose, B. W. (2005). A Hazard Rate Analysis of Leavers and Stayers in Assisted Housing Programs. *Cityscape*, 8(2), 69–93.
- McClure, K. (2018). Length of stay in assisted housing. *Cityscape*, 20(1), 11–38.
- Smith, R. E., Popkin, S. J., George, T., & Comey, J. (2015). What Happens to Housing Assistance Leavers? *Cityscape*, 17(3), 161–192.
- South, S. J., Crowder, K., & Chavez, E. (2005). Exiting and Entering High-Poverty Neighborhoods: Latinos, Blacks and Anglos Compared. *Social Forces*, 84(2), 873–900. <https://doi.org/10.1353/sof.2006.0037>

- Wiesel, I., Pawson, H., Stone, W., Herath, S., & Mcnelis, S. (2014). Social housing exits: Incidence, motivations and consequences (AHURI Final Report No. 229). Australian Housing and Urban Research Institute. <https://ro.uow.edu.au/buspapers/1129>

Key Words: housing subsidies, neighborhood quality, housing markets, residential mobility

REZONING AND RESIDENTIAL MOBILITY IN SEATTLE, WA

Abstract ID: 1150

Abstract within Pre-Organized Session 14

PARKER, Madeleine [University of California, Berkeley] madeleine.parker@berkeley.edu, presenting author

In response to rising housing costs and supply constraints, many cities are considering upzoning—rezoning to allow for increased density. However, there are concerns about potential impacts on current residents: How will upzonings and possible housing price changes affect residents in upzoned areas? Who will be moving into upzoned neighborhoods, and will there be displacement of current residents? This paper examines the processes of residential mobility and neighborhood change in relation to upzonings and inclusionary housing policies in Seattle, WA.

There is ongoing debate on the impacts of upzonings on housing outcomes, including supply, cost, and neighborhood change. While anti-density restrictions have been associated with higher levels of segregation (Rothwell, 2011), recent research in New York City has found that upzonings are associated with neighborhoods becoming whiter (Davis, 2021). Neighborhood change, along with income, has been associated with residential mobility (Greenlee 2019). However, residential mobility in relation to upzoning has been understudied, in part due to the recency of many upzonings and to the difficulty in tracing household locations over time. There is recognition of the association of neighborhood characteristics with economic, social, and health outcomes (Galster & Sharkey, 2017), and academics have described a lack of research linking neighborhood change to residential mobility (Ellen & O'Regan, 2010). This paper uses the case of Seattle to examine the effects of upzoning on both residential mobility and neighborhood change.

In the 1990s, the City of Seattle began to target new growth and transportation improvements to designated “Urban Village” neighborhoods across the city. Upzoning and inclusionary housing policies were implemented in six of these Urban Villages in 2017, expanding to 27 neighborhoods in 2019. Inclusionary housing policies, requiring new development to include a portion of affordable units or contribute to a fund for affordable housing, aim to increase affordability and reduce potential displacement. Seattle provides a useful site for this research, as it allows examination of the impacts of upzoning accompanied by inclusionary housing programs across different types of neighborhoods.

I use a combination of spatial and econometric analysis to examine the impacts of these upzoning and inclusionary housing policies on residential mobility and neighborhood change. To understand neighborhood change, I use data on neighborhood characteristics and housing cost over time (2010–2021) to understand how these upzoned neighborhoods are changing, in comparison to other neighborhoods, prior to and after the upzonings. To understand residential mobility, I use a proprietary household-level dataset to trace moves over time, looking at residents moving into and out of upzoned neighborhoods both before and after zoning changes (2014–2021). Analyzing the characteristics of neighborhoods households are moving to, in terms of housing cost and transportation access, among other factors, helps me understand how they compare to the original upzoned neighborhoods. Similarly, examining household and neighborhood characteristics of households moving into the upzoned neighborhoods allows me to get a sense of the types of moves these households are making.

This research holds significant implications for understanding the impacts of upzoning policies on residential mobility and neighborhood change in US cities.

Citations

- Davis, J. (2021). How do upzonings impact neighborhood demographic change? Examining the link between land use policy and gentrification in New York City. *Land Use Policy*, 103, 105347. <https://doi.org/10.1016/j.landusepol.2021.105347>
- Ellen, I., & O'Regan, K. (2010). How Low Income Neighborhoods Change: Entry, Exit, and Enhancement. *Regional Science and Urban Economics*, 41, 89–97. <https://doi.org/10.2139/ssrn.1687759>
- Galster, G., & Sharkey, P. (2017). Spatial Foundations of Inequality: A Conceptual Model and Empirical Overview. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 3(2), 1–33. <https://doi.org/10.7758/rsf.2017.3.2.01>
- Greenlee, A. J. (2019). Assessing the Intersection of Neighborhood Change and Residential Mobility Pathways for the Chicago Metropolitan Area (2006–2015). *Housing Policy Debate*, 29(1), 186–212. <https://doi.org/10.1080/10511482.2018.1476898>

- Rothwell, J. T. (2011). Racial Enclaves and Density Zoning: The Institutionalized Segregation of Racial Minorities in the United States. *American Law and Economics Review*, 13(1), 290–358. <http://www.jstor.org/stable/42705595>

Key Words: Residential mobility, Upzoning, Neighborhood change, Housing policy, Zoning

DOES GENTRIFICATION PROMOTE INCOME AND RACIAL DIVERSITY? EVIDENCE FROM NEW YORK CITY AND SAN FRANCISCO BAY AREA (2013-2019)

Abstract ID: 1151

Abstract within Pre-Organized Session 14

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An ongoing debate concerning gentrification is whether it increases diversity in affected areas (Ellen, 2017). Gentrification is often understood as a process of neighborhood ascent that involves an influx of wealthier households into previously disinvested inner-city areas, which could ultimately prompt income and racial integration. However, gentrification could also result in the displacement of low-income and minority households, leading to stagnant or even decreased diversity. Planners and researchers will need to better understand these relationships to facilitate equitable urban development while developing and implementing policies that protect vulnerable populations.

Unfortunately, scholarship on this topic is scarce and fails to explicitly connect the relationship between neighborhood diversity and displacement of vulnerable populations. Using census tract-level decennial census data from 1970 to 2000, Freeman (2009) reported that gentrifying areas in US Metropolitan areas did not experience a decrease in class or racial diversity. However, the study is based on descriptive aggregate data with long intervals, which prohibits observation and statistical testing of short-term neighborhood dynamics as well as population movements. Moreover, the study generalizes outcomes across metropolitan areas with very different characteristics. While more empirical studies examined the impacts of gentrification on displacement, they did not find critical evidence of gentrification-induced displacement, potentially due to the lack of adequate longitudinal data (Easton et al., 2020). Moreover, these studies focused on household mobility outcomes and did not discuss how they relate to neighborhood-level sociodemographic characteristics.

This study aims to investigate the relationships between gentrification and income and racial diversity by comparing outcomes for two distinct metropolitan areas, New York City (NYC) and San Francisco Bay Area (SFB), from 2013 to 2019. Using Chapple et al.'s (2021) gentrification measurement and entropy diversity indices employed by Freeman (2009), we proceed with our analysis in two stages. In the first stage, we analyze American Community Survey (ACS) block group-level data to investigate if gentrifying areas experience a higher growth or decline in income and racial diversity compared to other areas. We analyze the data using multilevel growth models to consider potential spatial and temporal autocorrelation between the observations. In the second stage, we analyze the Infogroup US Consumer Dataset, an annually collected household-level longitudinal dataset, to study if the probabilities of moving in and moving out vary for different income and racial groups and for neighborhood types. We employ multilevel models to control for household and neighborhood-level covariates.

Preliminary results indicate that gentrifying areas start with low levels of income diversity but experience a much more substantial growth than non-gentrifying and non-vulnerable neighborhoods in both NYC and SFB. Although racial diversity increased in gentrifying areas, this growth was not significantly higher than in other neighborhood types. Preliminary results also suggest that low-income households in gentrifying neighborhoods were significantly more likely to move out compared to other neighborhood types in both regions. We connect these findings to discuss if the changes in diversity in gentrifying neighborhoods stem from incumbent residents' changes in income or population movement. We also discuss if the changes in neighborhood diversity are attributable to the residential mobility of certain income and race groups. We then build on our conclusion to provide implications for policy and research.

Citations

- Chapple, K., Poorthuis, A., Zook, M., & Phillips, E. (2021). Monitoring streets through tweets: Using user-generated geographic information to predict gentrification and displacement. *Environment and Planning B: Urban Analytics and City Science*, 23998083211025308. <https://doi.org/10.1177/23998083211025309>
- Easton, S., Lees, L., Hubbard, P., & Tate, N. (2020). Measuring and mapping displacement: The problem of quantification in the battle against gentrification. *Urban Studies*, 57(2), 286–306. <https://doi.org/10.1177/0042098019851953>
- Ellen, I. (2018). Can Gentrification be Inclusive? In *A Shared Future: Fostering Communities of Inclusion in an Era of Inequality* (pp. 334-339). Joint Center for Housing Studies of Harvard University.

<http://www.jchs.harvard.edu/research/books/shared-future-fostering-communities-inclusion-era-inequality>

- Freeman, L. (2009). Neighbourhood Diversity, Metropolitan Segregation and Gentrification: What Are the Links in the US? *Urban Studies*, 46(10), 2079–2101. <https://doi.org/10.1177/0042098009339426>

Key Words: Gentrification, Income Diversity, Racial Diversity, Residential Mobility, Neighborhood Change

THE IMPACT OF REZONING ON LOCAL HOUSING SUPPLY AND DEMAND: EVIDENCE FROM NEW YORK CITY

Abstract ID: 1152

Abstract within Pre-Organized Session 14

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Housing affordability has continued to be a challenge that many large, economically successful cities face in the United States. Literature points to the role that limited housing supply and stringent land-use regulations play in exacerbating the housing affordability crisis in these cities (Gyourko and Molloy, 2015). Some local governments try to tackle this issue by relaxing land-use regulations and increasing the residential capacity of land that can be developed. This type of “upzoning” policy aims to increase housing supply and lower local rents. However, upzoning can also create amenity effects that attract high-income households and lead to gentrification. This raises concerns that incumbent residents living in these neighborhoods will face higher rents and increased risk of displacement (Hwang and Ding, 2020). The incumbent residents, especially low-income renters, may be displaced to higher-poverty or lower-opportunity neighborhoods, worsening urban inequality.

Housing affordability has continued to be a challenge that many large, economically successful cities face in the United States. Literature points to the role that limited housing supply and stringent land-use regulations play in exacerbating the housing affordability crisis in these cities (Gyourko and Molloy, 2015). Some local governments try to tackle this issue by relaxing land-use regulations and increasing the residential capacity of land that can be developed. This type of “upzoning” policy aims to increase housing supply and lower local rents. However, upzoning can also create amenity effects that attract high-income households and lead to gentrification. This raises concerns that incumbent residents living in these neighborhoods will face higher rents and increased risk of displacement (Hwang and Ding, 2020). The incumbent residents, especially low-income renters, may be displaced to higher-poverty or lower-opportunity neighborhoods, worsening urban inequality.

Existing literature on zoning policy has primarily focused on the relationships between land-use regulations, housing construction, and housing prices by exploiting the variation across metropolitan areas or over municipal boundaries. Few studies have examined how large-scale changes in land-use regulations over time, such as rezoning, affect local housing prices and rents given the rarity of such events and challenges in acquiring data (Freemark, 2020). There are also very few studies that examine the effect of rezoning on neighborhood change and mobility patterns of incumbent residents. This paper will address this gap in the literature.

In this paper, I study the effect of 2004–2013 New York City upzoning on local housing supply, prices, rents, and residential mobility using a difference-in-difference method. By exploiting the granularity of the data at the building level and the plausibly exogenous boundary of upzoned areas, I compare the upzoned areas and the areas slightly farther away from the boundary before and after upzoning. This paper also uses unique data with individual-level address history to examine the mobility patterns of in-migrants and incumbent residents in the upzoned areas. Specifically, I ask the following questions: Does upzoning change the socioeconomic and demographic characteristics of in-migrants? Are incumbent residents more likely to move and be displaced to less desirable neighborhoods after upzoning? If so, which groups of incumbent residents are more likely to be displaced? Preliminary results on housing supply and prices show that developers took up the opportunity to build and that housing supply increased after upzoning. However, there is also suggestive evidence of increased housing prices, especially among condo properties.

Citations

- Freemark, Y. (2020). Upzoning Chicago: Impacts of a zoning reform on property values and housing construction. *Urban Affairs Review* 56(3), 758–789.
- Gyourko, J. and Molloy, R. (2015). Regulation and housing supply. In Duranton, G., Henderson, J. V., and Strange, W. C., editors, *Handbook of Regional and Urban Economics*, volume 5 of *Handbook of Regional and Urban Economics*, pages 1289–1337. Elsevier.
- Hwang, J., & Ding, L. (2020). Unequal Displacement: Gentrification, Racial Stratification, and Residential Destinations in Philadelphia. *American Journal of Sociology*, 126(2), 354–406.

Key Words: Upzoning, Rezoning, Residential Mobility, Gentrification, Housing Affordability

RESIDENTIAL MOBILITY IN AND OUT OF BLACK NEIGHBORHOODS SINCE 1970

Abstract ID: 1153

Abstract within Pre-Organized Session 14

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This paper examines residential mobility in and out of Black neighborhoods in U.S. cities. Starting in 1970, a key inflection point in the history of Black neighborhoods (and urban America more generally), this paper identifies a sample of Black neighborhoods and traces movements in and out of these neighborhoods, and the impacts on individuals and neighborhoods alike.

The conventional understanding of the Black neighborhood from 1970 through the early 21st century – often a site of population and socioeconomic decline – is limited in at least two ways. First, we do not know what role household mobility played in these trajectories of neighborhood change. Second, household mobility decisions remain opaque in the literature, and the role of neighborhood racial composition is unclear in those decisions, particularly with respect to Black households and neighborhoods.

Using data from the U.S. Census, I first identify a sample of neighborhoods where Blacks constitute the largest racial or ethnic group in the decennial census years and the 2015-19 wave of the American Community Survey. The number of Black census tracts more than doubles during this time period, in spite of substantial declines in Western metros, buttressed by large gains in the South. Two broad patterns emerge. First, there has been a slow but steady convergence of outcomes between Black and non-Black neighborhoods. Second, there is a great diversity in Black neighborhood conditions - at the broadest level, conditions in Black neighborhoods in the Midwest are far worse than those in the South and especially the West, where Black neighborhoods are virtually disappearing. Two Southern metros - Washington, DC and Atlanta - stand out as having a large and growing number of solidly middle class Black neighborhoods. Median incomes in Black neighborhoods in Washington, DC are substantially higher than even non-Black neighborhoods in many metros.

Using the Panel Study of Income Dynamics (PSID) and InfoUSA, a consumer database, I examine the consequences of residential mobility in and out of these neighborhoods. The PSID offers rich information on a smaller sample (5,000) of households going back to 1968, with several observations on a consistent panel over time. Infutur provides data on virtually every household with a residential address in the U.S. from 2007 to 2019. These data include location information on origin and destinations, for multiple moves per individual. These allow me to see whether in-movers to and leavers from Black neighborhoods are making “positive” moves to neighborhoods with greater opportunity, or if they are making “negative” moves to neighborhoods with greater disadvantage. I can further identify what types of Black neighborhoods are the ones in which positive and negative moves are made to and from, and identify whether particular neighborhood types appear to be stepping stones to neighborhoods with higher opportunity.

Planning decisions shape neighborhood conditions, and the potential for households to access neighborhoods with stronger neighborhood opportunity. In many metropolitan areas, Black neighborhoods are facing gentrification pressures and rising rents. Understanding who is moving in and out of these neighborhoods, and how these movements relate to both neighborhood and household outcomes is key to developing planning practices that support these neighborhoods and allow incumbent residents to remain.

Citations

- Freeman, Lance. 2019. *A Haven and a Hell: The Ghetto in Black America*. Columbia University Press.
- Massey, Douglas S., and Nancy A. Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Harvard University Press.
- Sander, Richard H., Yana Kucheva, and Jonathan M. Zasloff. 2018. *Moving toward Integration: The Past and Future of Fair Housing*. Harvard University Press.
- Delmelle, Elizabeth C. 2017. “Differentiating Pathways of Neighborhood Change in 50 U.S. Metropolitan Areas.” *Environment and Planning A: Economy and Space* 49 (10): 2402–24. <https://doi.org/10.1177/0308518X17722564>.
- Greenlee, Andrew J. 2019. “Assessing the Intersection of Neighborhood Change and Residential Mobility Pathways for the Chicago Metropolitan Area (2006–2015).” *Housing Policy Debate* 29 (1): 186–212. <https://doi.org/10.1080/10511482.2018.1476898>.

Key Words: Race, Neighborhoods, Segregation, Black communities

HOUSING CRISIS, HOUSING JUSTICE, AND DECOMMODIFICATION: SESSION 1 OF 2

Pre-Organized Session 25 - Summary

Session Includes 1287, 1288, 1289, 1290

COOPER, Sarah [University of Manitoba] sarah.cooper@umanitoba.ca, organizer

The crisis of affordability in housing is not new, but has been exacerbated by the COVID-19 pandemic. While historically interventions to address housing need have involved some form of removal of property from the market, today the market is increasingly seen as the solution to housing need. Many of the housing crises of the past few decades have been shaped by their relationship to the market: social housing is increasingly drawn into market practices, while rental housing is being snapped up by investors through Real Estate Investment Trusts and homeownership is becoming less accessible, especially for younger households. These processes do not occur without resistance, however: tenants, housing providers and, at times, governments have developed policies, strategies and actions to confront commodification and find new practices to enable access to housing. This session will explore both factors that are intensifying crisis, and strategies pursued by organizers, governments and others to address it.

Objectives:

- Ability to identify and assess factors that are intensifying housing crisis, and strategies pursued by organizers, governments and others to address it.

THE EMPTY CITY? EXPLORING URBAN VACANCY IN AND BEYOND THE PANDEMIC

Abstract ID: 1287

Abstract within Pre-Organized Session 25

FRIENDLY, Abigail [Utrecht University] a.r.friendly@uu.nl, presenting author

In the face of an abrupt reversal in cities during the COVID-19 pandemic due to lockdowns, the issue of urban vacancy gained new meaning around the world. Even before the pandemic, recognition of the size and scope of urban vacancy in connection to housing precarity, affordability and the housing crisis emerged, likely due to speculation and expectations of future price increases. Yet this situation worsened as the pandemic raged, producing a common image of cities at a standstill, a key trope of the pandemic. As urban centres emptied out, the pandemic further exposed cities' fragilities under neoliberal regimes of governance. Globally, variation of the problem of urban vacancy abound, including brownfields, vacant lots, and land held by speculators, combined with multiple reasons why land remains idle or unused. Broadly, the issue of urban vacancy underscores the issue of inequitable access to urban land and housing, and the role played by the deregulation of real estate markets. While vacancy emphasizes norms of exclusion, vulnerability and housing precarity within contemporary cities, it may also open possibilities for transformation through new policies, legislation and mechanisms for change. In some cities, political support for vulnerable populations occurred, though often as temporary fixes rather than lasting solutions to systemic issues. Likewise, struggles by urban movements, such as squats, underline the vacancy issue, sometimes capable of promoting political changes in support of transformation alongside a confrontation of commodification.

Focusing on a case study of São Paulo, in this paper, I use a political economy perspective to untangle the complex property regimes implicit in producing urban vacancy, the struggles, contestations, and forms of participation emerging alongside vacant land, and the opportunities for urban transformations amidst urban vacancy in and beyond the pandemic. In doing this, I underline both the inequalities and fragilities produced by property regimes in such contexts, yet also the possibilities for urban transformation which may emerge.

Citations

- Buitelaar, E., Moroni, S. & De Franco, A. (2021). "Building obsolescence in the evolving city. Reframing property vacancy and abandonment in the light of urban dynamics and complexity." *Cities* 108: 102964.
- Ferrari, M. & Vasuvedan, A. (2019). "Vacancy at the edges of the precarious city." *Geoforum* 101: 165–173.
- O'Callaghan, C. Di Felicianantonio, C. & Byrne, M. (2018). "Governing urban vacancy in post-crash dublin: contested property and alternative social projects." *Urban Geography* 39(6): 868–891.
- Stevens, J. (2019). "Occupy, resist, construct, dwell! A genealogy of urban occupation movements in central São Paulo." *Radical Housing Journal* 1(1): 131–149.

Key Words: vacancy, property regimes, housing crisis, urban movements, urban transformations

CONTESTING THE SUB-STATE ROLE IN HOUSING FINANCIALIZATION: TENANTS, BUY-TO-RENT INVESTORS, AND CORPORATE LANDLORD DISCURSIVE STRATEGIES IN RESPONSE TO ONTARIO'S PROTECTING TENANTS AND COMMUNITY HOUSING ACT, 2020

Abstract ID: 1288

Abstract within Pre-Organized Session 25

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The state plays a crucial role in the financialization of housing. Through a strategy of 'regulated deregulation,' the state reforms existing regulations to allow for greater freedom for certain financial actors just as it creates new regulatory regimes which create and structure new markets and opportunities for finance-driven accumulation within the built environment (Aalbers Haila 2018). This paper examines the financialization of rental housing in Canada and the role of the sub-state/province in these processes of accumulation. August (2020) and others have examined the role of real estate investment trusts (REITs) in housing financialization and link the variable penetration of REITs in provincial markets to the impact of different provincial (sub-state) regulatory regimes. Shilton (2021) shows how tenants respond to the impact of financialization of their homes through organizing, mobilization, and direct action taken against their landlords. Waldron (2019) identifies how real estate and financial actors are accommodated in the policy-making process because of aligned interests with the state and well-resourced lobby efforts. Following Fields (2017) formulation of the 'unwilling subjects of financialization,' I analyze the demands of the State to manage conflict between landlord and tenant interests as articulated by tenants and landlords, including both large, financialized corporations and small buy-to-rent landlords, through a case study of the Protecting Tenants and Community Housing Act, 2020, a suite of regulatory changes introduced by the conservative Ontario government in 2020. I apply a discourse analysis methodology in my examination of Ontario Legislature committee hearings into the Protecting Tenants and Community Housing Act, 2020 and the respective positions and discursive strategies employed by each constituency during the hearings. I find that tenants, as 'unwilling subjects of financialization,' have developed a consciousness of their condition and its causes and advance arguments for policy intervention to mitigate financialization-driven accumulation by dispossession. I also find that smaller buy-to-rent landlords and corporate landlords employ distinct narratives and conceive of their interests and reform proposals in dissimilar ways, despite both constituencies benefiting from legislative reform aimed at facilitating financialization. The findings suggest an aligned-accommodation by the sub-national state of large, corporate and REIT landlords.

Citations

- Aalbers MB, Haila A. A conversation about land rent, financialisation and housing. *Urban Studies*. 2018;55(8):1821-1835.
- August, Martine. "The financialization of Canadian multi-family rental housing: From trailer to tower." *Journal of Urban Affairs* 42, no. 7 (2020): 975-997.
- Fields, Desiree. "Unwilling subjects of financialization." *International Journal of Urban and Regional Research* 41, no. 4 (2017): 588-603.
- Shilton, Jamie. "Who Owns the City? Pension Fund Capitalism and the Parkdale Rent Strike", *Journal of Law and Social Policy*, 25 (2021): 1-20
- Waldron, R. (2019). Financialization, Urban Governance and the Planning System: Utilizing 'Development Viability' as a Policy Narrative for the Liberalization of Ireland's Post-Crash Planning System. *International Journal of Urban and Regional Research*, 43(4), 685-704.

Key Words: Housing, Financialization, Policy, Sub-state

BUT WE PLANNED THE NEIGHBOURHOOD 'SINGLE-FAMILY DWELLING': STUDENTIFICATION, SHORT-TERM RENTALS AND INFORMALITY IN TORONTO'S INNER SUBURBS

Abstract ID: 1289

Abstract within Pre-Organized Session 25

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This paper examines the role of planning—as urban development and governance practice—in the material, social, and symbolic construction of “studentified” neighbourhoods as spaces of socio-spatial relegation. While much of the literature on studentification takes this neighbourhood change process as a proxy for gentrification, students can often face conditions of marginalization when constrained by little choice and exploitative rental arrangements. Taking a case study from a racialized neighbourhood in proximity to a university in Toronto's inner suburbs, we examine: first, the role of the university as a development actor involved in neighbourhood “improvement” through the sell-off of land for a single-family New Urbanist development; second, the rapid conversion of single-family housing into unlicensed rooming houses for students; and third, the further transformation of the neighbourhood

through the loss of student dwelling rooms to short-term rentals.

We argue that, in the absence of affordable student housing and adequate planning responses to studentification, an ambivalent municipal regulatory regime for the licencing of rooming houses creates a lucrative opportunity for small and medium-sized landlords -- including holding companies -- to extract rent from illegal conversions and amplify the possibilities for rent extraction. This state-market nexus enables a highly competitive, unregulated and financialized private rental segment that is exploitative of students.

While this case could be interpreted as a failure of planning or an absence of state action, we argue instead that these gray regulatory areas constitute by themselves key strategies of power. Crucially, the ability to trace boundaries, cut land deals, and define the cases where rules are enforced, are essential to councillors and other power brokers whose ad hoc interventions make them indispensable to urban development processes. Similarly, the authority to define the student housing “crisis” under particular terms, and to propose “common sense” policy interventions, typically involving the compartmentalization of students into private sector solutions, is how neighbourhood groups, higher education institutions, landlords, and developers retain their grip over a generationed, temporary, and geographically contained market segment where those affected have little choice and are seldom recognized as stakeholders.

Citations

- Revington, N. (2021). Age segregation, intergenerationality, and class monopoly rent in the student housing submarket. *Antipode*, 53(4), 1228-1250.
- Dikeç, M. (2011). *Badlands of the republic: Space, politics and urban policy* (Vol. 78). John Wiley & Sons.
- Valverde, M. (2011). Seeing like a city: The dialectic of modern and premodern ways of seeing in urban governance. *Law & Society Review*, 45(2), 277-312.

Key Words: rental housing market, studentification, short-term rentals, financialization, universities

FINANCIALIZATION AND HOUSING INEQUALITY: MEASURING IMPACTS ON AFFORDABILITY IN TORONTO

Abstract ID: 1290

Abstract within Pre-Organized Session 25

AUGUST, Martine [University of Waterloo] martine.august@uwaterloo.ca, presenting author
ST-HILAIRE, Cloe [University of Waterloo] csthilaire@uwaterloo.ca, co-author

Researchers and housing organizers have recently shed light on financialization as a process reshaping the rental housing landscape. Politico-economic shifts combined with technological change (Sassen 2012) have created a fertile terrain for the rise of “financialized landlords” (August 2020) and the investment of global capital into residential real estate (Aalbers, 2016). Critics of this trend have identified downsides that affect housing justice and inequality in the city, arguing that financialization leads to the treatment of housing as a commodity and financial asset, rather than a human right (Rolnik 2013). Scholars have linked financialization with growing indebtedness, displacement, eviction, housing insecurity, unaffordability, and urban spatial inequality. This process has disproportionate racial impacts as well, enabling finance capital to mobilize property as a mechanism of racial dispossession (Fields & Raymond 2021). While many of these trends have been well-documented, there are few spatio-temporal studies that clearly demonstrate the link between financialized property ownership and housing affordability. This paper examines whether the acquisition of rental housing by a financial firm (such as a Real Estate Investment Trust [REIT], private equity fund, or institutional investor) is followed by an increase in rent charges, and therefore declining housing affordability.

To explore this question, we mixed qualitative and quantitative methods. Drawing on data from publicly filed financial records and observation at industry conferences, we examine the stated business strategies of financial firms related to systematic strategies to drive higher rents. To measure the effects of financial ownership on rent levels we use a two-pronged approach, focusing on the city of Toronto, Canada's premiere site of financialized rental housing. First, we conduct a longitudinal analysis of multi-family transactions (1980-2021) to trace the growing presence of financialized landlords. To examine the impacts on rent levels we use a novel combination of datasets – multi-family sales data, rent data from the Canadian census, and annual rent data from Canada's housing agency (the CMHC) – creating a portrait of acquisition patterns and their impacts on the rates of rent changes. We find that by the 2000s financial firms were the largest acquirers of apartment buildings, with increased activity in 2010 and near-total dominance by 2020. Early analysis shows that buildings bought by financial firms (from non-financial firms) are associated with the highest rent increases, with the second-highest increases following sales from one financial firm to another. Our study points to the growing power of these firms, as buildings that are sold into financial ownership are rarely ‘de-financialized’. We will also explore the links between neighbourhood socio-economic data, financial ownership, and rents to identify geographic strategies of rent increases deployed by financial firms, and the impacts of these on patterns of urban spatial inequality.

This paper provides novel and important findings on the links between financialization – a contemporary trend that is reshaping cities and housing – and affordability. This is of relevance to planning scholarship and practice in areas of housing, affordability, and urban inequality. Our paper will touch on policy-related solutions and the potential to ‘plan’ for the de-financialization of housing.

Citations

- Aalbers, M. (2016). *The financialization of housing: A political economy approach*. New York: Routledge.
- August, M. (2020). The financialization of Canadian multi-family rental housing: From trailer to tower. *Journal of Urban Affairs*.
- Fields, D. and Raymond, E. (2021). Racialized geographies of housing financialization. *Progress in Human Geography*. 45(6).
- Rolnik, R. (2013). Late neoliberalism: The financialization of homeownership and housing rights. *International Journal of Urban and Regional Research*. 37(3): 1058-1066.
- Sassen, S. (2012). Expanding the terrain for global capital: When local housing becomes an electronic instrument. In Aalbers, M., Ed., *Subprime cities: The political economy of mortgage markets*. Blackwell Publishing.

Key Words: Housing, Rental Housing, Financialization, Affordability, Inequality

GENDER, HOUSING, AND HOME

Pre-Organized Session 47 - Summary
Session Includes 1466, 1467, 1468

HARTEN, Julia [University of British Columbia] julia.harten@ubc.ca, organizer

With the post-industrial turn concentrating economic activity in the urban, most cities are experiencing affordability crises. Space in the city is increasingly contested; Housing has come to the fore as a defining planning issue of our time. This session proposes feminist theorizing of housing and home as sites of competing power relations as an avenue for productive inquiry – both to better understand gendered housing experiences and trajectories of women and gender-diverse people and to leverage a feminist understanding of housing and home as embedded, relational, and negotiated to stimulate new housing conversations. Urging us to conceive of housing as a social process, this session asks: What new impulses can feminist housing scholarship offer inclusive housing planners? Citing evidence from cities across the Global North and South, participants in this session grapple with two key, interrelated themes: (i) the role of gender in the housing search and in accessing housing, and (ii) the social construction of home amidst changing constituting variables, such as labor and unaffordability.

Objectives:

- Gender and Housing

HIGH WAGES, NO HOUSING: GENDER, DISCRIMINATION, AND WOMEN'S ACCESS TO RENTAL HOUSING IN URBAN INDIA

Abstract ID: 1466

Abstract within Pre-Organized Session 47

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HARTEN, Julia [University of British Columbia] julia.harten@ubc.ca, primary author

In India, women find housing as wives, married mothers, sisters, and daughters. But when women are “unattached,” never married, widowed, or divorced, they face a myriad of barriers. Although single women in India have grown to a historic 71.4 million (2011 Census), in the popular imaginary they remain a “cultural anomaly.” Where women are primarily judged in terms of marriage and motherhood, societal scripts about proper female behavior continue to shape women’s lives – including their housing choices and outcomes.

This paper studies how gender mediates access to rental housing in India. In particular, we unpack the nature, scale, and scope of gender-based exclusion during the housing search, focusing on rental housing discrimination against single female young professionals in Bengaluru. Stably employed and high-income-earning, these women routinely face widespread rejection, intrusive questioning, and intense monitoring in their pursuit of accommodation. Discrimination against this group has received media attention because it is particularly pointed: the incongruence of

patriarchal gender norms and female aspiration for independence obstruct housing access for women who financially can afford to rent a place of their own. Due to its concentration of IT companies and aspiring tech workers - many of whom are female - Bengaluru emerges as a key site for this research.

To study gender-based discrimination in rental housing in urban India, we employ a mixed-methods research design. In particular, we combine quantitative evidence from paired testing with in-depth semi-structured interviews for grounded theory. Paired testing or audit studies are widely regarded as the gold standard in housing discrimination research. We adopt a telephone audit design where testers assume and enact prospective tenant profiles to contact landlords who list units for rent online. Tenant profiles vary only with regard to gender and marital status. Hence, documenting rates of success across profiles allows us to analyze the prevalence of gender-based discrimination in Bengaluru's rental market. To dig deeper into exclusionary housing practices against white-collar single women, as well as their responses, we also conduct semi-structured interviews.

Findings from this work contribute to the literature in several ways. While gendered housing vulnerability has mostly been framed through the labor market channel, focusing on gendered patterns of financial (in)dependence, our study shines a light on gender as a key variable for structuring access to housing through influencing the housing search. Additionally, our study joins a small but growing body of work that enriches what we know about the gender-housing nexus with much-needed evidence from the Global South. Finally, this study contributes methodologically to a literature that has drawn either from quantitative or qualitative data separately by demonstrating the synergies and gains from a mixed-methods approach.

Citations

- Bernroider, L. (2018). Single female tenants in South Delhi—gender, class and morality in a globalizing city. *Gender, Place & Culture*, 25(5), 758-774.
- Datta, S., & Pathania, V. (2016). For whom does the phone (not) ring? Discrimination in the rental housing market in Delhi, India (No. 2016/55). WIDER Working Paper. The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, <http://dx.doi.org/10.35188/UNU-WIDER/2016/098-0>
- Gupta, A. (2016). Bachelor Girls: On Finding A House As A Single Woman In Mumbai. <https://feminisminindia.com/2016/09/20/bachelor-girls-documentary-single-women/>
- Harten, J. G. (2021). Housing Single Women: Gender in China's Shared Rental Housing Market. *Journal of the American Planning Association*, 87(1), 85-100.
- Lau, L. (2010). Literary Representations of the 'New Indian Woman' The Single, Working, Urban, Middle Class Indian Woman Seeking Personal Autonomy. *Journal of South Asian Development*, 5(2), 271-292.

Key Words: Housing, Gender, Discrimination, Single Women, India

GENDER, THE PLATFORM ECONOMY, AND THE DIVERSE USES OF HOME IN SOUTHEAST ASIA: THE LIVED EXPERIENCE OF ONLINE GIG WORKERS IN BANGKOK AND PHNOM PENH

Abstract ID: 1467

Abstract within Pre-Organized Session 47

JAMME, Hue-Tam [Arizona State University] Hue-Tam.Jamme@asu.edu, presenting author
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Despite significant improvements over recent decades, gender labor gaps persist in Southeast Asia due to prevailing social norms. As the primary homemakers, women remain far more homebound than their male counterparts. Therefore, women who do participate in labor markets are more likely to do so from home. Turning parts of their homes into a workspace allows for multi-tasking and flexible arrangements between home- and work-related responsibilities.

Against this backdrop, the rise of the platform economy may present enhanced opportunities for women to participate in labor markets. This paper focuses on the lived experience of online gig workers in Bangkok (Thailand) and Phnom Penh (Cambodia). In particular, how do home-based female platform workers adapt their spatial and temporal uses of "home" to support their remunerated online activity? Does working online from home promote women's empowerment? Only recently have the gendered aspects of the "new spatialities of work in the city" started to receive some attention in urban studies (Rodríguez-Modroño, 2021). In this regard, evidence from emerging economies is sparse.

This paper draws on surveys and in-depth interviews conducted with nearly 200 workers in Bangkok and Phnom Penh between July 2021 and March 2022. The composition of the convenience sample enables comparisons between different sub-groups, by gender identity; online vs. offline worker status; and type of platform work (online retail, meal preparation for food delivery apps, and freelancing jobs). The methods used for analyzing the data include

descriptive statistics of survey data and a thematic analysis of the interview transcripts. Measurements of women's empowerment are inspired by the work of Naila Kabeer (1999). The theoretical framework is infused with Martha Nussbaum's (2001; 2011) gendered perspective on the Capabilities Approach.

On the one hand, preliminary results are indicative of women's empowerment permitted by the platform economy. They confirm that the platform economy has facilitated participation in labor markets for many of the stay-at-home women interviewed. Working on an online platform has helped them gain better control over their personal schedules and finances. It has involved turning part of the home into a workspace. In some cases, a brick-and-mortar venue is under consideration if the online venture proves successful. Since they started working online, on average home-based female workers experienced a significant decrease in their time spent in transportation every day; their work-life balance has improved; and they have gained confidence in their career prospects.

On the other hand, online female workers might be even more homebound than before joining the platform economy. They claim that their leisure time has significantly decreased. When accounting for online and unpaid care work, they appear to work significantly more than surveyed men and women working more conventional jobs.

These findings add a Southern perspective and a focus on the role of the platform economy to a growing scholarship – especially since the offset of the Covid-19 pandemic – on the gender equity issues associated with working from home (Power, 2020).

Citations

- Kabeer, N. (1999). Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and change*, 30(3), 435-464.
- Nussbaum, M. C. (2001). *Women and human development: The capabilities approach* (Vol. 3). Cambridge University Press.
- Nussbaum, M. C. (2011). *Creating Capabilities: The Human Development Approach*. Cambridge, MA: Belknap Press of Harvard University Press
- Power, K. (2020). The COVID-19 pandemic has increased the care burden of women and families. *Sustainability: Science, Practice and Policy*, 16(1), 67-73.
- Rodríguez-Modroño, P. (2021). Non-standard work in unconventional workspaces: Self-employed women in home-based businesses and coworking spaces. *Urban Studies*, 58(11), 2258-2275.

Key Words: Online Platforms, Gender, Southeast Asia, Employment, Informality

NEGOTIATING VULNERABILITY: THE ROLE OF GENDER IN SHARED HOUSING

Abstract ID: 1468

Abstract within Pre-Organized Session 47

HARTEN, Julia [University of British Columbia] julia.harten@ubc.ca, presenting author
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As affordability has become a problem virtually anywhere, shared renting is receiving growing attention as an economical housing strategy. Aided by digitization, home sharing has grown to now house a wide range of demographics in numerous contexts. With the housing search moving online, digital platforms allow shared households to connect with a much larger audience of prospective tenants than when searches relied on social ties. This larger pool of potential matches matters for home sharing in particular because sharing entails matching not only on unit but also on personal characteristics. Despite home sharing's growing importance and the complexity of its search process, we know little today about how digital platforms mediate this housing strategy. In particular, first evidence from China and the UK indicates that women face gendered challenges when home sharing, particularly at the lower end of the rent spectrum.

This paper studies the role of gender in shared units for rent in Los Angeles, California, one of the least affordable housing markets in the United States. Drawing on thousands of online rental advertisements, collected between June 2020 and March 2021, we ask: as home sharing moves housing from shelter to entering relationships with strangers, does gender shape this decidedly social housing search process? We first compare references to gender in online advertisement titles and text bodies between full and shared rental offerings. Then, we employ qualitative coding-assisted natural language processing to mine descriptive advertisement texts for themes that come up in relation to gender. Preliminary results suggest that discourses revolve around female vulnerability – either women seeking other women as roommates, or advertisements offering mostly women housing in exchange for house, care, and sex work, or romance. Finally, we examine patterns in relation to these gendered themes by analyzing correlation with, price, location, and tract level socio-demographics.

This study contributes to the literature in several ways. First, this study contributes to an emerging literature that

documents how gender structures housing access. While gendered patterns of housing vulnerability are well-established, the role of gender in access housing, and shared housing in particular, is underexamined. More broadly, this work expands our understanding of the gender-housing nexus to include non-traditional living arrangements, here home sharing. Feminist scholarship theorizing the home as a site for competing power relations has by and large assumed family or romantic relationships within the home. Here, we extend this work beyond such relationships and highlight how gendered dynamics take shape in the context of sharing among unattached adults. Finally, tight markets increase the scope for discrimination. This study highlights the intersection of gender and rent-seeking that can emerge in such contexts. As women are the primary target of advertisement seeking house, care, and sex work, or romance in exchange for housing, planners are called to take seriously the (gendered) vulnerabilities created by the affordability crisis.

Citations

- Boeing, G. 2020. "Online Rental Housing Market Representation and the Digital Reproduction of Urban Inequality." *Environment and Planning A*, 52 (2), 449-468.
- Besbris, M., Schachter, A., & Kuk, J. (2021). The unequal availability of rental housing information across neighborhoods. *Demography*, 58(4), 1197-1221.
- Harten, J. G. (2021). Housing Single Women: Gender in China's Shared Rental Housing Market. *Journal of the American Planning Association*, 87(1), 85-100.
- Maalsen, S., & Gurran, N. (2021). Finding home online? The Digitalization of share housing and the making of home through absence. *Housing, Theory and Society*, 1-19.
- Ortega-Alcázar, I., & Wilkinson, E. (2021). 'I felt trapped': young women's experiences of shared housing in austerity Britain. *Social & Cultural Geography*, 22(9), 1291-1306.

Key Words: Gender, Shared Housing, Feminist Planning, Digital Housing Search, Rental Housing

HOUSING CRISIS, HOUSING JUSTICE, AND DECOMMODIFICATION: SESSION 2 OF 2

Pre-Organized Session 55 - Summary

Session Includes 1292, 1293, 1294, 1295, 1296

COOPER, Sarah [University of Manitoba] sarah.cooper@umanitoba.ca, organizer

The crisis of affordability in housing is not new, but has been exacerbated by the COVID-19 pandemic. While historically interventions to address housing need have involved some form of removal of property from the market, today the market is increasingly seen as the solution to housing need. Many of the housing crises of the past few decades have been shaped by their relationship to the market: social housing is increasingly drawn into market practices, while rental housing is being snapped up by investors through Real Estate Investment Trusts and homeownership is becoming less accessible, especially for younger households. These processes do not occur without resistance, however: tenants, housing providers and, at times, governments have developed policies, strategies and actions to confront commodification and find new practices to enable access to housing. This session will explore both factors that are intensifying crisis, and strategies pursued by organizers, governments and others to address it.

Objectives:

- Ability to identify and assess factors that are intensifying housing crisis, and strategies pursued by organizers, governments and others to address it.

EXPANSIVE CITIZENSHIP: ENCAMPMENTS IN PUBLIC PARKS DURING COVID

Abstract ID: 1292

Abstract within Pre-Organized Session 55

KRAMER, Anna [McGill University] anna.kramer@mcgill.ca, presenting author

Usually hidden in ravines or under highway ramps, encampments experienced a moment of heightened visibility and public awareness during COVID. During the pandemic, bylaws were strategically unenforced and shelter capacity cut, and so encampments jumped boundaries from interstitial sites to more central and public spaces including urban parks. The fieldwork for this study spans more than a year when people were living in several public parks in the west end of Toronto, just as parks became one of the only safe social spaces during lockdowns. This challenged normal spatial relations and land use hierarchies in cities.

In this presentation, I look at how parks became a space of expansive citizenship in this time. In liberal capitalism,

property is connected with citizenship in ways that diminish the lives of houseless people (Przybylinski 2021). The implicit urban social contract is one of property taxes in exchange for public goods and infrastructure, and the disproportionate influence of ratepayers and homeowners is seen throughout urban planning practice, from land use policies to policing to public engagement to laws that criminalize homelessness in public space or that protect the rights of landlords over tenants.

Although the encampments arose organically and not with a deliberate political intent, they became a direct manifestation of the ongoing housing crisis as it collided with a global pandemic. There were two ways in which public parks with encampments exploded the concept of a citizenship via property relations. The first is spatial and the second interpersonal.

The presence of people living in tents in these spaces challenged the property relations of land use, whereby parks are reserved for people who can afford to live in residential areas. Parks thus become genuinely public space, and spaces of inadvertent protest through the visibility of living in public (Parker 2020).

The second part of expanded citizenship was realized between people. Bonds of solidarity, recognition and accountability were built between unhoused residents and housed neighbours, as people congregated in shared space. When police came to clear encampments, the crowd of witnesses and supporters standing with the remaining residents made it more difficult to evict that would otherwise be the case if the homeless were in a less visible setting. And the resistance prompted the city to start a pilot project in the next park to secure some residents affordable places to live.

In this way, encampments in Toronto parks during COVID became a space of inclusive, active citizenship resulting in real material gains (Miraftab and Wills 2005); a kind of planning that was centred around a citizenship not reliant on property (Dorries 2022); an urban citizenship as a mobile commons (Turhan and Armiero 2019). Although this expanded citizenship is incomplete and contingent, it points to a concept for reorienting urban planning practice.

Citations

- Dorries, Heather. 2022. "What Is Planning without Property? Relational Practices of Being and Belonging." *Environment and Planning D: Society and Space*, January, 026377582110685. <https://doi.org/10.1177/02637758211068505>.
- Miraftab, Faranak, and Shana Wills. 2005. "Insurgency and Spaces of Active Citizenship: The Story of Western Cape Anti-Eviction Campaign in South Africa." *Journal of Planning Education and Research* 25 (2): 200–217. <https://doi.org/10.1177/0739456X05282182>.
- Parker, Cory. 2020. "Tent City: Patterns of Informality and the Partitioning of Sacramento." *International Journal of Urban and Regional Research* 44 (2): 329–48. <https://doi.org/10.1111/1468-2427.12846>.
- Przybylinski, Stephen. 2021. "Realizing Citizenship in Property: Houseless Encampments and the Limits of Liberalism's Promise." *Political Geography* 91 (November): 102494. <https://doi.org/10.1016/j.polgeo.2021.102494>.
- Turhan, Ethemcan, and Marco Armiero. 2019. "Of (Not) Being Neighbors: Cities, Citizens and Climate Change in an Age of Migrations." *Mobilities* 14 (3): 363–74. <https://doi.org/10.1080/17450101.2019.1600913>.

Key Words: parks, encampments, citizenship

HOUSING FIRST: THE PATHOLOGIZATION AND PRODUCTION OF LONG-TERM UNHOUSED PEOPLE

Abstract ID: 1293

Abstract within Pre-Organized Session 55

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This paper examines how long-term unhoused people, called the "chronically homeless," are pathologized through housing and homelessness policy, which are instruments mediated by market forces. Housing First is a widely adopted homelessness policy approach. It is premised on the idea that individuals should be provided housing before/without undergoing mental health and/or drug treatments or other forms of socio-medical interventions. Housing First is a neoliberal program; the great promise of Housing First is that it can end homelessness within neoliberal capitalist economies. While this model has been shown to improve many individuals' lives, homelessness has increased in many jurisdictions that operate under Housing First policies. This paper uses Toronto and its Housing First program as a case study, drawing on evidence from policy documents, city reports and statements from government officials. In Toronto, housing creation for low(er)-income people has been streamlined into "affordable housing" and "supportive housing." "Affordable housing" is largely defined in relation to the market rate and excludes people on welfare. "Supportive housing" is not-for-profit housing for the "chronically homeless" – those who have

been unhoused for at least six months. Because Housing First promises to end homelessness without changing social relations, the change must occur at the individual level – at the level of the pathologized “chronically homeless” person. “Chronically homeless” people are disproportionately, and majority, Indigenous people, racialized and/or migrants. Supportive housing is understood as the only appropriate option for the pathological “chronically homeless” individual now cast as incapable of living fully independently. Housing First policy also produces “chronic homelessness”: because of the confluence of Housing First and the market, many individuals must become “chronically homeless” to access any housing at all.

Citations

- Goering, P., Veldhuizen, S., Watson, A., Adair, C., Kopp, B., Latimer, E., Nelson, G., MacNaughton, E., Streiner, D., & Aubrey, T. (2014). National At Home/Chez Soi final report. Mental Health Commission of Canada.
- Hennigan, B. (2017). House broken: Homelessness, housing first, and neoliberal poverty governance. *Urban Geography*, 38(9), 1418–1440. <https://doi.org/10.1080/02723638.2016.1254496>
- Mitchell, D. (2020). *Mean Streets: Homelessness, Public Space, and the Limits of Capital*. University of Georgia Press.
- Willse, C. (2015). *The value of homelessness: Managing surplus life in the United States*. University of Minnesota Press.
- Withers, A. J. (2021). *Fight to win: Inside poor peoples’ organizing*. Fernwood.

Key Words: homelessness, Housing First, pathologization, supportive housing, affordable housing

HOUSING POLICIES IN GERMANY THROUGH THE LENS OF DECOMMODIFICATION

Abstract ID: 1294

Abstract within Pre-Organized Session 55

KOLOCEK, Michael [Research Institute for Regional and Urban Development] Michael.Kolock@ils-forschung.de, presenting author

The aim of the paper is twofold. First, I critically discuss two national instruments, established to increase housing affordability for middle- and low-income families in Germany through the lens of decommmodification. Secondly, the focus is on homelessness. I present a theory of decommmodification of land use for people affected by inadequate housing.

The paper answers the question: What does decommmodification mean in the context of housing policies in Germany? In a broad understanding, decommmodification occurs “when service is rendered as a matter of right, and when a person can maintain a livelihood without reliance on the market” (Esping-Andersen 2011: 22). Esping-Andersen (2011) had the decommmodification of workers in mind and developed a decommmodification score as one of three indicators to distinguish three ideal types of welfare states: In contrary to the United States as a liberal welfare-state regime with a low decommmodification score, Germany is seen as corporatist welfare-state regime with a relatively high decommmodification degree. The paper understands decommmodification as emancipation from market forces (Kolock 2017) and evaluates which market forces have to be taken into account.

Prices for rental and owned housing have been rising in Germany for more than one decade. There are regional differences, but housing affordability has become an important political topic. Lower and middle-income groups have difficulty finding accommodation, especially in growing cities such as Munich, Hamburg, or Berlin; at the same time, vacancy rates are rising in some rural areas. The COVID-19 pandemic has affected German housing markets in different ways and fostered the affordability problem, particularly for certain types of housing. The demand for single family houses and larger apartments increased. Due to the shift to work from home during the pandemic, the criteria for locational preferences change: some experts forecast a revival of rural housing because many people will have the opportunity to work more days from home, even after the pandemic.

In recent years, various national programs and measures responded to the affordability problem on the rental and the home ownership markets. The paper evaluates two national instruments through the lens of decommmodification. In 2015, the German government decided on new rules to slow down the increase of rents in tense housing markets. The so-called “Mietpreisbremse” (= rent-price-brake) prohibits landlords from increasing rents by more than 10 per cent compared to the local reference rent. The second instrument presented is called “Baukindergeld” (= construction-child-benefit). The Baukindergeld is a government grant scheme to support families building homes. For ten years, low- and middle-income families receive financial support of € 1,200 per year for each child when building or buying a home. Through the lens of decommmodification, both instruments aim to emancipate people from market forces – in both cases, this emancipation has rarely worked. The paper explains why.

In a second part, the paper discusses findings of a case study on homelessness in Hamburg. I draw from a “concept of

being allowed to be in a place” (Waldron 1991: 297) and present a theory of decommodification of land use for people affected by inadequate housing. The theory explains why the City of Hamburg is one of the most expensive cities, but nevertheless a magnet for homeless people from all over Europe. Hamburg has not decommodified housing, but responded to many needs of homeless people – needs that are usually met at home. I show why the Covid-19 pandemic, despite various bad effects for homeless people, in the long term might also help to foster a paradigm shift when shaping the inclusive city.

Citations

- Esping-Andersen, G. (2011 [1990]) The three worlds of welfare capitalism. Cambridge: Polity Press.
- Kolocek, M. (2017). The human right to housing in the face of land policy and social citizenship. A global discourse analysis. Basingstoke & New York: Palgrave macmillan.
- Waldron, J. (1991). Homelessness and the issue of freedom. UCLA Law Review, 39 (1), pp. 295–324.

Key Words: Decommodification, Home ownership, Housing markets, Homelessness

CONVERTING CAPITALISM: THE CONTESTED GEOGRAPHY OF CONDO CONVERSIONS IN MONTREAL

Abstract ID: 1295

Abstract within Pre-Organized Session 55

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Since the 1960s, condos have occupied an ever-larger place within processes of urban development, urban planning, and capital accumulation. The increasing importance of condos is registered in Rosen and Walk’s argument that a new regime of city-making, “condoism,” has emerged in Canada and around the world. While research on condos and condoism is relatively extensive, the literature focuses almost exclusively on new-build condos – ignoring processes through which existing rental housing is converted into condos. This paper focuses on condo conversions in Montreal. It examines how processes of condo conversion were enabled by various legislative changes since the 1960s, how it has created opportunities for profit by realtors, lawyers, banks, and small developers, and how tenants’ groups have organized against these processes and the displacement it causes. Condo conversions, the paper argues, are a highly contested element within a broader condoism regime, with tenants’ groups continually challenging the regime, achieving small but important victories, and gesturing toward a form of city making premised on collectivity rather than accumulation.

Citations

- Rutland, Ted (2021). Nowhere land: the evicted space of Black tenants' rights in Montreal. Environment and Planning D: Society and Space.
- Rutland, Ted (2018). Displacing Blackness: Planning, Power, and Race in Twentieth-Century Halifax. Toronto: University of Toronto Press.
- Rosen, Gillad, and Walks, Alan (2015). Castles in Toronto's sky: Condo-ism as urban transformation. Journal of Urban Affairs.

Key Words: condoism, housing, gentrification, tenants' rights

HOUSING IN TRANSITION: STRATEGIC POSITIONING OF NON-PROFIT HOUSING PROVIDERS IN CANADA

Abstract ID: 1296

Abstract within Pre-Organized Session 55

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Change can take place gradually over time, as evolutionary change, but can also happen rapidly and suddenly as a result of a “perturbation” (Burke, 2018, p. 76). In the moment of transition, however, there is both uncertainty and possibility: it is in that moment that decisions may be made and actions undertaken. While Klein (2007) argued that moments of ‘shock’—especially various kinds of crises—made it possible for conservative governments to enact controversial policies, others have seen in recent moments the possibilities of ‘just transitions’ through the climate crisis (Heffron & McCauley, 2018) or ‘just recoveries’ from the COVID-19 pandemic (The Council of Canadians, 2021).

Canada’s community housing sector is currently in transition as a result of a number of factors: the expiry of decades-old funding agreements, an influx of new funding and policies from the 2017 National Housing Strategy, and changes

in provincial housing policies. These changes are set against a backdrop of climate change, a global pandemic, an aging population, increasing Indigenous resistance to colonialism and the ongoing dismantling of the social safety net. In this context, there are many potential moments of transition, including opportunities for both extraction of wealth and power by elites and new approaches to low-cost housing provision.

This paper examines the current and anticipated concerns of non-profit housing providers in relation to the emerging sectoral transition and broader Canadian context, and considers how these providers are positioning themselves for the future. Through a survey of non-profit housing providers in British Columbia, Manitoba and New Brunswick, it identifies the factors driving change, as well as how providers are positioning themselves to respond. In doing so, it begins to articulate the elements and processes shaping these moments of transition as observed by the housing providers themselves.

Citations

- Burke, W. W. (2018). *Organization Change: Theory and Practice* (fifth). SAGE Publications.
- Heffron, R. J., & McCauley, D. (2018). What is the 'Just Transition'? *Geoforum*, 88(December 2017), 74–77. <https://doi.org/10.1016/j.geoforum.2017.11.016>
- Klein, N. (2007). *The Shock Doctrine: The Rise of Disaster Capitalism*. Random House.
- The Council of Canadians. (2021). *A Just Recovery for All*. www.canadians.org

Key Words: nonprofit housing, Canada, decommodified, transition

TRANSIT, GENTRIFICATION AND DISPLACEMENT: UNPACKING THE RELATIONSHIP IN CITIES ACROSS CANADA

Pre-Organized Session 62 - Summary

Session Includes 1385, 1386, 1387, 1388

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One of the biggest challenges facing cities today is how to build and maintain affordable housing near good transit. Cities are becoming increasingly expensive places to live; in many neighbourhoods, gentrification is a dominant trend which sees the erosion of housing that is affordable to low- and moderate-income households. At the same time, cities across Canada are investing in new, higher-order public transit, such as LRT. While this infrastructure helps connect people and places, there is also a growing understanding that it can contribute to gentrification and displacement. This series of papers employs both quantitative and qualitative approaches to examine the relationship between new transit infrastructure and gentrification and displacement in cities across Canada. It draws on detailed case studies from Toronto and Waterloo, emphasizing spatial, non-spatial and experiential forms of displacement. The session includes studies that focus on the lived experiences of marginalized communities, as well national statistical and spatial analysis that examines the broader ways in which transit impacts the housing market.

Objectives:

- Understand the relationship between transit and gentrification/displacement

ARE LOW-INCOME RESIDENTS DISPROPORTIONATELY MOVING AWAY FROM TRANSIT?

Abstract ID: 1385

Abstract within Pre-Organized Session 62

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Public transit is immensely important among lower-income urban residents for daily travel (Sanchez, Shen, & Peng, 2004). While lower-income residents tend to live in areas of greater transit accessibility on average (e.g. Allen & Farber, 2019), some North American cities have undergone trends of inner-city gentrification and suburbanization of poverty over the past several decades (Grant, Walks, & Ramos, 2020). This means that in some places, lower-income households are increasingly living in areas with relatively lower levels of transit accessibility and thus have greater barriers to daily travel and are facing increased risks of transport-related social exclusion.

There are also growing concerns that some transit rich neighbourhoods are becoming unaffordable and are resulting

in the residential displacement and exclusion of low-income residents; but quantitative studies have mixed or inconclusive results about whether low-income residents move disproportionately out of gentrifying neighbourhoods or whether newly built transit lines directly leads to the displacement of low-income residents (Zuk et al., 2018; Padeiro, Louro, & da Costa, 2019). However, existing research that studies income inequalities of residential mobility in relation to public transit focuses on the outcomes of specific transit routes, which serve only a fraction of the population in a region, rather than comprehensively examining changes across an entire region. As such, there is needed research to assess whether there are social inequalities at a regional level pertaining to whether lower-income residents are unequally reducing their levels of transit accessibility when they move.

The objective of our paper is thus to answer the following: do low-income residents, on average, experience a reduction of their level of transit accessibility when they move within a region? If so, to what extent? And if so, do low-income movers witness a greater reduction in transit accessibility than higher-income movers? Specifically, we examine differences in transit accessibility resulting from intra-urban moves using an administrative dataset representing 20% of tax-filers across an entire region (Toronto) over a 30-year period (1988 to 2018). Findings of this study are important for understanding whether there is evidence of a disproportionate number of low-income residents moving away from much relied upon public transit service, and if so, how this has changed over time. Furthermore, findings about differences in individual residential mobility patterns by income and relative to transit accessibility can offer further explanations about how contemporary trends of urban socio-spatial restructuring, such as inner-city gentrification and suburbanization of poverty, unfold within a region over time. While our empirical analysis is focused on a single region, the types of data and methods described in our paper could be applied to other regions.

Citations

- Allen, J., & Farber, S. (2019). Sizing up transport poverty: A national scale accounting of low-income households suffering from inaccessibility in Canada, and what to do about it. *Transport Policy*, 74, 214–223.
- Grant, J., Walks, A., & Ramos, H. (2020). *Changing Neighbourhoods: Social and Spatial Polarization in Canadian Cities*. UBC Press.
- Padeiro, M., Louro, A., & da Costa, N. M. (2019). Transit-oriented development and gentrification: A systematic review. *Transport Reviews*, 39(6), 733–754
- Sanchez, T. W., Shen, Q., & Peng, Z.-R. (2004). Transit Mobility, Jobs Access and Low-income Labour Participation in US Metropolitan Areas. *Urban Studies*, 41(7), 1313–1331.
- Zuk, M., Bierbaum, A. H., Chapple, K., Gorska, K., & Loukaitou-Sideris, A. (2018). Gentrification, Displacement, and the Role of Public Investment. *Journal of Planning Literature*, 33(1), 31–44

Key Words: transit accessibility, residential mobility, income, displacement, exclusion

ASSESSING LARGE-SCALE IMPACTS OF PUBLIC TRANSIT INVESTMENTS: A NATIONAL SCALE ACCOUNTING OF LAND VALUE UPLIFT

Abstract ID: 1386

Abstract within Pre-Organized Session 62

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Transportation barriers currently limit the opportunities for many Canadians to participate in jobs, healthcare and social services (Allen & Farber, 2021). To improve accessibility, policymakers often prioritize public investments in transit-oriented land use planning. However, in line with urban land economic theories, Debrezion et al. (2007) and Higgins and Kanaroglou (2016) identify that such a strategy can lead to changes in property values in some transit station areas as some property buyers (and renters) are willing to pay a premium for locations with high transit accessibility and enhanced environmental amenities. While land value uplift is often framed positively, particularly when analyzing transit projects from the perspective of land value capture, such changes in land and real estate values can potentially alter the socio-economic characteristics of transit station areas in terms of who moves into and out of the neighborhoods (Delmelle, 2021). By extension, this can reinforce existing spatial inequalities and may open new markets for re-entry of capital by the most-advantaged social class, resulting in gentrification (Rérat, 2018).

As a first step in a larger project that will examine the issue of transit-induced gentrification in Canada, this research utilizes real estate transaction data to examine the relationship between public transit accessibility and land value uplift. The objective of the paper is therefore to answer the following: are public transit investments enhancing the Canadian housing market? And if so, to what extent is the housing market enhanced? With access to a large Canada-wide real estate transactions database, this research is the first national-scale accounting of transit and land value uplift. We specifically examine changes in property values (or land value uplift) associated with public transit investments in the following regions: Toronto, Montreal, Vancouver, Calgary, Ottawa, Edmonton, Quebec City and

Winnipeg.

Our research objectives will be addressed through the adoption of several quantitative methods (e.g., spatio-temporal hedonic regression models) that respond to existing gentrification and econometric research challenges identified by Delmelle (2021) and others. We take advantage of available data including real estate transactions data from Real Property Solutions, a property appraisal company and census data from Statistics Canada.

The examination of changes in property values provides an empirical basis to understand whether gentrification might be occurring, and the extent to which it may be happening. Our work has important implications for planning practitioners. Concerns have been expressed over the lack of integration between transport, land use and the housing market. This work therefore provides critical information that will contribute to a greater understanding of the scope of transit-induced displacement in Canada, and further support efforts to incorporate affordable housing policy into more holistic and equitable transport planning practice.

Citations

- Allen, J., & Farber, S. (2021) Suburbanization of Transport Poverty, *Annals of the American Association of Geographers*, 111:6, 1833-1850, DOI: 10.1080/24694452.2020.1859981
- Debrezion, G., Pels, E., & Rietveld, P. (2007). The impact of railway stations on residential and commercial property value: a meta-analysis. *The Journal of Real Estate Finance and Economics*, 35(2), 161- 180.
- Delmelle, E.C. (2021). Transit-Induced Gentrification and Displacement: The State of the Debate. In R. H. M. Pereira & G. Boisjoly (Editors), *Social Issues in Transport Planning (Advances in Transport Policy and Planning Vol. 8)*. Elsevier. <https://doi.org/10.1016/bs.atpp.2021.06.005>
- Higgins, C. D., & Kanaroglou, P. S. (2016). Forty years of modelling rapid transit's land value uplift in North America: Moving beyond the tip of the iceberg. *Transport Reviews*, 36(5), 610-634.
- R  rat, P. (2018). Spatial capital and planetary gentrification: residential location, mobility and social inequalities *Handbook of Gentrification Studies*: Edward Elgar Publishing

Key Words: land value uplift, transportation accessibility, transit-induced gentrification, spatial econometrics, transport equity

MARGINALIZED SPACES: EXPERIENCES OF DISPLACEMENT IN KITCHENER, ONTARIO'S INNER SUBURBS

Abstract ID: 1387

Abstract within Pre-Organized Session 62

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Literature on gentrification focuses primarily on older, aesthetically-attractive inner-city neighbourhoods where residential and commercial spaces are transformed due to the influx of higher-income residents, and the subsequent displacement of lower-income populations (Hackworth, 2002). But displacement can still occur in neighbourhoods where upgrading is not the dominant trend, such as the inner suburbs, which lack both the newness of recently constructed suburbs or the architectural heritage and walkability of neighbourhoods within the urban core. Within Canada and elsewhere, these social and spatial peripheries have seen an increasing concentration of low-income individuals over the last few decades (Cooke & Denton, 2015; Grant et al, 2020).

However, little empirical research has explored the experiences of displacement in marginalized communities within the inner suburbs, particularly when these experiences intersect with new transit investment. Our research is guided by two goals: first, to understand tenants' experiences with spatial and non-spatial forms of displacement within downgrading inner-suburban neighbourhoods; second, to examine to what extent these forms and experiences of displacement differ from gentrifying neighbourhoods in the urban core.

Our research focuses on inner-suburban neighbourhoods in Kitchener, Ontario. The city is situated in Waterloo Region, which, in 2019, opened a 19km Light Rail Transit (LRT) line. While downtown Kitchener has been physically transformed with more than \$2 billion in investment, further along the line, new development is far less visible. However for communities living in these spaces, there are growing displacement pressures, particularly within apartment buildings owned by real estate investment trusts (REITs). For this research, we partnered with a local non-profit and conducted semi-structured interviews with residents living in these spaces. We also analyzed field notes that documented years of harassment and intimidation practices from landlords.

Our analysis reveals both spatial and non-spatial forms of displacement within these early post-war neighbourhoods.

In terms of spatial displacement, vacant units are leased for significantly higher rents (an incentive to push tenants out), property management companies apply for above-guideline rent increases (often resulting in displacement) and subsequently, higher-income residents are slowly moving in. Non-spatial displacement is driven by changes to buildings, residents, surrounding communities, and in some cases transportation access that have left tenants feeling unhomed (Elliott-Cooper et al., 2020), voiceless and disparaged. This is coupled with pressure from property management and landlords who are accused of under-maintaining buildings, neglecting safety and even harassing residents to either avoid spending money or push tenants out (August, 2020).

While gentrification and displacement are far more visible in the urban core, the lived experiences of powerlessness among low-income tenants are almost identical within the inner suburbs. With many new transit lines being proposed or under construction within Canada's inner suburbs, our research both amplifies the voices of these marginalized communities and stresses the need to look beyond the traditional aesthetics and localities when understanding the role that transit can play in shaping patterns of gentrification and displacement.

Citations

- August, M. (2020). The financialization of Canadian multi-family rental housing: From trailer to tower. *Journal of Urban Affairs*, 42(7), 975-997.
- Cooke, T. J., & Denton, C. (2015). The suburbanization of poverty? An alternative perspective. *Urban Geography*, 36(2), 300-313.
- Elliott-Cooper, A., Hubbard, P., & Lees, L. (2020). Moving beyond Marcuse: Gentrification, displacement and the violence of un-homing. *Progress in Human Geography*, 44(3), 492-509.
- Grant, J, Walks, A and Ramos, H (2020) *Changing Neighbourhoods: Social and Spatial Polarization in Canadian Cities*. University of British Columbia Press.
- Hackworth, J. (2002). Postrecession gentrification in New York City. *Urban Affairs Review*, 37(6), 815-43.

Key Words: inner suburbs, gentrification, displacement, transit, lived experiences

BEYOND MOBILITY: THE SYMBOLIC DIMENSIONS OF LIGHT RAIL IN CANADA'S WATERLOO REGION

Abstract ID: 1388

Abstract within Pre-Organized Session 62

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Recent research into light rail transit (LRT) positions this infrastructure as much more than a mobility solution. Planners, policymakers, and elected officials consistently frame light rail systems as an image-building, growth management and development tool (Olesen, 2020). Because of this, the role of LRTs in shaping neighbourhood change, including processes such as gentrification and displacement, is also receiving more scholarly attention (Doucet, 2021). These dynamics bring to the forefront questions of light rail's significance beyond its transportation capabilities, recognizing these systems as complex "assemblages" of materiality and meaning implicated more broadly in the production of urban space (Ferbrache & Knowles, 2017, p. 105; Olesen & Lassen, 2016). However, as Ferbrache and Knowles (2017) assert, the transit literature does not adequately explore the symbolic dimension of light rail, including how various actors and inhabitants understand "what such a technology can and cannot do for the city" (Olesen & Lassen, 2016, p. 374).

Accordingly, this paper analyzes the different discourses surrounding a new LRT line to understand how residents and stakeholders position light rail infrastructure as more-than-transportation. Applying a Lefebvrian lens (Lefebvre, 1991), we more specifically interrogate how residents ascribe meaning to the LRT in relation to their spatial imaginaries and experiences (lived and perceived space), and the extent to which these meanings align with the conceived visions of decision-makers. The case study, Waterloo Region, has a population of approximately 625,000 and is located just over 100km (62 miles) west of Toronto. The first phase of its light rail system began operation in June 2019, following years of planning, construction, and visible investment along the corridor. This paper draws primarily on 65 semi-structured interviews with station-area residents in the months preceding the opening of the line, as well as twenty interviews with key stakeholders in the development of the LRT. We analyze how residents frame the LRT's impacts before the line opened and its role(s) in shaping changes in their community, as well as how their responses relate to the perspectives of local planners, policymakers and politicians.

For key stakeholders, the LRT was conceived primarily as a growth management tool to curb sprawl and encourage intensification. While the LRT also holds symbolism for residents in ways that extend beyond its transportation functionality, the discourses they construct often diverge from those of stakeholders. For residents, light rail's perceived impacts on mobility, material landscapes and social dynamics evoke different (im)possibilities that connect to their broader imaginaries of neighbourhood and (sub)urban life, both present and future. These findings, and our

analysis, enhance our knowledge of the meaning and impact of new transit infrastructure to reveal symbolic dimensions of light rail beyond the realm of mobility.

Citations

- Doucet, B. (2021). The 'hidden' sides of transit-induced gentrification and displacement along Waterloo Region's LRT corridor. *Geoforum*, 125, 37-46.
- Ferbrache, F., & Knowles, R. (2017). City boosterism and place-making with light rail transit: A critical review of light rail impacts on city image and quality. *Geoforum*, 80, 103-113.
- Lefebvre, H. (1991). *The Production of Space* (D. Nicholson-Smith, Trans.). Malden, MA: Blackwell Publishing.
- Olesen, K. (2020). Infrastructure imaginaries: The politics of light rail projects in the age of neoliberalism. *Urban Studies*, 57(9), 1811-1826.
- Olesen, M., & Lassen, C. (2016). Rationalities and materialities of light rail scapes. *Journal of Transport Geography*, 54, 373-382.

Key Words: Light rail transit, neighbourhood change, resident perceptions, symbolic meaning, urban imaginaries

MANUFACTURED HOUSING AND MANUFACTURED HOME PARKS: SETTING AN AGENDA FOR PLANNING RESEARCH AND ACTION (PANEL 1: MHPS AND PLANNING)

Pre-Organized Session 65 - Summary

Session Includes 1372, 1373, 1374, 1375

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Manufactured housing is the largest source of unsubsidized affordable housing in the USA. Yet, planning and housing research has focused relatively little attention on manufactured housing as a housing type or on manufactured home parks (MHPs, also called "mobile home parks") as a form of urbanism. The lack of research attention to this sector is all the more troubling given that MHP residents are especially vulnerable to the negative effects of two of the most critical challenges of contemporary housing and planning: financialization-driven housing precarity and mounting environmental hazard risks associated with climate change. This first of two panels brings together research exploring various dimensions of planning, policy, and urban design for manufactured home parks in the hopes of charting a research agenda to bring much needed attention to this important form of American housing and urbanism. Topics include: MHPs as housing for older people; methods for overcoming the 'invisibility' of MHPs in regulatory, census, and land use data; land use regulation and marginalization of MHPs; and morphological analysis of MHPs as a form of urbanism.

Objectives:

- Explore planning, policy, and urban design issues related to manufactured housing parks.

A BIG DATA APPROACH FOR PREDICTING THE LOCATION OF MANUFACTURED HOME COMMUNITIES

Abstract ID: 1372

Abstract within Pre-Organized Session 65

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Manufactured home communities (MHCs) are a key source of affordable housing in the U.S. The manufactured housing stock is highly segregated from other forms of owned and rented housing (Durst and Sullivan 2019) and a growing body of research demonstrates that MHCs are exposed to environmental inequalities (Pierce, Gabbe, and Gonzales 2018, Sullivan, Makarewicz, and Rumbach 2021, Pierce, Gabbe, and Rosser 2022). Yet systemic research on MHCs is hindered by a lack of state and national registries of these communities and their locations. A range of data sources have been used to create inventories of MHCs across single metropolitan areas, but national snapshots of MHC populations still rely on Census data (Brooks and Mueller 2020), which does not disaggregate between MH on land owned by the MH owner and MH clustered on rented land in MHCs. Prior research (Durst et al. 2021) illustrates that building footprint data and machine learning methods can be used to distinguish between distinct neighborhood typologies, including MHCs, based on the morphology of the neighborhoods' buildings. The unique size and shape of manufactured homes and the unique layout of manufactured housing communities lends itself to morphological analysis and computational methods, which can cover wider territories than existing methods of cataloguing this

housing stock. However, our previous attempt at this analysis was limited in scope due to the need for accurate neighborhood delineations in the form of county plat records. Efforts to implement a similar method over a broader geography are hindered by inaccuracies in the delineation of U.S. Census blocks and the lack of widespread plat map records delineating the boundaries of residential neighborhoods and commercial developments. In this paper, we examine the ability to predict the location of MHCs across a broad geography by using big data and ad hoc neighborhood delineations. Specifically, we use a national database of building footprints and a variety of neighborhood delineations derived from modified census blocks and grid-based delineations to measure neighborhood morphology. We then use machine learning methods (Support Vector Machines) to predict the location of MHCs across the Houston, Texas, and Panama City, Florida metropolitan areas. We use a novel MHC database created by the Manufactured Home Hurricane Action Research project to ground test and verify these methods (<https://mhharp.org/>). The results illustrate that neighborhood morphology can be used to predict the location of MHCs at a broad scale, perhaps nationally, but that the accuracy of these predictions is highly dependent upon the accuracy of the building footprints and neighborhood delineations used. We will discuss the implications for identifying MHCs as well as informal subdivisions, including colonia housing.

Citations

- Durst, Noah J., Esther Sullivan, Huiqing Huang, and Hogeun Park. 2021. "Building Footprint-Derived Landscape Metrics for the Identification of Informal Subdivisions and Manufactured Home Communities: A Pilot Application in Hidalgo County, Texas." *Land use Policy* 101: 105158.
- Durst, Noah J. and Esther Sullivan. 2019. "The Contribution of Manufactured Housing to Affordable Housing in the United States: Assessing Variation among Manufactured Housing Tenures and Community Types." *Housing Policy Debate* 29 (6): 880-898.
- Pierce, Gregory, C. J. Gabbe, and Silvia R. Gonzalez. 2018. "Improperly-Zoned, Spatially-Marginalized, and Poorly-Served? an Analysis of Mobile Home Parks in Los Angeles County." *Land use Policy* 76: 178-185.
- Pierce, Gregory, C. J. Gabbe, and Annabelle Rosser. 2022. "Households Living in Manufactured Housing Face Outsized Exposure to Heat and Wildfire Hazards: Evidence from California." *Natural Hazards Review* 23 (3).
- Sullivan, Esther, Carrie Makarewicz, and Andrew Rumbach. 2021. "Affordable but Marginalized: A Sociospatial and Regulatory Analysis of Mobile Home Parks in the Houston Metropolitan Area." *Journal of the American Planning Association*: 1-13.

Key Words: Housing, Manufactured housing, Big data, Machine learning

REGULATORY EXCLUSION AND MHPS: A COMPARISON OF TEXAS AND FLORIDA

Abstract ID: 1373

Abstract within Pre-Organized Session 65

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Land-use regulations contribute to regional housing segregation in the United States (Pendall 2000). Metropolitan areas – which house over 80% of the U.S. population – are composed of many local jurisdictions with the legal authority to regulate land-use. Metropolitan areas are increasingly segregated by income and race, in-part because of land-use measures that effectively exclude or limit certain housing types and tenure arrangements. Single-family zoning, which limits residential housing development to single-family, detached homes, has been at the center of recent debates about land use planning, housing affordability and segregation. Other land-use tools, like permitted densities, lot size and coverage, and infrastructure requirements, are also used by local jurisdictions to manage development. The fractured landscape of land-use regulation within metropolitan regions is an important issue for regional equity as it can contribute to inequalities of access to housing, infrastructure, social services, transportation, job opportunities, and natural amenities, and variations in exposure to environmental hazards.

Manufactured home parks (MHP) – sometimes termed mobile home parks or manufactured housing communities – are an important source of affordable housing for households with low-incomes in the United States. The limited research on MHPs finds that they are socially and culturally stigmatized and a 'locally unwanted land-use' (LULU) in many communities. Research on land-use regulation and housing segregation has overwhelmingly focused on conventional (site-built, renter- and owner-occupied) housing, however, rather than manufactured homes and manufactured home parks, specifically.

This paper compares the local government regulatory treatment of manufactured home parks in three metropolitan areas in Florida and Texas: Greater Houston, Miami-Dade, and the Panama City metropolitan region. We study the

land use regulation of manufactured home parks at two scales. First, at the local government scale, we collect data on land-use plans that shape the potential building, expansion and/or improvement of MHPs. At the scale of individual parks, we draw a random sample of 1,200 parks and gather data on the current zoning and land use categorization for those parcels. We then compare mobile home park regulation within, and between, our three metropolitan regions.

Across all three urban regions we see clear patterns of regulatory exclusion of manufactured home parks. We find that state and urban context matters, however, for determining which regulatory tools are used to manage the MHPs and where they are predominantly located. Our paper discusses these key similarities and differences and articulates a future research agenda that will allow housers to understand the dynamics of regional housing segregation as it applies to manufactured home parks nationally.

Citations

- Been, V., Ellen, I. G., & O'Regan, K. (2019). Supply skepticism: Housing supply and affordability. *Housing Policy Debate*, 29(1), 25-40.
- Dawkins, C. J., & Koebel, C. T. (2009). Overcoming barriers to placing manufactured housing in metropolitan communities. *Journal of the American Planning Association*, 76(1), 73-88.
- Lens, M. C., & Monkkonen, P. (2016). Do strict land use regulations make metropolitan areas more segregated by income? *Journal of the American Planning Association*, 82(1), 6-21.
- Pendall, R. (2000). Local land use regulation and the chain of exclusion. *Journal of the American Planning Association*, 66(2), 125-142.
- Pendall, R., Lo, L., & Wegmann, J. (2021). Shifts Toward the Extremes: Zoning Change in Major US Metropolitan Areas From 2003 to 2019. *Journal of the American Planning Association*, 1-12.

Key Words: Affordable Housing, Manufactured Home, Mobile Home Parks, Land Use, Zoning

CHANGING HOUSING COSTS FOR OLDER ADULTS LIVING IN MANUFACTURED HOUSING

Abstract ID: 1374

Abstract within Pre-Organized Session 65

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Manufactured homes (MHs) are commonly advertised to low income older adults as an affordable means to achieve homeownership in retirement. MHs provide housing for nearly seven million households in the US, including two million with householders aged 65 or older, according to figures from the 2010 census. Prior research shows that MHs are generally more affordable than conventional housing, yet the costs vary by tenure. Durst and Sullivan (2019) find that MH owners who rent their sites and MH renters pay higher housing costs compared with MH owners who also own their sites. An emerging body of research describes an increasingly financialized mobile home industry, raising concerns that investment companies are buying up mobile home parks and raising site rents for residents who can ill afford to pay more (Sullivan 2018, Salamon & MacTavish 2017, Lamb et al 2022). Most existing research relies on in-depth case studies focused on specific manufactured housing communities (MHCs) or regions. Beyond Durst and Sullivan (2019), less is known about the role of MHs in the US housing system more broadly. And few MH studies center older adults, though they comprise a key demographic for MHCs and often live on fixed incomes, making housing cost increases especially difficult for them to bear (Fenelon & Mawhorter 2021).

In this paper, I examine changes in housing costs for older MH residents during recent decades. I address three main research questions: (1) How have older MH residents' housing costs changed over the period from 1998 through 2018? (2) How do older adults' housing costs change when they move from conventional housing into MHs? (3) How often do older MH owners/renters experience site rent increases, and how much are site rents raised? In addressing these questions, I compare housing costs for MH residents across three tenures: those who own both their home and site (MH owners), those who own their home and rent their site (MH owners/renters), and those who rent both their home and site (MH renters). I also compare MH residents' housing costs with those of renters and homeowners living in conventional housing.

This quantitative descriptive analysis relies on longitudinal Health and Retirement Study data. The HRS is a nationally representative survey with a wide range of questions on the finances and health of adults aged 51 and older. The HRS includes detailed information on older adults' housing situations as well. The survey has been fielded every other year since 1992. Around 1,000 HRS respondents live in mobile homes, depending on the survey year, of which 42% own both their MH and site, 49% own their MH and rent their site, and 9% rent both their MH and site. Preliminary results show that site rents rose faster than inflation over the study period, increasing from a median of \$220 in 1998 (\$340 adjusted for inflation) to \$412 in 2018. This research sheds light on housing affordability concerns facing older adults living in MH, offering insights for planners and policymakers looking to address the

challenges of housing insecurity among a vulnerable population.

Citations

- Durst, N. J., & Sullivan, E. (2019). The Contribution of Manufactured Housing to Affordable Housing in the United States: Assessing Variation Among Manufactured Housing Tenures and Community Types. *Housing Policy Debate*, 29(6), 880–898. <https://doi.org/10.1080/10511482.2019.1605534>
- Fenelon, A., & Mawhorter, S. (2020). Housing Affordability and Security Issues Facing Older Adults in the United States. *Public Policy & Aging Report*. <https://doi.org/10.1093/ppar/praa038>
- Lamb, Z., Shi, L., Silva, S., & Spicer, J. (2022). Resident-Owned Resilience: Can Cooperative Land Ownership Enable Transformative Climate Adaptation for Manufactured Housing Communities? *Housing Policy Debate*, 1–23. <https://doi.org/10.1080/10511482.2021.2013284>
- Salamon, S., & MacTavish, K. (2017). *Singlewide: Chasing the American Dream in a Rural Trailer Park*. Cornell University Press. <http://www.jstor.org/stable/10.7591/j.ctt1vjqq61.3>
- Sullivan, E. (2018). *Manufactured Insecurity*. Oakland, CA: University of California Press. <https://www.ucpress.edu/book/9780520295667/manufactured-insecurity>

Key Words: Manufactured housing, housing affordability, older adults, homeownership, housing insecurity

MANUFACTURED URBANISM: THE MORPHOLOGY OF MANUFACTURED HOME COMMUNITIES

Abstract ID: 1375

Abstract within Pre-Organized Session 65

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Though manufactured home parks (MHPs) (also referred to as “mobile home parks” or “trailer parks”) are a common residential neighborhood type and a major source of unsubsidized affordable housing in the USA (Durst and Sullivan 2019), they receive much less attention from planning and housing researchers than other forms of affordable housing (Lamb, Shi, and Spicer Forthcoming). This research gap is especially glaring in the realm of urban design. This paper seeks to address this gap, treating MHPs as a form of urbanism and a legitimate subject of urban design research.

Recent planning research on MHPs has focused on sociological and policy dimensions of residents’ vulnerability to displacement, financial exploitation, and environmental hazards (Sullivan 2018; Rumbach, Sullivan, and Makarewicz 2020; Pierce, Gabbe, and Gonzalez 2018). The morphology of MHPs - the spatial and material configurations of homes, infrastructure, streets, and public spaces - has received little attention, in spite of the long-recognized importance of these considerations in shaping neighborhood social life, function, and hazard vulnerability (Southworth and Owens 1993; Sharifi 2019).

In 1993 Michael Southworth and Peter Owens published their influential paper “The Evolving Metropolis: Studies of Community Neighborhood, and Street form at the Urban Edge” in the *Journal of the American Planning Association*. The study compares the form of residential neighborhoods, housing types, and street patterns across the San Francisco Bay Area, from the “speculative gridirons” of late 19th century to the “loops and lollipops” of cul-de-sac oriented post-World War II suburbs. Even though the decades before the article’s publication saw the most rapid development of MHPs in history, Southworth and Owens ignore MHPs in their analysis, reflecting the invisibility of these communities among planning and design researchers more broadly (Wheeler 2008).

In this paper, we use geographic frames and methods that parallel those used by Southworth and Owens to analyze MHPs. Using a combination of GIS-enabled spatial analysis and typo-morphological analysis, we consider MHP urbanism in the San Francisco Bay Area at three nested scales. First, we assess the location of MHPs within the region. Next, we analyze a representative sample of MPHs in the region in relation to their immediate surroundings, including analysis of surrounding land uses, relative densities, and access and visibility from public roads. Finally, using the same sample of MHPs, we assess the internal morphological characteristics of MPHs, including their street patterns, public spaces, and relationships between homes and streets.

We find that even in one of the most expensive housing markets in the US, MHPs are widespread, appearing in all but one of the regions’ eight counties. Based on our morphological analysis, we consider how MHPs align with and depart from patterns observed in other post-World War II residential neighborhoods in the region. MHPs share many morphological characteristics with surrounding single-family neighborhoods, including limited access, fragmented land uses, and curvilinear street patterns. While MHPs provide a rare source of relatively dense and affordable housing in the Bay Area, their fragmentation, isolation, and dependence on private automobiles can create serious challenges for residents and negative social and environmental externalities. We close by considering urban design strategies for addressing these challenges while preserving the benefits of MHPs enjoyed by residents.

Citations

- Southworth, Michael, and Peter M. Owens. 1993. "The Evolving Metropolis: Studies of Community, Neighborhood, and Street Form at the Urban Edge." *Journal of the American Planning Association* 59 (3): 271–87.
- Durst, Noah J., and Esther Sullivan. 2019. "The Contribution of Manufactured Housing to Affordable Housing in the United States: Assessing Variation Among Manufactured Housing Tenures and Community Types." *Housing Policy Debate* 29 (6): 880–98.
- Lamb, Zachary, Linda Shi, and Jason S. Spicer. Forthcoming. "Why Do Planners Overlook Manufactured Housing and Resident-Owned Communities as Sources of Affordable Housing and Climate Transformation?" *Journal of the American Planning Association*.
- Wheeler, Stephen M. 2008. "The Evolution of Built Landscapes in Metropolitan Regions." *Journal of Planning Education and Research* 27 (4): 400–416.
- Rumbach, Andrew, Esther Sullivan, and Carrie Makarewicz. 2020. "Mobile Home Parks and Disasters: Understanding Risk to the Third Housing Type in the United States." *Natural Hazards Review* 21 (2): 05020001.

Key Words: manufactured housing, urban morphology, manufactured home parks

MANUFACTURED HOUSING AND MANUFACTURED HOME PARKS: SETTING AN AGENDA FOR PLANNING RESEARCH AND ACTION (PANEL 2: MHPS, HAZARDS, AND RESILIENCE)

Pre-Organized Session 67 - Summary

Session Includes 1378, 1379, 1380, 1983

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Manufactured housing is the largest source of unsubsidized affordable housing in the USA. Yet, planning and housing research has focused relatively little attention on manufactured housing as a housing type or on manufactured home parks (MHPs, also called "mobile home parks") as a form of urbanism. The lack of research attention to this sector is all the more troubling given that MHP residents are especially vulnerable to the negative effects of two of the most critical challenges of contemporary housing and planning: financialization-driven housing precarity and mounting environmental hazard risks associated with climate change. This second of two panels features research on issues related to hazard and climate vulnerability and adaptation among residents of manufactured housing and MHPs, including: vulnerability to heat and flooding; barriers to accessing hazard mitigation and recovery resources; and participatory assessments of community vulnerability in cooperatively-owned MHPs.

Objectives:

- Explore planning and policy issues related to environmental and climate hazards for residents of manufactured home parks

THE IMPACT OF MANUFACTURED HOUSING TYPOLOGY ON POST-FLOOD RECOVERY IN THE COLONIAS OF THE RIO GRANDE VALLEY

Abstract ID: 1378

Abstract within Pre-Organized Session 67

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Manufactured Housing communities throughout the US experience heightened vulnerability to environmental hazards and exclusion from finance systems (Rumbach et al. 2020; McCann et al. 2021). This twin-vulnerability, ecological precarity and economic exclusion, can have disastrous results as research shows refinance and rehabilitation loans are critically important to finance post-disaster recovery (Billings et al. 2019). This paper, by focusing on the colonias of the Rio Grande Valley, attempts to understand the direct impact of the Manufactured Housing typology on this specific form of twin-vulnerability.

The colonias of the Rio Grande Valley are a particularly useful example of understanding the economic exclusion and ecological vulnerability of manufactured housing because these communities experience heightened flood risk along with one of the most un- and under-banked communities in the US (Belury 2022). The Rio Grande Valley sits at the southern tip of the Texas-Mexico border and colonias, largely Mexican and Mexican-American informal settlements with a predominant Manufactured Housing typology, experience particularly acute forms of environmental, political,

and economic precarity (Rivera et al. 2021; Belury 2020). Not only are Manufactured Housing households excluded from economic systems to support post-disaster recovery, but in the colonias of the Rio Grande Valley the Federal Emergency Management Authority's (FEMA) policy of 'Deferred Maintenance', or denying post-flood claims due to low-quality housing, is often tied to racialized preconceptions of colonias and Manufactured Housing (Rivera et al. 2021). This 'Deferred Maintenance' policy became a legal battle when, in the wake of Hurricane Dolly in 2008, the Texas Rio Grande Legal Aid (TRLA) partnered with La Union Pueblo Entero (LUPE) to sue FEMA, arguing the policy was racist and discriminatory (Rivera et al. 2021).

Utilizing focus groups and interviews with colonia residents in the Rio Grande Valley, quantitative statistical analysis of Home Mortgage Disclosure Act (HMDA) data, and discourse analysis of court documents in LUPE et al. Vs. FEMA I detail how Manufactured Housing typology biases undermine the efforts of ecologically vulnerable residents to recover from flooding. In addition, this paper argues that the Manufactured Housing typology in the colonias of the Rio Grande Valley deepens environmental injustice and economic precarity. However, rather than essentializing Manufactured Housing as inherently low-quality and unhealthy, I frame the ecological vulnerability of colonias as sites of environmental racism and racial capitalism. Ultimately, this research aims to examine how policy-enshrined attitudes of Manufactured Housing typology (re)produce ecological and economic vulnerability in the colonias of the Rio Grande Valley with implications for how other marginalized Manufactured Housing communities experience environmental injustice and economic exclusion.

Citations

- Lucas Belury (2022) Poco a Poco: Post-Flood Survival in the Colonias of the Rio Grande Valley, Geographical Review, DOI: 10.1080/00167428.2022.2061858
- Billings, S. B., Gallagher, E., & Ricketts, L. (2019). Let the rich be flooded: The unequal impact of hurricane harvey on household debt. Available at SSRN, 3396611.
- McCann, L., Hibberd, R., & Kear, M. (2021). A Profile-Based Approach to Indexing Housing Vulnerability in Tucson: A Case Study of Manufactured Housing.
- Rivera, D. Z., Jenkins, B., & Randolph, R. (2021). Procedural vulnerability and Its effects on equitable post-disaster recovery in low-income communities. *Journal of the American Planning Association*, 1-12.
- Rumbach, A., Sullivan, E., & Makarewicz, C. (2020). Mobile home parks and disasters: understanding risk to the third housing type in the United States. *Natural hazards review*, 21(2), 05020001.

Key Words: Colonias, Disaster Finance, Manufactured Housing, Environmental Racism, Racial Capitalism

REDUCING HEAT VULNERABILITY IN AFFORDABLE AND MANUFACTURED HOUSING: POLICY INNOVATIONS, MOTIVATIONS, AND BARRIERS

Abstract ID: 1379

Abstract within Pre-Organized Session 67

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Extreme heat is the largest weather-related cause of death in the U.S. and the human impacts of heat are expected to worsen with climate change. Housing policy is important for reducing heat vulnerability because (1) lower-cost housing units, including affordable housing and manufactured housing, are disproportionately located in neighborhoods that are hotter and have greater social vulnerability; (2) some affordable housing programs are targeted at seniors, families with children, and people with disabilities – populations that may be more heat sensitive; (3) affordable housing is less likely to have air conditioning than other rental housing types; and (4) low-income residents may lack financial resources to pay utility bills. This study follows previous research indicating that affordable housing and manufactured housing residents in California are more vulnerable to extreme heat relative to residents of other housing types (Gabbe & Pierce, 2020; Pierce et al., 2022).

We answer three questions with a focus on state of California and federal policies related to affordable and manufactured housing. First, how do state and federal policymakers address heat risk for residents of these housing types? Second, what motivates housing policy interventions to reduce heat risk? Third, what are the largest barriers to reducing heat risk, and how can these barriers be overcome? Our research fills gaps in climate adaptation literature because there has been limited focus on housing policies, particularly related to heat (Gabbe & Pierce, 2020; Martín, 2022; Pierce et al., 2022). This research also informs broader debates about policies to enable health and climate resilience for low-income households.

Our approach includes a plan evaluation of existing documents, and semi-structured interviews with representatives from relevant public agencies and housing advocacy groups. We focus on four place-based housing programs or types that have been the subject of previous research in the context of heat: public housing, the Low-Income Housing Tax

Credit (LIHTC), the Affordable Housing and Sustainable Communities (AHSC) program in California, and manufactured housing. Our plan evaluation approach informed by methods and criteria from recent scholarship (Gabbe et al., 2021; Shamsuddin & Leib, 2021). The criteria used to evaluate housing programs include heat-related issue identification, data, and goals; specific policies and strategies (e.g. energy efficiency, green building standards, shade provision, air conditioning access); and implementation and funding. We then interview officials from state and federal agencies that fund, administer, and regulate these programs, along with representatives from major affordable and manufactured housing advocacy groups.

Preliminary results indicate that there are few explicit policies related to reducing heat vulnerability for residents of affordable or manufactured housing. There are few direct heat-related policies in the public housing and LIHTC programs, but these programs indirectly address heat vulnerability through energy efficiency. The most relevant heat-related policies for manufacturing housing pertain to energy efficiency and cooling system standards. One exception is California's AHSC program, which provides supplemental funding to transit-oriented affordable housing developments that reduce greenhouse gas emissions. As a secondary goal, the program includes criteria related to climate resilience, including heat resilience. Forthcoming interviews will allow us to better understand barriers to addressing heat, and map potential policy directions.

These results suggest several lessons for housing planners and policymakers. First, housing plans and policy documents should acknowledge and directly address relevant climate hazards, including heat. Second, there is a need for funding to reduce heat vulnerability for residents of affordable and manufactured housing. Third, these interventions may be most likely to be adopted if they are framed in terms of co-benefits, including residents' health and energy security.

Citations

- Gabbe, C. J., & Pierce, G. (2020). Extreme heat vulnerability of subsidized housing residents in California. *Housing Policy Debate*, 30(5), 843–860. <https://doi.org/10.1080/10511482.2020.1768574>
- Gabbe, C. J., Pierce, G., Petermann, E., & Marecek, A. (2021). Why and how do cities plan for extreme heat?: *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X211053654>
- Martín, C. (2022). Exploring climate change in U.S. housing policy. *Housing Policy Debate*, 32(1), 1–13. <https://doi.org/10.1080/10511482.2022.2012030>
- Pierce, G., Gabbe, C. J., & Rosser, A. (2022). Households living in manufactured housing face outsized exposure to heat and wildfire hazards: Evidence from California. *Natural Hazards Review*.
- Shamsuddin, S., & Leib, G. (2021). Weather or not: Tracking hurricanes and changes to low-income housing tax credit program plans. *Housing Policy Debate*, 0(0), 1–24. <https://doi.org/10.1080/10511482.2021.1919909>

Key Words: Housing policy, Affordable housing, Manufactured housing, Climate adaptation, Extreme heat

CO-CREATING KNOWLEDGE FOR ACTION: A RESIDENT-DRIVEN RESEARCH AGENDA

Abstract ID: 1380

Abstract within Pre-Organized Session 67

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In an age of dire climate justice impacts for front -line communities, how might academics re-envision a research framework that supports the transformation of vulnerability rather than simply its codification? Manufactured housing communities (MHCs) sit at the confluence of social vulnerability and hazard- prone physical locations, positioning them as likely sites of disaster (Rumbach et al., 2020). For most manufactured housing residents, a significant aspect of their social vulnerability is the unique form of housing tenure found in MHCs. Residents own the mobile home itself, but pay rent on the lot underneath it, frequently to a for-profit landlord. This creates a power dynamic that leads to vulnerabilities and disadvantages for homeowners while favoring landlords, as well as creating more complex challenges to disaster recovery.

Resident-owned communities, or ROCs, are manufactured housing communities that have worked with national and local non-profit housing partners to purchase the land underneath their homes. This land is then owned by an affordable housing cooperative managed by the residents themselves. ROCs present many positive opportunities for residents to reduce their hazard vulnerability and reduce housing precarity (Lamb et al., 2022). Resident-ownership, however, is not a panacea. ROCs only partly resolve the split-ownership problem and, like all MHC's, remain sites where physical hazards and social vulnerability frequently meet.

Research on vulnerable populations in disaster-prone contexts provides an invitation for academics to reconsider existing research paradigms and commonly used methods and methodologies, including deficit narratives at the heart

of social vulnerability frameworks. Jacobs (2019) reminds hazard researchers and planners that disaster survivors are not defined by their vulnerability, but instead that they are made vulnerable through social and economic systems as well as histories of systemic oppression. Manufactured housing residents are not passive victims of their vulnerabilities. Advocacy efforts from within MHC's, including the resident-owned communities movement, and resident groups' organizing for policy changes, demonstrate the agency of would-be research subjects, whose situated knowledge and ongoing advocacy has the potential to improve research framing, relevance, and other aspects of research quality. As academics outline a research agenda regarding MHC's and climate change vulnerabilities, we ask residents themselves what contributes to their vulnerability, and what research they need to make change.

Critical methodologies such as participatory action research offer academics opportunities to improve research quality, relevance, and impact (Balazs & Morello-Frosch, 2013). Rooted in both Habermas's theory of communicative rationality as well as the work of Colombian sociologist Orlando Fals Borda and Brazilian educational philosopher Paulo Freire, participatory action research is predicated on the co-generation of research questions, often with marginalized research subjects. It proceeds with the inclusion of these participants in varying aspects of the research process, including data collection, interpretation, and dissemination. These approaches supplant the traditional researcher/research-subject relationship, and instead define empirical inquiry as a partnership, with academic and community researchers each bringing different skills, perspectives, and insights to knowledge production. Critical and participatory methodologies – be they the critical praxis driven tradition of participatory action research or work that interrogates institutions of power by “studying up” (Nader, 1972), open opportunities for academics to produce a wide variety of knowledge that dovetails with the needs of impacted communities.

Through semi-structured interviews with resident-owners of manufactured housing communities in Colorado as an initial step in the participatory action research process, this paper presents preliminary findings regarding resident's understanding of economic, political, and physical barriers to disaster mitigation, as well as opportunities for further research that may support their adaptive capacity.

Citations

- Balazs, C., & Morello-Frosch, R. (2013). The Three Rs: How Community-Based Participatory Research Strengthens the Rigor, Relevance, and Reach of Science. *Environmental Justice*, 6(1), 9–16.
- Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, 18(1), 24–39. <https://doi.org/10.1177/1473095218763221>
- Lamb, Z., Shi, L., Silva, S., & Spicer, J. (2022). Resident-Owned Resilience: Can Cooperative Land Ownership Enable Transformative Climate Adaptation for Manufactured Housing Communities? *Housing Policy Debate*, 0(0), 1–23. <https://doi.org/10.1080/10511482.2021.2013284>
- Nader, L. (1972). Up the Anthropologist: Perspectives Gained From Studying Up. <https://eric.ed.gov/?id=ED065375>
- Rumbach, A., Sullivan, E., & Makarewicz, C. (2020). Mobile Home Parks and Disasters: Understanding Risk to the Third Housing Type in the United States. *Natural Hazards Review*, 21(2), 05020001. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000357](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000357)

Key Words: hazards, Resident-owned communities, Manufactured housing, Participatory action research, Climate change adaptation

‘LIVES IN A TRAILER’: EXTREME HEAT, ENERGY EQUITY, AND HOUSING JUSTICE

Abstract ID: 1983

Abstract within Pre-Organized Session 67

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In recent years, an extensive literature has developed on fuel (or energy) poverty (Bouzarovski and Petrova 2015; Walker and Day 2013). Led by U.K. scholars, energy poverty research has been dominated by a focus on household heating infrastructure in cold regions. This paper calls for critical attention to energy poverty in warm regions where increasing temperatures pose disproportionate risks to vulnerable populations, particularly acute for residents of older mobile homes. While energy poverty has evolved since its introduction by Boardman, in contemporary usage it refers to “the inability to attain a socially and materially necessitated level of domestic energy services” (Bouzarovski and Petrova 2015:31). We focus not only on energy poverty but also energy equity to encompass the adaptation and resilience of households and communities (Hall, Hards, and Bulkeley, 2013). Our research examines climate risk within a particular type of housing—manufactured homes—a sector that is the largest source of unsubsidized affordable housing in the United States (Rumbach, Sullivan, and Makarewicz, 2020).

Based on research in manufactured housing (MH) communities which constitute 10% of housing stock in the desert city of Tucson, Arizona, we seek to contribute to theoretical understandings and planning implications of energy

poverty in warm regions with exposure to chronic/extreme heat. This paper is based on two years of ethnographic research among institutional representatives and residents of manufactured housing communities. We use a three-tiered intersectional approach that brings together the subfields of energy equity, climate vulnerability, and housing justice to understanding multi-dimensional vulnerabilities of MH households. Our research team conducted a total of 85 interviews including 71 (in English or Spanish) with MH residents in geographically disparate and structurally heterogeneous settings and 13 with government officials and representatives of social service organizations. Of interview participants, 35% of MH residents were housing cost-burdened and 40% live in pre-1976 mobile homes, units that were not built to current construction and safety standards.

The average daily temperature in Tucson during the summer months is 94°F (34°C); the average temperature in July is 100°F (38°C) with average July low of 77°F (25°C). Unlike in the past, nighttime temperatures have continued to remain high in recent years meaning inside temperatures also fail to “naturally” cool down at night leading to increased health risk. Although 73% of MH residents in the study had at least some air conditioning (AC), 10% had neither AC nor swamp cooling, a traditional evaporative cooling system in the arid climate. We found that AC is not a guarantee of protection from heat. Nearly 40% of the MH residents we interviewed said they could not maintain comfortable indoor temperatures. Just as cooler climates can still experience the impacts of extreme heat (e.g., Oregon, Washington, and British Columbia in 2021), so too can warmer climates experience impacts from cold, with 16% of interviewees reporting having no heating in their unit.

Access to liquidity (e.g., money, credit, subsidies) shapes adaptive capacity to extreme heat. MH faces unique disadvantages in access to U.S. federal low-income housing assistance funding (e.g., LIHEAP), less access to credit (Kear et al., in review), and ability to navigate social assistance programs. We found that land tenancy matters, with co-ops more resilient to climate due to lower housing costs overall, relative to traditional lease arrangements.

MH residents are disproportionately exposed to heat risk and health impacts due to demographic and socioeconomic composition, financial precarity, and climate stress. The research highlights resilience measures of MH residents and concludes there is a compelling need to build energy equity in warm regions through greater attention to planning around intersectional characteristics of MH households and heat-related housing and poverty alleviation policies.

Citations

- Bouzarovski, Stefan and Saska Petrova. (2015). A global perspective on domestic energy deprivation: Overcoming the energy poverty-fuel poverty binary. *Energy Research & Social Science* 10:31-40.
- Day, Rosie and Gordon Walker. (2013) Household energy vulnerability as ‘assemblage,’ in K. Bickerstaff, G. Walker, and H. Bulkeley, eds., *Energy justice in a changing climate: Social equity and low-carbon energy*. London: Zed Books, 14-29.
- Hall, Sarah Marie, Sarah Hards, and Harriet Bulkeley. (2013) New approaches to energy: Equity, justice, and vulnerability. Introduction to the special issue. *Local Environment* 18(4):413-421.
- Kear, Mark, Dugan Meyer, and Margaret Wilder. (In review) Real Property Supremacy: Manufactured housing and the limits of inclusion through finance.
- Rumbach, Andrew, Esther Sullivan, and Carrie Makarewicz. (2020) “Mobile Home Parks and Disasters: Understanding Risk to the Third Housing Type in the United States.” *Natural Hazards Review* 21 (2): 05020001. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000357](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000357).

Key Words: Energy poverty, Energy Equity, Extreme heat, Manufactured housing, Climate vulnerability

Track 6 Roundtables

SUBURBIA IN THE 21ST CENTURY: FROM DREAMSCAPE TO NIGHTMARE?

Abstract ID: 1520

Roundtable

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 KEIL, Roger [York University] rkeil@yorku.ca, participant
 GORDON, David [Queen's University] david.gordon@queensu.ca, participant
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 MOOS, Markus [University of Waterloo] markus.moos@uwaterloo.ca, participant

This roundtable focuses on the condition, typology and prospects of suburbia in the 21st century. Despite the prevalence of the suburbs within our geographical and sociological imaginations combined with the spatial and demographic scale of the suburbs, academic analyses of suburbia have long been overshadowed by "methodological cityism" within urban planning/geography. That is to say, the 'urban' has been privileged over the suburbs. This roundtable, which adopts the format of an author meet critics panel, takes it lead from the recently published book, *Suburbia in the 21st Century: From Dreamscape to Nightmare*, and calls for the suburbs to be recognised and placed at the analytical centre of urban/metropolitan studies within the Global North and Global South. The four core panellists in this roundtable will, firstly, critically reflect upon the issues at their heart of their chapters - fixing Toronto's suburbia from within; the extent and degree of suburbia within metropolitan Canada; mortgage delinquency amongst same-sex suburban households in the US; and COVID suburbanisms within Australia, the UK and the US - and their relevance to developing a critical understanding of the meaning and role of the suburbs within contemporary cities and into the future. Crucially, the panel will highlight the dynamic and complex nature of the suburbs in the 21st century as a space of/for the pursuit and realisation of the 'great suburban dream' whilst also simultaneously being a potential victim of economic, social and environmental nightmares. The panel will highlight that the suburbs are by no means a homogenous space (i.e. landscape) If anything, 21st century suburbs will be shown to be an increasingly diverse space (i.e. a blendscape) in morphological, demographic, social, cultural and economic terms. that. This roundtable will also several critics who will question the core panellists about their respective topics as well as their views on the future of suburbs and suburban scholarship. Members of the audience will also be offered the opportunity to ask questions of the core panellists. Ultimately, this roundtable is designed to advance understandings of the definitions, meanings, character, transformations and prospects of the suburbs.

Citations

- Maginn, P. J. & Anacker, K. B. (2022) (Eds.) *Suburbia in the 21st Century: From Dreamscape to Nightmare?*
- Keil, R. (2017) *Suburban Planer: Making the World Urban from the Outside In.*
- Moos, M. & Walter-Joseph (2017) *Still Detached and Subdivided?: Suburban Aays of LOving in 21st Century North America*

Key Words: Suburbia, Global Suburbanisms, Extended Urbanisation, Suburban Dream/Nightmare

Track 6 Individual Paper Submissions

YES, IN GOD'S BACKYARD! BUILDING AFFORDABLE HOUSING ON RELIGIOUS PROPERTY

Abstract ID: 1052

Individual Paper Submission

MIAN, Nadia [Rutgers University Bloustein] nadia.mian@rutgers.edu, presenting author

Religious institutions are generally left out of the conversation when it comes to community development unless they are providing a social service. They are "invisible" stakeholders rarely acknowledged by professional planners. This study provides an opportunity for planners to understand how they can work with houses of worship to address the affordable housing crisis.

In many cities and suburbs houses of worship are struggling with dwindling congregation sizes, dilapidated buildings, and underutilized and expansive parish property (Chaves and Eagle 2015; Hackworth and Gullikson 2013; Mian 2008). Municipalities are struggling with the rising cost of housing and property values leading to an affordable housing crisis across the country.

To adapt and evolve as the religious landscape changes in North America, many houses of worship have partnered with municipalities, developers, and non-profit organizations to build affordable housing on their own property.

By engaging in affordable housing construction, congregations are able to fulfill their religious mission, potentially expand their congregations, keep their properties, and remain vital members of their community. Municipalities gain the opportunity to construct much needed affordable housing that allows for a mix of incomes, residents and uses in their neighborhoods. However, restrictive land use and zoning regulations make it difficult for faith-based organizations to build affordable housing on their property (Garcia and Sun 2020; Shook 2012).

This paper asks the question: How have religious organizations succeeded in reforming restrictive land use and zoning regulations to build affordable housing on their property? Through a non-random sample of various municipal programs and policies, interviews and archival research, the key findings of this research reveal houses of worship

across the country are changing housing policy and zoning regulations through partnerships with municipalities, upzoning and advocacy and activism.

Citations

- Chaves, Mark, and Alison Eagle. 2015. Religious Congregations in 21st Century America: National Congregations Study.
- Garcia, David and Eddie Sun. 2020. Mapping the Potential and Identifying the Barriers to Faith-Based Housing Development. Turner Center for Housing Innovation.
- Hackworth, J and Gullikson, E. 2013. Giving New Meaning to Religious Conversion: Churches, Redevelopment, and Secularization in Toronto. *The Canadian Geographer* 57:1, 72-89.
- Mian, Nadia A. 2008. "Prophets-for-Profits": Redevelopment and the Altering Urban Religious Landscape. *Urban Studies* 45(10): 2143-2161.
- Shook, Jill. 2012. Making Housing Happen: Faith-Based Affordable Housing Models. Eugene, Oregon: Wipf and Stock Publishers.

Key Words: Affordable Housing, Zoning, Religious Institution

ANALYSIS OF SPATIAL CORRELATION BETWEEN ACCESSORY DWELLING UNITS (ADUS) AND AFFORDABLE AND FAIR HOUSING DEMANDS

Abstract ID: 1055

Individual Paper Submission

KIM, Do [California State Polytechnic University, Pomona] dohyungkim@cpp.edu, presenting author

Accessory dwelling unit (ADU) refers to a completely independent living facility on a lot with a proposed or existing primary residence. ADU has emerged as a policy alternative to increase housing stock and provide affordable options for areas impacted by housing shortages (CAHCD, 2020). Since ADUs can become a flexible infill housing type that provides housing units, creates a wider range of housing options, functions as low-maintenance housing for the elderly to stay near family as they age and facilitates better use of the existing housing fabric in established neighborhoods (Kim, et al., 2021), they are expected to increase the stock of affordable housing and contribute to fulfilling fair housing demands. However, whether ADU is a viable solution to the affordable housing crisis or not is still controversial (Chapple et al., 2017; Ramsey-Musolf, 2018; Pfeiffer, 2019). Some advocates for ADU argue that ADUs have the broad potential to increase the stock of market-affordable housing due to virtue of their smaller size and lower building costs, but some express concern that ADUs do not really increase the stock of affordable housing that is committed to low-income people. Furthermore, there have been limited research that analyzes how exactly ADUs serve fair housing demands.

To shed light on this research topic, this paper attempts to explore the potentials of ADU from the perspective of fair housing. This paper constructs a geographically weighted regression (GWR) model that examines the spatial correlation between ADU developments and affirmatively further fair housing (AFFH) indicators in the City of Los Angeles. The model indicates that ADUs tended to be built in the neighborhoods with more public housing units and redlined areas. However, the correlation between ADU developments and the socio-demographic characteristics of the areas do not represent a clear contribution of ADU to fair housing. The model indicates that ADUs tended to be built in the areas where more people of color live and median household income is lower, while there are fewer ADU constructions in the areas with a higher poverty rate and a higher number of limited English-speaking households. More surprisingly, ADU developments do not present a correlation with any opportunity indicators. This suggests that ADUs in the city probably were built in the areas with limited accessibility to jobs and public transit and poorer conditions of environmental health and school proficiency. These findings will help planners take appropriate actions and regulations that increase affordable housing production by promoting ADU developments in the areas where there are higher demands in affordable housing.

Citations

- California Department of Housing and Community Development (CAHCD). 2020. Accessory Dwelling Unit Handbook. Sacramento, CA: California Department of Housing and Community Development.
- Chapple, K., Wegmann, J., Mashhood, F., & Coleman, R. 2017. Jumpstarting the Market for Accessory Dwelling Units: Lessons Learned from Portland, Seattle, and Vancouver. University of California Berkeley, Turner Center for Housing and Innovation.
- Kim, D., Baek, S., Garcia, B., Vo, T., & Wen, F. 2021. The Influence of ADU Policy on the Contributing Factors to ADU Development: A Case of Los Angeles. Presented at the Association of Collegiate Schools of Planning Conference, October 13-20, Virtual.

- Pfeiffer, D. 2019. Regulating ADUs in California: Local Approaches & Outcomes. University of California Berkeley, Turner Center for Housing and Innovation.
- Ramsey-Musolf, D. 2018. Accessory Dwelling Units as Low-Income Housing: California's Faustian Bargain. *Urban Science*, 2 (3): 89.

Key Words: Accessory dwelling unit (ADU), Affordable housing, Affirmatively further fair housing (AFFH), Geographically weighted regression (GWR)

DOES THE LOW-INCOME HOUSING TAX CREDIT PROGRAM EXPAND ACCESS TO OPPORTUNITY NEIGHBORHOODS? TRACKING MOVEMENTS OF LOW-INCOME TENANTS IN CALIFORNIA

Abstract ID: 1056

Individual Paper Submission

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The Low Income Housing Tax Credit (LIHTC) program can potentially help expand access to neighborhoods with low poverty and economic opportunities for low-income households. Prior studies have generally described that LIHTC units are sited in neighborhoods with relatively high poverty rates and limited opportunities, but with improvements in recent years. Beyond these cross-sectional analyses, scholars have not extensively looked at the movements of LIHTC tenants. It remains unclear whether the program creates opportunities for low-income households to move into better neighborhoods than they previously live in or reinforces residential segregation by encouraging moves to similarly disadvantaged neighborhoods. Using an extensive consumer database, I am able to track the movements of tenants who move into newly placed-in-service LIHTC properties in California. My result shows that tracked LIHTC residents on average experience increases, rather than decreases, in their neighborhood poverty exposure. A low-income household who moves into a LIHTC unit faces an increase in the neighborhood poverty rate for about 6 percentage points over other low-income renters when they move. These LIHTC tenants also see lower levels of neighborhood amenities than at their previous addresses. A low-income household may have to trade better neighborhood amenities with low rent offered by a tax credit unit. Despite the increased prioritization towards opportunity in California, the LIHTC program has not significantly changed tenants' exposures to poverty. The methodology in this paper can be replicated on a larger scale.

Citations

- Reid CK (2019) Rethinking "Opportunity" in the Siting of Affordable Housing in California: Resident Perspectives on the Low-Income Housing Tax Credit. *Housing Policy Debate* 29(4). Routledge: 645–669. DOI: 10.1080/10511482.2019.1582549.
- McClure K and Johnson B (2015) Housing Programs Fail to Deliver on Neighborhood Quality, Reexamined. *Housing Policy Debate* 25(3): 463–496. DOI: 10.1080/10511482.2014.944201.
- Lens MC and Reina V (2016) Preserving Neighborhood Opportunity: Where Federal Housing Subsidies Expire. *Housing Policy Debate* 26(4–5): 714–732. DOI: 10.1080/10511482.2016.1195422.
- Horn KM and O'Regan KM (2011) The low income housing tax credit and racial segregation. *Housing Policy Debate* 21(3): 443–473. DOI: 10.1080/10511482.2011.591536.
- Ellen IG, Horn KM and Kuai Y (2018) Gateway to Opportunity? Disparities in Neighborhood Conditions Among Low-Income Housing Tax Credit Residents. *Housing Policy Debate* 28(4): 572–591. DOI: 10.1080/10511482.2017.1413584.

Key Words: affordable housing, low-income renters, residential mobility, neighborhood opportunity, poverty

PREVENTING VACANT AND ABANDONED PROPERTY: THE ROLE OF HOMEOWNERSHIP PROGRAMS FOR VERY LOW-INCOME HOUSEHOLDS

Abstract ID: 1068

Individual Paper Submission

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Numerous programs seek to increase low-income homeownership to enable more households to gain the benefits of owning a home such as increased wealth, control over their own housing, better health, and better education for children. Implicit in many of these programs in legacy cities is a goal of preserving properties and returning them to the tax rolls. No assessment exists of whether such programs can achieve these goals with respect to property. Property outcomes are in part a reflection of the sustainability of low-income homeownership, which previous

research has shown is precarious. A homeowner may sell to gain cash for emergency expenditures, leave a house vacant and therefore vulnerable to destruction, or lose the house to mortgage or tax foreclosure.

Research has evaluated the effects of a range of programs on preventing or remediating vacant and abandoned properties. Scholars, policy analysts, and planners have examined the externalities from reuse and local ownership of vacant lots, the work of land banks in addressing publicly owned property, the effects of demolition of blighted structures, and the impacts of large targeted neighborhood investments, for instance. No research has considered how programs to increase very low-income households' homeownership might affect property outcomes.

This research examines the property outcomes after nearly five years in two programs that sold houses to very low income households in 2017 in Detroit and in a comparison group of properties where such households were not successful in buying. One program sold houses to the renters living in houses their landlords had allowed to go into tax foreclosure. The purchasers had been recruited from a list of renters seeking to buy back their homes at the tax auction. The program provided almost no orientation to homeownership. In the second program, the Detroit Land Bank sold houses to the occupants of houses in their inventory in 2017. The occupants had had some claim to the houses before the properties went through tax foreclosure, failed to sell at the tax auction, and entered the Land Bank's inventory. Most were previous owners or renters or family members of previous owners or renters. The purchasers went through homeowner education and training over a period of more than a year and received their deed only after saving for and paying property taxes. A third group's properties serve as a comparison to examine what would have happened to properties without the program interventions. The occupants of comparison properties sought to buy the houses at the tax auction; some succeeded in doing so but most did not. The types of purchasers and houses in the two programs and at the tax auction were similar in 2017.

The research integrates data on property from numerous sources to investigate which properties are still occupied by the low-income purchaser, have had major repairs, are vacant or tax delinquent, have experienced tax foreclosure again, are back in Land Bank ownership, and have been demolished or now require demolition. I expect that the Land Bank program will show greater success in keeping properties occupied and out of tax foreclosure than the program that sold to households without homeownership education but that both of these will show much greater success in preserving property and keeping it on the tax rolls than the sale of properties at the tax auction which occurs without screening of the purchasers. In addition, I expect the property data to reveal a range of ways that very low-income homeownership might be reinforced for longer periods of ownership and identify how some purchasers find profit in advancing disinvestment, practices that city governments should seek to prevent.

Citations

- George C. Galster, Peter Tatian, and John Accordino, "Targeting Investments for Neighborhood Revitalization," *Journal of the American Planning Association* 72(4): 457-474 (2006).
- Christopher E. Herbert and Eric S. Belsky, "The Homeownership Experience of Low-Income and Minority Households: A Review and Synthesis of the Literature," *Cityscape* 10(2): 5-59 (2008).
- Daniel Kuhlmann, "Fixing Up after Tearing Down: The Impact of Demolitions on Residential Investment," *Journal of Planning Education and Research*, published online 2020.
- Matthew Stern and T. William Lester, "Does Local Ownership of Vacant Land Reduce Crime? An Assessment of Chicago's Large Lots Program," *Journal of the American Planning Association* 87(1): 73-84 (2021).
- Shannon Van Zandt and William Rohe, "The Sustainability of Low-Income Homeownership: The Incidence of Unexpected Costs and Needed Repairs among Low-Income Homebuyers," *Housing Policy Debate* 21(2): 317-341 (2011).

Key Words: low-income homeownership, property disinvestment, vacancy, abandonment, tax foreclosure

SPEEDING UP THE COMMONS: COLLECTIVE TENURE AS MOBILE POLICY IN THAILAND AND BEYOND

Abstract ID: 1076

Individual Paper Submission

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In recent years, collective forms of land tenure such as housing cooperatives and community land trusts have gained in popularity around the world. Collective ownership of land and housing presents the possibility of imagining diverse economies that preserve affordability in the realm of housing and in doing so also allow residents opportunities to engage in meaningful work and recreation beyond wage labor (Huron 2018). However, some authors have noted that in scaling up and moving around, collective tenure forms have lost their political ambitions and become a technocratic approach to affordable housing (DeFilippis et al. 2019). Research on the processes by which these models become mobile has just begun, though (Thompson 2020). In this paper, I ask, how do collective tenure become "fast policy" (Peck and Theodore 2015)? And when they do, are the lessons being learned from previous

successes the right ones?

To answer these questions, I analyze the case of the Baan Mankong collective housing program of Thailand, which has reached over 113,000 households and has served as a model for similar programs around the world. Relying on 18 months of ethnographic research with organizations that administer the policy, I illustrate how Baan Mankong has morphed from grassroots movement to global model. I focus particularly on how the program has been packaged for international audiences, and I compare this packaging to how the program functions on the ground.

My findings demonstrate a disconnect between the model's "sales pitch" and what actually makes for successful projects. On the ground, projects that endure are those in which leaders devote their time and labor out of a dedication to their fellow community members and a political commitment to a larger movement. Absent this commitment, the program is merely a lot of work. However, this labor and hardship is often erased in English-language "best practice" accounts, which instead emphasize a few discrete features of the model. These features include collective finance, self-enumeration and mapping, and federating communities into formal networks. My analysis demonstrates how each of these program design features originates in strategies of grassroots organizing, but as the policy has become mobile, their political content and social meaning has changed such that they are formalized and coincide with popular global discourses around "rituals" of self-empowerment and co-production (Watson 2014). Thus, attempts to scale up and spread this collective alternative have focused not on what actually makes the program successful, but rather on a set of procedures and institutional arrangements that are amenable to replication and fit neatly within existing development frameworks. Efforts to learn from successful alternative economic development models must therefore focus on the content and meaning behind models, not merely on their formal elements.

Citations

- DeFilippis, James, Olivia R. Williams, Joseph Pierce, Deborah G. Martin, Rich Kruger, and Azadeh Hadizadeh Esfahani. 2019. "On the Transformative Potential of Community Land Trusts in the United States." *Antipode* 51 (3): 795–817. <https://doi.org/10.1111/anti.12509>.
- Huron, Amanda. 2018. *Carving Out the Commons: Tenant Organizing and Housing Cooperatives in Washington, D.C.* 1 edition. Univ Of Minnesota Press.
- Peck, Jamie, and Nik Theodore. 2015. *Fast Policy: Experimental Statecraft at the Thresholds of Neoliberalism*. Minneapolis: Univ Of Minnesota Press.
- Thompson, Matthew. 2020. "From Co-Ops to Community Land Trusts: Tracing the Historical Evolution and Policy Mobilities of Collaborative Housing Movements." *Housing, Theory and Society* 37 (1): 82–100. <https://doi.org/10.1080/14036096.2018.1517822>.
- Watson, Vanessa. 2014. "Co-Production and Collaboration in Planning – The Difference." *Planning Theory & Practice* 15 (1): 62–76. <https://doi.org/10.1080/14649357.2013.866266>.

Key Words: Community Economic Development, Collective Land Tenure, Policy Mobility, Community Development, Affordability Housing

'DISPLACEABILITY' IN PUBLIC HOUSING CONVERSIONS: THE RENTAL ASSISTANCE DEMONSTRATION (RAD) AND DISPARITIES IN PRIVATIZATION INITIATIVES IN CALIFORNIA

Abstract ID: 1088

Individual Paper Submission

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Traditional public housing has been in retreat in the United States for several decades, with the HOPE VI program resulting in the reduction of social housing units by an estimated quarter million nationwide (Goetz, 2013). To date, relatively little scholarly work has focused on the impacts of Housing and Urban Development (HUD's) latest effort to change the form and function of public housing: the Rental Assistance Demonstration (RAD). RAD is an Obama-era program that outsources traditional public housing to external management while claiming protections for existing residents. Generally, the conversion provides residents with a project-based voucher to remain in their unit while allowing a private or non-profit operator to take over management and access debt for repairs that traditional public housing authorities cannot leverage (Reid, 2017). Journalistic accounts have shown how public housing residents nationwide have expressed concern that RAD conversions will result in their eventual displacement, yet minimal studies have focused on the impacts of RAD on residents (Hayes, Gerkin, and Popkin, 2021). More empirical work on RAD is necessary to critically consider how– and which– residents are weathering this quiet form of privatization that Hanlon (2017) has deemed the nail in the coffin of public housing in the United States.

In this paper, we employ mixed methods and use California public housing conversions to explore which communities are subject to privatization processes through RAD. We ask, do socio-economic disparities exist between traditional public housing and eventual RAD-converted housing prior to conversions in California? If so, what does

this reveal about whose homes were subject to privatization? And how do impacted residents interpret these changes? We focus on California because it has the second-highest number of proposed RAD transactions in the country. Rather than measuring potential displacement from converted public housing from the offset, we engage with what Yiftachel (2020) has described as a necessary shift from measuring displacement as it occurs to a critical consideration of “displaceability,” by focusing on the factors that make certain communities vulnerable to dispossession.

To address these questions, we use historical HUD’s Picture of Subsidized Households (POSH) data from 2010, two years prior to the introduction of the RAD initiative. We consider socio-economic disparities between residents living in traditional public housing that remained public as compared to communities that will eventually be converted to external managers via RAD. We will pair the quantitative findings with qualitative data from focus groups in projects undergoing RAD conversions to see how residents are interpreting the changes to their homes and communities, with a particular focus on fears of displacement.

When compared to traditional public housing communities that remained public, we find that on average, public housing communities that were eventually converted to RAD were larger and more populated, with a significantly higher rate of overhoused residents. In terms of socio-economic differences, residents in properties eventually converted to RAD had a significantly higher rate of disabilities among household members and heads of households, of Asian/Asian-American households, and of households with extremely low incomes. As RAD enters its tenth year and appears to be the future of public housing nationwide, it merits critical observation. In this research, we highlight the racial and socioeconomic disparities between which communities faced privatization, followed by a qualitative understanding of resident impressions and fears as their communities undergo change. Empirically and theoretically, we speak to the planning scholarship that considers various forms of displacement, including risks of community dispossession before the specter of potential physical displacement begins. We also contribute to a growing body of scholarship that focuses on the impacts of RAD on existing residents.

Citations

- Goetz, E. G. (2013). The audacity of HOPE VI: Discourse and the dismantling of public housing. *Cities*, 35, 342–348. <https://doi.org/10.1016/j.cities.2012.07.008>
- Hanlon, J. (2017) ‘The Origins of the Rental Assistance Demonstration Program and the End of Public Housing’, *Housing Policy Debate*. Routledge, 27(4), pp. 611–639. Doi: 10.1080/10511482.2016.1262445.
- Hayes, C., Gerken, M. and Popkin, S. J. (2021) ‘Impact of Rental Assistance Demonstration Program Conversions on Public Housing Tenants’, *Cityscape*. US Department of Housing and Urban Development, 23(2), pp. 27–46. Available at: <https://www-jstor-org.libproxy.sdsu.edu/stable/27039949>.
- Reid, C. K. (2017) Lessons for the future of public housing: Assessing the early implementation of the rental assistance demonstration program. The Terner Center, Berkeley, CA. https://ternercenter.berkeley.edu/wp-content/uploads/pdfs/rad_report.pdf
- Yiftachel, O. (2020). From displacement to displaceability. *City*, 24(1–2), 151–165. <https://doi.org/10.1080/13604813.2020.1739933>

Key Words: public housing, privatization, housing disparities, displaceability, Rental Assistance Demonstration (RAD)

IMPACT OF DISASTER MITIGATION PROJECTS ON LOW- AND MODERATE-INCOME HOMEOWNERSHIP IN NEW YORK CITY AFTER THE 2012 HURRICANE SANDY

Abstract ID: 1093

Individual Paper Submission

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Mitigation projects and policies are the popular responses to disaster resilience strategies. Yet, we have little knowledge about the impacts of these projects on various households, particularly low- to moderate-income homeowners. Using New York City (NYC) as a case study, this research explores the impact of city-wide mitigation projects on the percentage of low- and moderate-income homeowners. NYC is a diverse community that has faced various disasters in its history, such as Hurricane Sandy in 2012. Recently, the city has shifted to mitigation and completed 227 mitigation projects for various hazards, with another 473 funded and still ongoing projects. This paper applied differences in differences approach using data from the American Community Survey 5-year estimates for 2007-2011 and 2014-2019, before and after Hurricane Sandy, and the NYC Hazard Mitigation dataset of the post-Sandy mitigation projects. Findings show that the percentage of low- to moderate-homeowners has decreased when mitigation projects are being implemented or ongoing. Findings also provide a greater understanding of how changes in percentage of low- to moderate-income homeowners are related to tract-level market and socioeconomic changes. These results call into question whether the benefits of mitigation interventions are distributed fairly and whether they increase the community resiliency equally.

Citations

- Carasso, A., Bell, E., Olsen, E. O., & Steuerle, C. E. (2005). Improving homeownership among poor and moderate-income households. Washington, DC: Urban Institute.
- Sheldon, T. L., & Zhan, C. (2019). The impact of natural disasters on us home ownership. *Journal of the Association of Environmental and Resource Economists*, 6(6), 1169-1203
- Gould, K. A., & Lewis, T. L. (2021). Resilience Gentrification: Environmental Privilege in an Age of Coastal Climate Disasters. *Frontiers in Sustainable Cities*, 85.
- Lee, D. (2017). Neighborhood change induced by natural hazards. *Journal of Planning Literature*, 32(3), 240-252.

Key Words: Mitigation, low- and moderate-income homeowner, homeownership, disaster, Hurricane Sandy

GARAGES AND DRIVEWAYS AREN'T JUST FOR PARKING: HOW SINGLE-FAMILY HOME RESIDENTS ARE ADAPTING THESE SPACES TO PEER, PLAY, AND PROSPER

Abstract ID: 1094

Individual Paper Submission

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A common feature of the U.S. suburban landscape is the garage home, a kind of home where the garage and driveway dominate the front of the home. Garage homes use land efficiently, which offers profitability for developers and affordability to households; yet they are blamed for various neighborhood ills, like a lack of physical activity and socialization among neighbors. Despite their popularity and concerns about their social impacts, there have been few attempts to systematically explore the uses, prevalence, and geography of garage homes, including how their uses have evolved over the COVID-19 pandemic. Adapting garages and driveways for uses other than parking may help diverse households thrive in car-oriented neighborhoods and influence relationships between living in these neighborhoods and health.

This research helps to fill these gaps and explore links between adaptation of car-oriented spaces and wellbeing by using a mixed-methods and multi-scalar approach, triangulating English-language Instagram data with fieldwork and windshield survey data from diverse neighborhoods in Phoenix, Arizona, a quintessential suburban region, across the pre- and post-pandemic periods. First, I show how single-family home residents adapt their attached front garages and driveways to meet their needs by using content and visual analysis to develop a taxonomy of adaptations. These exhibit a range of functions, from health promoting (e.g., gyms and food storage) to habitation (e.g., garage bedrooms and RV parking) to socially generative (e.g., children's play and neighborhood gatherings). Second, I use data from the 2017 and 2022 Phoenix Area Social Survey and U.S. Census to explore links between these adaptations and neighborhood demographic, health, and housing market dynamics. Third, I show how adaptations vary over seasons and in the pre- and post-pandemic periods, highlighting two emerging post-pandemic trends: uses involving creative expression and surveillance.

Overall, this research helps to extend theories of how people adapt their built environments to thrive by identifying 1) how people use garage homes to meet their needs, 2) where different kinds of garage home adaptations occur, and 3) how adaptations change over seasons and after societal disruptions. These findings will help local practitioners and advocates develop targeted strategies to harness the opportunities and remedy the potential harms of garage homes for residents and envision their role in a more automated, post-carbon transportation future.

Citations

- Bello, Mark and Sy Adler. 2004. "Banning the 'Snout House': The Politics of Design in Portland, Oregon." *Journal of Architectural and Planning Research* 21(3): 193-208.
- Brand, Stewart. 1994. *How Buildings Learn: What Happens after They're Built*. New York, NY: Penguin Books.
- Erlanger, Olivia and Luis Ortega Govea. 2019. *Garage*. Cambridge, MA: MIT Press.
- Hayden, Dolores. 2004. *A Field Guide to Sprawl*. New York & London: W. W. Norton.

Key Words: suburbs, housing, transportation, COVID-19

HOUSEHOLD RECOVERY FROM FORECLOSURE: EVIDENCE FROM PANEL SURVEY OF INCOME DYNAMICS (PSID)

Abstract ID: 1107

Individual Paper Submission

Despite policies and efforts to promote homeownership that have continued for decades (Herbert and Belsky, 2008), the homeownership rate dropped sharply to pre-1970 levels with the start of the sub-prime mortgage crisis. The National Delinquency Survey (2010) shows that the mortgage foreclosure rate increased to nearly five percent and nearly four million homeowners lost their homes between 2008 and 2011. Fortunately, the homeownership market has recovered from the aftermath of the recession and returned to its previous state. But, did households who lost their home regain homeownership? Does the housing market recovery result from the recovery of foreclosed households? Although studies on the housing market resilience after the Great Recession show a relationship between regional characteristics and neighborhood recovery (Wang, 2019; Wang & Immergluck, 2019), little is known about the recovery of individual households which can be characterized as regaining homeownership or wealth lost in foreclosure. If the housing market recovery is driven by high-income groups or those who have not been damaged during the crisis, foreclosed households are likely to face challenges such as cost burdened. Since foreclosed households are more likely to move to poor neighborhoods and may have fewer opportunities for new jobs or may have to spend more time commuting than before, it is not easy to recover economically (Niedt & Martin, 2013; Pfeiffer & Lucio, 2015). In addition, they sometimes experience unexpected physical and mental problems after the foreclosure which negatively affects health, stability, and educational opportunities of family members (Katz et al., 2013; Pollack et al., 2011; Williams et al., 2014). They have many hurdles to overcome, but at least some of them become homeowners again. This study brings attention to the area where they lived during their recovery. In addition to individual efforts, and assistance from the government, I expect that there are some advantages or disadvantages brought by the characteristics of the residential area.

This study primarily relies on the 2005 -2019 Panel Study of Income Dynamics (PSID). PSID tracks approximately 5,000 households across the country biannually, providing extensive information on foreclosure experience, familial relationships, homeownership status, locations where they live, life cycle events, socio-economic characteristics, and consumption patterns of the respondents. Since 2009, PSID has added survey questions about foreclosure; Whether a foreclosure process has begun, the year and month of the start, the result of the process, and whether a foreclosed home is a primary residence.

This study seeks to answer the following questions through the experiences of individual households who lost their homes. First, did foreclosed households regain homeownership? Second, is there a relationship between socio-demographic characteristics of foreclosed household and regaining homeownership? Third, where do homeowners who have lost their homes migrate? Finally, what characteristics of the neighborhood help foreclosed households recover? While previous studies have focused on the resilience of housing markets and regions, this study explores the link between regional characteristics and individual household recovery. The recovery of financially disadvantaged households is an important issue for communities and states. Identifying the mechanism that is responsible for household recovery has implications for implementing programs to aid household recovery. It helps determine which programs can give more benefits to recipients to achieve recovery: providing individuals with a monetary subsidy (e.g., covering relocation expenses) or encouraging and aiding them to move into a certain neighborhood. The findings of this study suggest that the government's recovery assistance program should aim to support relocation to areas with lower poverty rates and higher job and educational opportunities.

Citations

- Niedt, C., & Martin, I. W. (2013). Who are the foreclosed? A statistical portrait of America in crisis. *Housing Policy Debate*, 23(1), 159–176.
- Pfeiffer, D., & Lucio, J. (2015). An unexpected geography of opportunity in the wake of the foreclosure crisis: Low-income renters in investor-purchased foreclosures in Phoenix, Arizona. *Urban Geography*, 36(8), 1197–1220.
- Wang, K. (2019). Neighborhood housing resilience: Examining changes in foreclosed homes during the US housing recovery. *Housing Policy Debate*, 29(2), 296–318.
- Wang, K., & Immergluck, D. (2019). Neighborhood affordability and housing market resilience: Evidence from the US national foreclosure recovery. *Journal of the American Planning Association*, 85(4), 544–563.

Key Words: Household Recovery, Foreclosure, Homeownership, Residential Mobility

EVOLUTION OF HOUSING FINANCIALIZATION IN BRAZIL AND MEXICO

Abstract ID: 1116

Individual Paper Submission

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After defaulting on their foreign-debt obligations in the 1980s, several Latin American countries had to restructure their economies to boost market-led growth. Some ensuing housing reforms promoted mortgage expansion and mass housing production. Mexico was among the first countries to follow this logic and in a particularly aggressive manner. Credit liberalization allowed a handful of real estate firms in the country to undergo massive expansions in their operations in the early 2000s by building lower-middle-income housing at an accelerated rate while making use of pension and private equity funds. Brazil eventually appropriated certain aspects of the Mexican housing model, but not others. In the late 2000s, Brazil began providing deep subsidies to low-income households to connect the private supply of housing with a publicly subsidized demand. This paper discusses, challenges, and expands beyond prior analyses of these processes by contrasting their housing finance models and by examining the more recent (2010s) evolution and normative shifts of their housing and urban development policy agendas. Despite the policy transfer between both contexts, this south-south comparative analysis highlights the fluctuating and unstable nature of financialization processes given the diverse inclination of national governments to manage, promote or restrict them and in turn contain or accentuate capitalist crises and their implications.

This comparative analysis relies on an extensive review of the existing and relevant literature and on both primary and secondary data. Field research and semi-structured interviews with public entities, private developers, and civic organizations were carried out in two Mexican case studies (Tijuana, Baja California and Huehuetoca, Estado de Mexico), and financial data, public accounts, and policy and industry reports were analyzed for both countries.

Citations

- Fernandez, R. and Aalbers, M. B. (2020) Housing Financialization in the Global South: In Search of a Comparative Framework, *Housing Policy Debate*, 30(4): 680-701, DOI:10.1080/10511482.2019.1681491
- Aalbers, M. B., Rolnik, R. and Krijnen, M. (2020). The Financialization of Housing in Capitalism's Peripheries. *Housing Policy Debate* 30(4): 481-485.
- Reyes, A. (2022). Evolution of Housing Finance Policy and Development Agendas in Mexico. *Planning Perspectives*. DOI:10.1080/02665433.2022.2037013

Key Words: Financialization, Brazil, Mexico, Housing Policy

USING STAKEHOLDER INPUT TO PLAN FOR THE DEMOLITION OF BLIGHTED, VACANT PROPERTIES IN FLINT, MICHIGAN

Abstract ID: 1139

Individual Paper Submission

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In legacy cities, public entities like land banks often select properties to demolish based on residents' complaints. However, a complaint-driven approach is unlikely to be equitable or to achieve broad community goals when the number of blighted, vacant properties vastly exceed a community's demolition capacity. While some cities target demolitions based on market potential or neighborhood conditions like high foreclosure rates, few have comprehensive strategies for planning for demolitions that extend beyond specific, target neighborhoods or the requirements of a current funding source.

While there are practitioner-oriented resources that describe how communities set demolition priorities (e.g., Mallach, 2017a), these materials tend to be descriptive, not inferential or evaluative. Perhaps more importantly, no materials outline a resident-driven or resident-informed comprehensive demolition planning process, since to the author's knowledge, there has been no such planning process undertaken in a U.S. city.

Academic studies of demolition activity are also lacking. Existing studies are often retrospective, focusing on topics like where demolitions occurred, the effects of demolitions on crime, what to do with vacant land post-demolition, and the historic outcomes of demolitions conducted as part of urban renewal. An exception is Morckel (2017) who described the use of suitability analysis to proactively assign every vacant property in a city a demolition score, with higher scores indicating priority for demolition. However, Morckel's work was hypothetical and did not include public input.

Therefore, to improve upon existing literature, this paper presents an example of using public input to conduct "demolition planning" in a legacy city. The author defines "demolition planning" as using a systematic process, guided by resident input and grounded in urban planning principles, to plan for the demolition of large numbers of vacant properties to achieve a desired outcome. The paper examines the results of a survey—created and administered by the Genesee County Land Bank Authority in Flint, Michigan—about the factors that stakeholders believed should be prioritized by the land bank when determining which properties to demolish. 399 Flint stakeholders rated and ranked seven potential factors, and their responses were analyzed using ANOVA models to test for statistically significant differences in means rankings, as well as geographical differences in responses by city ward.

Whether a blighted property was located next to an occupied home was by far the most important consideration to Flint residents when deciding what to demolish. The next most important considerations, of equal statistical importance, were burned-out homes, blighted properties near open schools, and blighted properties in highly occupied neighborhoods. The three remaining factors, which were of lesser importance than the prior factors, but of equal statistical importance to one another, were blighted properties located on major corridors, properties with fire insurance to cover part of the demolition costs, and blighted properties near parks.

The paper then covers how the land bank used these survey results to create a demolition selection model—that is, an algorithm that assigns vacant, blighted properties a demolition score, with higher scores indicating priority. In general, the more important a factor was to residents, the more heavily it was weighted in the model. In terms of geographic differences, a few wards differed slightly in their priorities, suggesting that some areas of the city could have separate demolition prioritization models.

The paper further considers how other communities can improve upon Flint's surveying and model-building efforts, and includes a more general discussion of the challenges of demolition planning that is applicable beyond Flint. Given that no prior study has examined what residents (anywhere) want to see demolished and why, our findings should be of broad interest, especially to researchers and policy makers working in legacy cities.

Citations

- Hackworth, J. (2016). Demolition as urban policy in the American Rust Belt. *Environment and Planning A*, 48(11), 2201-2222. doi: 10.1177/0308518X16654914
- Han, H-S. (2014). The impact of abandoned properties on nearby property values. *Housing Policy Debate*, 24(2), 311-334. doi:10.1080/10511482.2013.832350
- Highsmith, A. R. (2015). *Demolition means progress: Flint, Michigan, and the fate of the American metropolis*. The University of Chicago Press.
- Mallach, A. (2017). Tackling the challenge of blight in Baltimore: An evaluation of Baltimore's vacants to value program. Center for Community Progress. Retrieved March 22, 2022, from <https://communityprogress.org/publications/>
- Morckel, V. (2017). Using suitability analysis to prioritize demolitions in a legacy city. *Urban Geography*, 38(1), 90-111. doi: 10.1080/02723638.2016.1147756.

Key Words: legacy cities, shrinking cities, blight, vacancy, planning process

A CRITICAL JUNCTURE? CMHC'S ROLE IN CANADIAN SUBURBAN COMMUNITY PLANNING 1944-60

Abstract ID: 1140

Individual Paper Submission

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It is widely acknowledged that Canada is now a "suburban nation", but how did it make the transition from urban to suburban so quickly after World War II?

The Central Mortgage and Housing Corporation (CMHC; renamed Canada MHC in 1979) was established as a federal Crown agency to implement national housing objectives in the post-war recovery period. However, CMHC was also tasked with implementing the federal government's national community planning objectives. The agency facilitated a major change in Canadian urban structure, even though urban planning and development are within provincial and municipal jurisdictions.

This paper is based upon archival research conducted in the CMHC fonds at Library and Archives Canada and CMHC's National Housing Information Centre. A preliminary investigation indicates the suburbanization of Canada was a path-dependent outcome arising from a critical juncture in the post-war reconstruction period - with CMHC as the main institution responsible for the outcome. CMHC reinforced the suburban trajectory by publishing planning handbooks, funding a national advocacy network, establishing national standards, seeding a Canadian planning schools, importing planners and designing and developing lands owned by the federal government.

This paper informs current national debates on areas such as urban policy and infrastructure, where the federal government has spending power and resources, but the constitutional authority largely rests at the provincial and municipal levels. This paper will provide important insights about how a federal agency implemented national programs in two areas with almost complete provincial and municipal responsibility: improving community planning and expanding suburban development.

The project uses planning history research methods that have been developed, tested and adjusted in previous investigations of Canadian community planning and suburban development. The historical-institutional analysis will be guided by the latest theories on path dependency in public agencies, to determine whether the 1945-1955 decade was a critical juncture in Canadian urban policy, with CMHC as a key actor in the transformation to a suburban nation.

In Historical-Institutionalism terms, periods of major institutional intervention are identified as "critical junctures", when existing structures are not solving patterns such as a housing crisis, and change is less constrained than in the periods of path dependence that precede and follow them. We will consider whether the 1945-55 decade was a critical juncture in Canadian urbanism, when some early decisions (mandatory community planning; facilitating mortgages but avoiding mortgage interest deductibility) may have set Canada on a suburban path substantially different than the USA or UK.

Citations

- Sorensen, A. (2015). Taking path dependence seriously: an historical institutionalist research agenda in planning history. *Planning Perspectives*, 30, 17–38.
- Capoccia, G. (2016). Critical Junctures, in Fioretos, O., Falleti, T., & Sheingate, A. (eds.) *The Oxford Handbook of Historical Institutionalism*, Oxford University Press, 89.
- Gordon, D.L.A. (2019) Humphrey Carver and the federal government's post-war revival of Canadian community planning, *Urban History Review*, 46(2), 71-84.
- Carver, H. (1975). *Compassionate Landscape*. Toronto ON: University of Toronto Press.
- Harris, Richard. (2004). *Creeping Conformity: How Canada Became Suburban, 1900-1960*. Toronto: University of Toronto Press.

Key Words: suburbs, community planning, reconstruction, Canada

EXPLORING WITHIN-METROPOLITAN AFFORDABLE HOUSING MISMATCH IN THE UNITED STATES

Abstract ID: 1155

Individual Paper Submission

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Despite various indicators to measure the shortage of affordable housing for low-income households, few studies have examined the potential geographical mismatch between affordable housing supply and lower-income demand within a metropolitan area. Most studies have focused on estimating regional affordability gaps, simply assuming that if there is a sufficient supply of rental units affordable to lower-income households, regardless of where those units are located within a local housing market, those units would be easily occupied by lower-income households. However, with long-standing racial and income segregation, job-worker imbalance, and market barriers that hinder the movement of certain subpopulations, the assumption may overlook potential within-metropolitan imbalances between low-income renters and rental units they can afford.

To fill the research gap, we explore the presence of neighborhood-level affordable housing imbalances, either the gaps or surpluses between the number of a certain low-income renter group and rental housing units affordable (and available) to them. Specifically, this study examines the following questions: (1) to what extent does the neighborhood-level affordable housing imbalance exist in the United States? (2) to what extent do the degrees of the rental affordability imbalances, measured by dissimilarity indexes calculated based on the number of low-income renter households and rental units affordable to them at a census tract level, vary across metropolitan areas and different low-income groups? and (3) under what metropolitan-level conditions are the imbalances likely to be severe?

We analyze the Comprehensive Housing Affordability Strategy (CHAS) data to measure tract-level affordable housing gaps and surpluses based on the largest 100 core-based metropolitan areas (CBSAs). On the demand side, we measured the numbers of three income groups at a census tract level: (1) extremely low-income (ELI) renters, (2) very low-income (VLI) renters, and (3) low-income (LI) renters. On the supply side, we categorized rental units into several groups and measured the numbers of those units at a census tract: (1) affordable (and available) rentals for ELI households, (2) affordable (and available) rentals for VLI households, and (3) affordable (and available) rentals for LI households. Based on the estimated numbers, we explore descriptive patterns of the estimated neighborhood-level affordable housing gaps and surpluses across the CBSAs. Then, we calculate dissimilarity index values as a proxy reflecting the overall degree of neighborhood-level housing affordability imbalances within each metropolitan area.

Then, we explore the CBSA-level conditions under which such imbalances are likely to be severe by estimating multivariate models.

We confirm that ELI households are, on average, exposed to affordable (and available) rental gaps. Especially, lower-income renter households face constrained housing and neighborhood options not just due to the low quantity of rental units affordable to them but also the fact that many of those units are already occupied by higher-income groups. However, we also find a large share of neighborhoods with remaining rental units affordable (and available) to low-income renter households, especially VLI and LI households. Across income groups, the dissimilarity index values have varying relationships with CBSA-level conditions. In the case of ELI and VLI households, the degree of racial segregation between White and African American households relates to the affordable housing imbalances. In the case of VLI and LI households, they are associated with the degree of low-wage job-worker imbalances and the proportion of rental units affordable to each group in suburban neighborhoods. In the case of LI households, we discover evidence supporting that the affordable housing imbalances are associated with the degree of residential land use regulatory restrictiveness. These results show that different approaches should be considered to expand affordable housing options for different income groups.

Citations

- Airgood-Obrycki, W., & Molinsky, J. (2019). Estimating the Gap in Affordable and Available Rental Units for Families. <https://www.jchs.harvard.edu/research-areas/working-papers/estimating-gap-affordable-and-available-rental-units-families>
- Bogdon, A. S., & Can, A. (1997). Indicators of local housing affordability: Comparative and spatial approaches. *Real Estate Economics*, 25(1), 43–80. <https://doi.org/10.1111/1540-6229.00707>
- Myers, D., & Park, J. (2019). A Constant Quartile Mismatch Indicator of Changing Rental Affordability in U.S. Metropolitan Areas, 2000 to 2016. *Cityscape*, 21(1), 163–200. <https://www.jstor.org/stable/26608016>
- Stoker, P., & Ewing, R. (2014). Job–Worker Balance and Income Match in the United States. *Housing Policy Debate*, 24(2), 485–497. <https://doi.org/10.1080/10511482.2013.852604>
- Stearns, L. B., & Logan, J. R. (1986). The Racial Structuring of the Housing Market and Segregation in Suburban Areas. *Social Forces*, 65(1), 28–42. <https://doi.org/10.2307/2578934>

Key Words: affordable housing, low-income renter households, jobs-housing balance, racial segregation, Comprehensive Housing Affordability Strategy

CLASS MONOPOLY RENT AND THE URBAN SUSTAINABILITY FIX IN SEATTLE'S SOUTH LAKE UNION DISTRICT

Abstract ID: 1171

Individual Paper Submission

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The paper contributes to the recent renaissance in Marxian land rent theory by examining the dynamics of rent in the context of contemporary urban sustainability policies and practices. It specifically examines the ways in which landowners, developers, and the local state work together to pursue class monopoly rent through a variety of policies and practices normally treated as separate, such as tax-increment financing, discursive-branding, urban growth boundaries, business improvement districts, and transfer of development rights. We implicate each of these practices as fundamentally linked insofar as they function as strategies for myriad invested actors in collaboratively pursuing class monopoly rent. In the process, we present a heuristic tool, what we call the “rent matrix,” to conceptualize how these policies converge to the benefit of myriad rent seekers in the context of Seattle’s rapidly redeveloping South Lake Union District. The study peels back the discursive and ostensibly progressive façade of urban sustainability to reveal a collaborative network of landowners, developers, and state actors whose goal is to increase rents. The multi-scalar dynamic of class monopoly rent is revealed and highlighted as a constitutive feature of an urban sustainability fix embedded within wider processes of uneven and exploitative neoliberal urbanization.

Citations

- Anderson MB (2019) Class monopoly rent and the redevelopment of Portland's Pearl District. *Antipode*, 51(4): 1035-1056.
- Anderson MB, Hansen EC, Arms Z, and Tsikalas SG (2021) Class monopoly rent, property relations, and the homeless crisis in Portland, OR. *Urban Geography*, DOI: 10.1080/02723638.2020.1847937
- Butcher S (2020) Appropriating rent from greenfield affordable housing: developer practices in Johannesburg. *Environment and Planning A*, 52(2): 337-61.

- Ward C and Aalbers MB (2016) The 'shitty rent business': What's the point of land rent theory? *Urban Studies*, 53: 1760–1783.
- While A, Jonas A and Gibbs D (2004) The environment and the entrepreneurial city: searching for the urban 'sustainability fix' in Manchester and Leeds. *International Journal of Urban and Regional Research*, 28(3): 549-69.

Key Words: Gentrification, Political economy, Marxist, Growth machine, Property

NEIGHBORHOOD LOCATION PATTERNS OF THE HOMELESS HOUSEHOLDS ASSISTED WITH HOUSING CHOICE VOUCHERS

Abstract ID: 1177

Individual Paper Submission

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The Housing Choice Voucher Program was created to provide low-income families with affordable, accessible housing and to increase access to low-poverty, high-opportunity neighborhoods (McClure, 2010). Location outcomes of assisted households have been of interest to many scholars as a wealth of research has demonstrated that neighborhood environments greatly influence individual outcomes (Briggs, 1997; Ellen & Turner, 1997; Jencks & Mayer, 1990). What has not been previously examined in scholarship is the location outcomes of previously homeless low-income households who received federal rental assistance. Using 2017 HUD household-level data, this study investigated the extent to which homeless households given vouchers were able to move to high-opportunity neighborhoods compared to other renter households and other households given vouchers.

Households that entered the housing assistance program from homelessness are significantly less likely to reside in high or very high opportunity tracts compared to previously housed households. While the HCV program does a better job locating households in high or very high opportunity tracts than project-based programs, previously homeless HCV households are more likely to reside in very low opportunity tracts and less likely to reside in high or very high opportunity tracts compared to previously housed HCV households. Further, although minority households are overrepresented in very low and low opportunity tracts than white households, homeless households account for a larger share in very low opportunity tracts than previously housed households regardless of race and ethnicity. In addition, this study found that having children in the household and being a minority household decreases the odds of locating in high opportunity tracts, while being elderly, disabled, and locating in suburban tracts increases the odds of locating in high opportunity tracts.

Citations

- McClure, K. (2010). The Prospects for Guiding Housing Choice Voucher Households to High-Opportunity Neighborhoods. *Cityscape*, 12(3), 101-122.
- Briggs, X. (1997). Moving Up versus Moving Out: Neighborhood Effects in Housing Mobility Programs. *Housing Policy Debate*, 8(1), 195-234.
- Ellen, I. G., & Turner, M. A. (1997). Does Neighborhood Matter? Assessing Recent Evidence. *Housing Policy Debate*, 8(4), 833-866.
- Jencks, C., & Mayer, S. E. (1990). The Social Consequences of Growing Up in a Poor Neighborhood. In L. E. Lynn, Jr., & M. G. McGeary (Eds.), *Innver-City Poverty in the United States* (pp. 111-186). Washington DC: National Academy Press.

Key Words: Housing Choice Voucher Program, Homeless Households, Location Outcomes, High Opportunity Neighborhoods

UNDERSTANDING PUBLIC PERCEPTIONS OF AFFORDABLE HOUSING THROUGH PROMPTED AND UNPROMPTED WRITINGS

Abstract ID: 1178

Individual Paper Submission

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There is a long-standing deficit of affordable housing in the United States and, even though there is a seemingly near-universal consensus that more affordable housing units are needed, actually getting those units constructed turns out to be a difficult and complicated undertaking. One of the major roadblocks for proposed developments is public opposition (Scally and Tighe 2015). While current affordable housing projects are often indistinguishable—if not better designed and more strictly regulated—than market-rate housing, community complaints are nevertheless frequently targeted at the built design. Scholars have hypothesized that complaints around affordable housing being unattractive or poorly maintained are a more socially acceptable way to voice fears rooted in issues such as race (Nguyen, Basolo, and Tiwari 2013). Furthermore, the negative comments that dominate crucial planning meetings are mostly generated by a small, non-representational portion of the community (McNee and Pojani 2021). Past research has focused on understanding the broader public's attitudes on affordable housing through various survey methods (Tighe 2010). These surveys often present a highly specific definition for the term “affordable housing” (or avoid the term altogether) and ask closed-ended questions. Overall, the results from both industry and research surveys, which are framed around broad awareness statements and hypothetical support scenarios, report strong support but, even with an anonymous data collection method, findings can be skewed by social desirability bias because supporting affordable housing is seen as the more morally or socially acceptable option. Recent research has emphasized the importance of the emotional reactions to urban planning issues (Skrede and Andersen 2022), which cannot be determined from closed-end questions alone that probe only recognition, not recall, on the topic of affordable housing.

In an effort to better capture the emotional mindset of real communities, we deployed a nation-wide online survey (n = 540) consisting of closed- and open-ended questions that focused on public perceptions and personal exposure to affordable housing projects in addition to acceptance. This survey was designed to answer the main research question: What is the public's baseline understanding of affordable housing? And specifically, what is the public's mental imagery involving people, policies, and buildings associated with affordable housing? Our analysis approach combines statistical analysis of the quantitative survey questions with hand coding and natural language processing (NLP), including closed-vocab analysis, open-vocab analysis, and topic modeling of the qualitative free response answers. By triangulating among these three analysis approaches, a more nuanced understanding can be obtained. For example, while the closed-ended responses show an awareness of a broad range of affordable housing building typologies, in participants' free-responses, the typologies of single-family homes and apartments dominate. Participants' free-responses highlight that their mental images of affordable housing buildings have not yet caught up with current-day reality (i.e., participants often think of stark, modernist “projects” rather than examples of more recent affordable housing projects). Furthermore, there seems to be a dichotomy between how participants describe their current existing picture of affordable housing (mainly negative), and how they describe their ideal future picture of affordable housing (mainly positive).

To compare with these explicitly prompted opinions in a survey-setting, we will scrape social media data to generate a large text dataset and run NLP analyses to capture unprompted opinions. In addition to furthering knowledge about public perceptions of affordable housing and how these relate to demographics, exposure, and self-reported acceptance, this research highlights the potential of informal text data and emerging methods like NLP to efficiently probe the broader community often not present at planning meetings.

Citations

- McNee, Georgina, and Dorina Pojani. 2021. “NIMBYism as a Barrier to Housing and Social Mix in San Francisco.” *Journal of Housing and the Built Environment*, May, 1–21. <https://doi.org/10.1007/s10901-021-09857-6>.
- Nguyen, Mai Thi, Victoria Basolo, and Abhishek Tiwari. 2013. “Opposition to Affordable Housing in the USA: Debate Framing and the Responses of Local Actors.” *Housing, Theory and Society* 30 (2): 107–30. <https://doi.org/10.1080/14036096.2012.667833>.
- Tighe, J. Rosie. 2010. “Public Opinion and Affordable Housing: A Review of the Literature.” *Journal of Planning Literature* 25 (1): 3–17. <https://doi.org/10.1177/0885412210379974>.
- Scally, Corianne Payton, and J. Rosie Tighe. 2015. “Democracy in Action?: NIMBY as Impediment to Equitable Affordable Housing Siting.” *Housing Studies* 30 (5): 749–69. <https://doi.org/10.1080/02673037.2015.1013093>.
- Skrede, Joar, and Bengt Andersen. 2022. “The Emotional Element of Urban Densification.” *Local Environment* 27 (2): 251–63. <https://doi.org/10.1080/13549839.2022.2034769>.

Key Words: Affordable housing, Public perceptions, Online survey, Social media, Natural Language Processing

EXPLORING THE SPECTRUM OF SEGREGATED COMMUNITIES IN CHINA'S MEGACITIES WITH LBS DATA: THE CASE OF YANGPU DISTRICT, SHANGHAI

Abstract ID: 1208

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The socio-economic transformation in China has made many megacities home for millions of migrants, generating different social groups from less skilled labors to highly educated elites. Land resources and environmental constraints have led to soaring housing prices, and a layered structure is emerging in the housing market of China's mega-cities, leading to various kinds of segregated communities where housing owners may vary from others in occupation, income, family composition, etc. Due to data availability issues, extant research on residential segregation mainly rely on survey of a particular case, and a multi-case comparative study to exploring the spectrum of segregated communities is still absent. The filter theory believes residential segregation is a dual movement that high-income groups and low-income groups filtering in opposite directions. In pursuit of higher living standards and status symbols, people with higher-income gradually move away from their original communities and move to higher-quality communities. The left-behind housings were then keep filtering to the next level of the market with lower-income groups, until they were bought by the lowest level of the socio-economic groups. This residential filtering process is accompanied by the dislocation and relocation of both high-income with low-income classes, and would usually lead to spatially segregated communities. Therefore, residential segregation is a dynamic and evolving process, and a multi-case comparative study to explore the typology of residential segregation is possible, when ideal data is available. Taking Yangpu District in Shanghai as an example, the most common residential areas can be divided into four types, including shanty towns, workers' new villages, ordinary commercial residences, and high-end residences, and ask the questions: 1) Is there a spectrum of segregated communities represented by socio-economic status of their residents? 2) Is there significant disparities on where they commute in business days and go on weekends? Using mixed source of location based service (LBS) data and sample survey data, this research endeavors to :1) disclose the crowd portraits of the residents living in these different communities, including age, occupation, education level, income level, consumption level, property portfolio, life cycle stage, job and industry, etc. and other socio-economic attributes; 2) reveal the spatial pattern of the daily commuting and weekend leisure activities among residents living in different types of residential products in 8 time periods on a weekday day, a weekend day and a holiday day. Preliminary results reveal that the socio-economic status of the residents in each residential community type in Yangpu District is significantly different from one another and highly correlated with the value of the housing in the communities, suggesting that a spectrum of residential segregation in presence. In addition, there are also some sub-groups in the new workers' village and normal new commercial residence. However, in terms of leisure activities, there is spatial coexistence of residents from these segregated communities in different periods, demonstrating that residential segregation does not necessarily lead to segregated leisure space. Among the four focal types of communities, the workers' new village has demonstrated a typical transitional type with mixed socio-economic status of the residents and their travel behavior. Theoretical explanation may include: 1) the soaring housing price and increasing housing purchasing costs have undermined the filtering process of the housing market, leading to juxtaposition of different social groups in the same residential areas, represented by the new workers' village and normal new commercial residence; 2) the anonymity of the mass media, especially self-media dissolves group boundaries and builds a powerful virtual social network, and is automatically mirrored in real space. Finally, this research offers discussion on policy implications for the governance of megacities with similar contexts.

Citations

- Zhang Yanji, Wang Jiejing, Kan Changcheng. Temporal variation in activity-space-based segregation: A case study of Beijing using location-based service data[J]. *Journal of Transport Geography*, 2022, 98.
- Pengyu Zhu. Residential segregation and employment outcomes of rural migrant workers in China[J]. *Urban Studies*, 2016, 53(8).
- Pu Hao. The effects of residential patterns and Chengzhongcun housing on segregation in Shenzhen[J]. *Eurasian Geography and Economics*, 2015, 56(3).
- Zhu Pengyu, Zhao Songnian, Jiang Yanpeng. Residential segregation, built environment and commuting outcomes: Experience from contemporary China[J]. *Transport Policy*, 2022, 116.

Key Words: residential segregation, location-based service data, Shanghai

THE HOUSING AFFORDABILITY CRISIS: PROPERTY TAX AS PROBLEM-SOLVER OR TROUBLEMAKER?

Abstract ID: 1220

Individual Paper Submission

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Since the housing affordability crisis has been breaking the major cities worldwide, the tax burden is also seriously overloaded. Thus, governments have sought solutions to relieve homeowners' cost burden. The property tax limit is one of the strategies that has been widely used in the U.S. to respond to the real estate boom and cap the tax payable. California Proposition 13, for instance, is an iconic case that restricts the maximum combined ad valorem taxes to 1% of the full cash value of such property and assessed values to 2% or the inflation rate. The initiatives have various unintended effects and consequences. Most extant studies focus on the impacts of property tax limits on local government fiscal conditions and residential mobility, such as the alternative revenue resources, public service, and the lock-in effect.

Conversely, Asian governments tend to raise property taxes in response to affordability issues since in many Asian countries, particularly those influenced by Chinese culture, the traditional mindset of "along with real estate comes wealth" is highly valued, which urges people to own, invest in, and hoard real properties. For example, 61.15% of homeowners in Taipei have more than two properties, and Taipei's vacancy rate reached 7.41% in 2019. Hence, Taipei initiated a "hoarding tax", which establishes progressive home tax rates for people who own more than one home, to curb excessive investment and speculative demand and try to cool off housing prices.

Starting from Tiebout (1956) and Oates (1969), we acknowledged that property tax is highly associated with housing value. Hence, assuming there is no change in public service and supply elasticity, increasing property taxes should reduce housing value; in contrast, capping property taxes would raise prices. However, the impacts of property tax on housing affordability have not received much academic attention. Thus, this research asks (1) how are property tax limits and hoarding tax associated with housing prices, and (2) how can property taxes be progressive to housing affordability? The paper uses the most recent property tax limit passage in New York and Taipei's hoarding tax as examples for an external validation comparative study.

To answer the research questions, both New York and Taipei's cases are conducted through interrupted time series (ITS) and Difference-in-Differences (DID) modeled with ordinary least square (OLS). While New York's levy limit took effect in 2013, the ITS model assesses the announcement and implementation effects, and the DID analysis compares Westchester, NY, with Stamford, CT, which does not have an actual tax cap in place, to identify whether the assessment limit affects housing prices. The data is collected from 2011 to 2015. Similarly, Taipei's data is collected from 2012 to 2016 to pinpoint the effects of the passage of the hoarding tax in 2014. The effect will be compared with other municipalities in Taiwan that did not have additional tax increments. Following the quantitative studies of two cities, we further probe into the rationale of property tax limits and hoarding tax through semi-structured interviews and surveys and expect to answer whether the property tax is a problem-solver or troublemaker in housing affordability.

Citations

- Oates, Wallace E. 1969. "The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis." *Journal of Political Economy* 77 (6): 957–71. <https://doi.org/10.1086/259584>.
- Edel, Matthew, and Elliott Sclar. 1974. "Taxes, Spending, and Property Values: Supply Adjustment in a Tiebout-Oates Model." *Journal of Political Economy* 82 (5): 941–54. <https://doi.org/10.1086/260248>.
- Haveman, Mark, and Terri A Sexton. 2008. *Property Tax Assessment Limits: Lessons from Thirty Years of Experiences*. Cambridge, MA: Lincoln Institute of Land Policy.
- Hoyt, William H., Paul A. Coomes, and Amelia M. Biehl. 2011. "Tax Limits and Housing Markets: Some Evidence at the State Level: Tax Limits and Housing Markets." *Real Estate Economics* 39 (1): 97–132. <https://doi.org/10.1111/j.1540-6229.2010.00288.x>.
- Hayashi, Andrew T. 2014. "Property Taxes and Their Limits: Evidence from New York City." *Stanford Law & Policy Review* 25 (1): 20.

Key Words: Housing Affordability, Property Tax Limit, Hoarding Tax, Tax Capitalization

STUDENTS' RESIDENTIAL MOBILITY DURING THE COVID-19 PANDEMIC: EVIDENCE FROM QUEBEC

Abstract ID: 1228

Individual Paper Submission

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Housing and the COVID-19 pandemic are inextricably linked. While the pandemic has forced many to spend increased time at home, it has also accentuated existing racialized and gendered housing inequalities, for example as those living in crowded conditions or unable to access stable housing are more susceptible to contracting the virus (Jones & Grigsby-Toussaint, 2020). Yet little is known about the specific housing challenges facing university students throughout the pandemic (Prada-Trigo et al., 2021), and students have garnered little attention in housing

policy before or during the pandemic, although student housing has recently begun to garner the attention of planning scholars (Revington et al., 2020). Many students face considerable housing precarity given their frequent moves, short-term stays in their city of study, and limited incomes, especially in Canada's most expensive housing markets and among international students (Sotomayor et al., 2022), which may make them more susceptible to pandemic-related disruptions to their housing situations. In response to the pandemic, universities across Canada transitioned to online teaching. As a result, students no longer needed to live near their university. For a variety of reasons including cost and perceived safety, many temporarily returned to the parental home. For students who did not return to their parents' home, their housing situation may have been disrupted, for instance if the departure of one or more roommates, or loss of income, left them unable to pay rent on their own. The need for better Wi-Fi and working space in their home environment may also have prompted students to move.

This research aims to uncover how the pandemic has affected students' residential moves in the province of Quebec, how these impacts differ between students, and the reasons for – and outcomes of – these moves. I draw on Quebec data from the pan-Canadian 2021 FLASH (Facilitating Learning and Awareness on Student Housing) survey of university students undertaken January-April 2021, during which time virtually all university programs in the province were delivered remotely. FLASH provides the most comprehensive dataset available on students' demographic and housing characteristics in Canada, and the 2021 edition includes questions related to the COVID-19 pandemic. I compare rates of pandemic-related moves by gender (male, female, or other gender identity), race (whether or not a student identifies as a "visible minority" according to Statistics Canada's appellation), and residency status (whether the student is a resident of Quebec, another Canadian province, or neither). I find that non-male respondents and non-Quebec residents were more likely to effectuate pandemic-related moves, and these tendencies persist when modeling moves as a function of other socio-demographic characteristics. While moving is not necessarily a negative outcome in itself, interpretation of model coefficients, subsequent analysis of movers' changes in housing conditions, and tabulations of movers' reasons for moving suggest many moves are associated with housing precarity. Indeed, the types of moves made differ between groups of students, with international students far less likely to return to the parental home, while students with a gender identity other than male or female as well as international students were more likely to experience a decrease in dwelling size as a result of their moves. This paper provides planners with insights into the housing vulnerability of the diverse but under-researched student population. Findings can assist municipal and campus planners, and urban policymakers more generally, in addressing students' evolving housing needs and offsetting the disparate impacts of the COVID-19 pandemic.

Citations

- Jones, A. & Grigsby-Toussaint, D.S. (2020). Housing stability and the residential context of the COVID-19 pandemic. *Cities & Health*. <https://doi.org/10.1080/23748834.2020.1785164>
- Prada-Trigo, J., Aravena-Solis, N. & Barra-Vieira, P. (2021). Temporary destudentification caused by COVID-19: Motivations and effects on social relations in a Chilean university city. *Population, Space and Place*. <https://doi.org/10.1002/psp.2529>
- Revington, N., Moos, M., Henry, J. & Haider, R. (2020). The urban dormitory: planning, studentification, and the construction of an off-campus student housing market. *International Planning Studies*, 25(2), 189-205.
- Sotomayor, L., Tarhan, D., Vieta, M., McCartney, S. & Mas, A. (2022). When students are house-poor: Urban universities, student marginality, and the hidden curriculum of student housing. *Cities*, 124, 103572.

Key Words: COVID-19 pandemic, housing, residential mobility, students

CONFRONTING PRECARIETY IN NORTH TEXAS: STORIES OF ADAPTATION AND INCREMENTAL HOUSING IN THE INFORMAL CITY

Abstract ID: 1232

Individual Paper Submission

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While informality is typically understood to be a problem of the Global South, emerging research is uncovering informal housing as a strategy utilized by low-income communities in the United States and beyond in the Global North. Because of the aforementioned presumption, informal housing in the United States has primarily been studied in rural, Mexican-descended communities along the Mexico-U.S. border (Durst & Ward, 2016). Yet, informality has increasingly been identified amongst low-income, peri-urban, unincorporated neighborhoods throughout the country (Durst, 2019). Because of underbounding or disregard on the part of municipalities, these communities often face multiple intersecting precarious conditions including low access to basic amenities and infrastructure, as well as poor quality housing. Lack of attention from planners likewise exposes these neighborhoods to multiple types of environmental injustices related to climate change, lack of infrastructure, and negative externalities (Durst, 2019).

Drawing from just sustainability literature that focuses on the relationship between environmental justice, equity, and sustainability (Agyeman & Evans, 2003), this study seeks to build on previous research on informality, migration, and precarity (Giusti & Estevez, 2011) outside the U.S.-Mexico border. This research will help understand the experiences of impoverished Latinx migrants who established and recently migrated to informal settlements on the fringe of US cities. The overarching research question is: How do the housing practices of low-income families of color in informal settlements, including Latinx migrants, enable solutions for sustainable and just communities in the United States? The supporting research questions are as follows: Q1) Who founded and currently lives in these communities? Q2) How does housing and infrastructure quality vary in informal settlements? Q3) How do residents improve housing and infrastructure quality over time? This study uses a mixed-method community-based assessment informed by spatial analysis of census data, satellite imagery, and ethnographic fieldwork to illuminate the characteristics of housing units, families, and water and sanitation infrastructure in three peri-urban informal communities in the Dallas Fort-Worth Metroplex. The fieldwork for this project will proceed in three phases. The first phase consists of attending community meetings to build trust with community members and community-based organizations. In the second phase, we will conduct walking architectural observations to produce a typology of informal housing. In phase three, surveys will be conducted with n = 278 households across the three communities to understand housing quality, water, and energy systems, and community infrastructure. To delve more deeply into community perspectives, oral stories produced through 15 interviews with community founders and residents help uncover community origin and self-help consolidation. This research will produce a more holistic and ethnographic understanding of the living conditions of informal communities from the perspective of residents while acknowledging building quality deficiencies as well as community assets. We expect the results to make the stories of these informal settlements visible and to redefine the role of informal housing consolidation as a strategy for supporting affordable housing, equity, and just sustainability in North Texas, which can serve as a reference for other US cities.

Citations

- Durst, N. J. (2019). Informal and ubiquitous: Colonias, premature subdivisions and other unplanned suburbs on America's urban fringe. *Urban Studies*, 56(4), 722–740. <https://doi.org/10.1177/0042098018767092>
- Durst, N. J., & Ward, P. M. (2016). Colonia Housing Conditions in Model Subdivisions: A Déjà Vu for Policy Makers. *Housing Policy Debate*, 26(2), 316–333. <https://doi.org/10.1080/10511482.2015.1068826>
- Giusti, C., & Estevez, L. (2011). Microlending for housing in the United States. A case study in colonias in Texas. *Habitat International*, 35(2), 307–315. <https://doi.org/10.1016/j.habitatint.2010.10.003>
- Agyeman, J., & Evans, T. (2003). Toward Just Sustainability in Urban Communities: Building Equity Rights with Sustainable Solutions. *The Annals of the American Academy of Political and Social Science*, 590, 35–53. <http://www.jstor.org/stable/3658544>

Key Words: Informal Settlements, Incremental Housing, Low-Income Residents of Color, Just Sustainability, North Texas

PERSISTENCE OF MORTGAGE LENDING BIAS IN THE UNITED STATES: 80 YEARS AFTER THE HOME OWNERS' LOAN CORPORATION SECURITY MAPS

Abstract ID: 1252

Individual Paper Submission

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Background:

The 1930s Home Owners' Loan Corporation (HOLC) "residential security maps," have become a popular visualization of Depression era mortgage lending risk patterns across American cities (Rothstein, 2017). Numerous housing policies have since been instituted, including the Home Mortgage Disclosure Act (HMDA), but mortgage lending bias persists. The degree to which detailed spatial patterns of bias have persisted or changed along with urban change is not well understood.

Objectives:

We compare historic HOLC grades and contemporary levels of mortgage lending bias using spatially detailed HMDA

data. We propose two research questions: 1) Do HOLC lending risk grades predict contemporary levels of mortgage lending bias by race, ethnicity, or property location? 2) Do HOLC lending risk grades predict contemporary racial and ethnic settlement patterns, regardless of historical settlement patterns and contemporary levels of mortgage lending bias?

Methodology:

The study area is defined as cities with HOLC boundaries and area descriptions within the boundaries of today's 100 most populated U.S. Metropolitan Statistical Areas (MSAs) in 2013. The digitized HOLC maps and "area descriptions" were sought for each of these cities from Mapping Inequality (Nelson et al., 2016); 86 HOLC cities in 48 current day MSAs are included in this study.

Historical mortgage lending risk was measured using HOLC neighborhood "risk" grades: (A) "best" (green), (B) "still desirable" (blue), (C) "declining" (yellow), and (D) "hazardous" (red). Current day racial, ethnic, and property location-based bias in mortgage lending patterns were estimated for each HOLC neighborhood using Home Mortgage Disclosure Act (HMDA) data from 2007–2013. Racial and ethnic bias measures are estimated as the odds ratio of denial of a mortgage application from a Black (or Hispanic) applicant compared to a White applicant using a logistic regression model-based, spatial filtering approach (Beyer et al., 2016). Location bias is estimated as the odds ratio of denial of a mortgage application for local properties (within the spatial filter), as compared to the MSA as a whole, adjusting for the applicant's sex and the loan to income ratio.

Historical racial and ethnic settlement patterns were derived from HOLC area descriptions. U.S. Census Bureau data were used to measure contemporary population distributions by race and ethnicity in HOLC boundaries.

Results:

Results suggest that historical mortgage lending risk categorizations and settlement patterns are associated with contemporary mortgage lending bias and racial and ethnic settlement patterns. The relationship between HOLC grades and HMDA mortgage lending bias measures vary in magnitude, but not direction, across U.S. regions. Results also reveal clear gradients, as expected, such that decreasing HOLC "risk" grades correspond to increasing proportions of Black and Hispanic residents today.

Implications:

The findings suggest that the inertia in geographic patterns of housing investment and racial segregation is strong and will require concerted efforts to be reversed. Those efforts must include data transparency, empirical evidence, complex and multiple policy solutions, and a recognition of the presence of bias in factors adjacent to mortgage lending, ultimately resulting in persistent disparities in home ownership and economic investment.

Citations

- Beyer, K., Zhou, Y., Matthews, K., Bemanian, A., Laud, P. W., & Nattinger, A. B. (2016). New spatially continuous indices of redlining and racial bias in mortgage lending: Links to survival after breast cancer diagnosis and implications for health disparities research. *Health & Place*, 40, 34–43.
- Nelson, R. K., Winling, L., Marciano, R., & Connolly, N. (2016). 'Mapping Inequality,' American Panorama. R. K. Nelson, and E. L. Ayers (Eds.), American Panorama. <https://dsl.richmond.edu/panorama/redlining>
- Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. Liveright.

Key Words: Mortgage lending bias, racial segregation, settlement patterns, redlining, housing discrimination

COMPARING THE IMPACTS OF HOUSING MARKET REGULATIONS ON HOUSING PRICES BEFORE AND AFTER THE COVID-19 PANDEMIC IN SEOUL, KOREA

Abstract ID: 1262

Individual Paper Submission

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Despite the COVID-19 pandemic, housing sales prices continue to rise in Korea. To stabilize the overheated housing market, the government implemented a variety of regulation policies before and after the pandemic. Demand control policies have been preferred such as property tax and loan-to-value and debt-to-income restrictions working in a

short period. However, it is necessary to investigate whether they are effective before and after the pandemic. In addition, the effects of the government's controls on housing prices could be varied in different submarkets or subregions.

This study intends to compare the effects of housing demand regulations on housing sales prices before and after the COVID-19 pandemic in Seoul, while considering market segmentation of both transaction price and subregion. In specific, this research examines whether the housing demand regulations have been working to lower apartment sales prices in the short period in Seoul; whether they have had an effect on decreasing short-term sales prices of houses more than 740 thousand dollars (900 million Korean won) that are subject to the regulations; and whether they have been effective to drop housing prices in all subregions of the Seoul metropolitan area, while showing some differences of the effect.

This study pays attention to the government's substantial regulations for stabilizing the housing market that have been enforced on December 17, 2019 and July 1, 2020 as the periods before and after the pandemic. Actual transaction data of apartments in Seoul which have been provided by the Ministry of Land, Infrastructure and Transport are used. In terms of the period of regulation effect, the policy effects from one to six months both before and after each regulation implementation are compared because the regulations are expected to work for a relative short period. The impacts of both before and after the pandemic are also compared in consideration of transaction prices and subregions. In terms of transaction price, the impacts of the regulations on houses with either lower or higher than 740 thousand dollars are compared as the latter are mainly subject to the regulations.

In order to present empirical results, both multi-level models and regression discontinuity designs are estimated mainly based on hedonic price theory. First, the multi-level hedonic pricing models are estimated to address the spatial autocorrelation problem inherent in housing price data. In addition, this study introduces the regression discontinuity designs to disentangle short-term policy effects. They are useful to analyze whether specific policy measure has an effect before (control group) and after (treatment group) its enforcement based on regression breakpoint. When regulatory policies have been repeatedly implemented in a short period of time as in Korea, it is difficult to apply either time series analysis or difference-in-differences method to unravel the effects of those policy measures.

It is expected based on the regression discontinuity designs that the impact before the pandemic would be significantly negative on the houses with both lower and higher than 740 thousand dollars. It implies that the housing demand regulations have effect on lowering housing prices in the short period, but the prices should rise after then. In addition, the magnitude of effect is expected to be greater in the houses higher than 740 thousand dollars. However, the effects of the regulations are expected to be insignificant after the pandemic. It is also expected that the housing demand regulations are effective in decreasing prices in the short run before the pandemic in all subregions in Seoul. The magnitude of effect is expected to be greater in the southeastern subregion including Gangnam. However, there would be no significant impact in all subregions after the pandemic.

Citations

- Cellini, S. R., Ferreira, F., & Rothstein, J. (2010). The value of school facility investments: Evidence from a dynamic regression discontinuity design. *The Quarterly Journal of Economics*, 125(1), 215-261.
- Grout, C. A., Jaeger, W. K., & Plantinga, A. J. (2011). Land-use regulations and property values in Portland, Oregon: A regression discontinuity design approach. *Regional Science and Urban Economics*, 41(2), 98-107.
- Hahn, J., Todd, P., & Van der Klaauw, W. (2001). Identification and estimation of treatment effects with a regression-discontinuity design. *Econometrica*, 69(1), 201-209.
- Lee, D. S., & Lemieux, T. (2014). Regression discontinuity designs in social sciences. *Regression Analysis and Causal Inference*, H. Best and C. Wolf (eds.), Sage.

Key Words: housing market regulation, housing price, multi-level model, regression discontinuity design, COVID-19 pandemic

REGULATING FOR OR AGAINST INFORMAL HOUSING? PLANNERS' PERSPECTIVES FROM AUSTRALIA

Abstract ID: 1265

Individual Paper Submission

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Informal housing options such as secondary dwellings are increasingly seen as a potential source of low-cost, affordable rental supply. Often prevented by restrictive residential zones, secondary dwellings, accessory dwelling units, or 'granny flats' have emerged as important sources of lower cost rental supply in high value housing markets,

and efforts to legalise and enable their production are becoming more widespread (Harris and Kinsella 2017, Chapple, Garcia et al. 2020, Gurran, Maalsen et al. 2020). This interest reflects rising concern about the availability of new and affordable housing supply, particularly in major cities where attempts to ‘densify’ suburban neighbourhoods while increasing rental accommodation has been a particular challenge (Mukhija 2014). More broadly, interest in secondary dwellings as a form of low-cost rental housing can be understood within the context of neoliberal policy settings including the retreat of the welfare state and an emphasis on ‘market solutions’ to policy problems. Within this context, not only are states reluctant to provide direct support for low-income earners through public housing or additional rental subsidy; they must also actively ‘roll back’ regulations seen to impede market activity (such as land use barriers to diverse housing types); and may also act to stimulate new market responses.

This paper examines state planning strategies in Australia which have sought to both remove restrictions preventing secondary dwellings in residential areas and encourage the establishment of a new market in secondary dwelling production. Our focus is the perspectives of local planners in the state of NSW, where state planning policy has sought to override restrictive local zoning controls to enable secondary dwellings as a source of lower cost rental supply since 2009. Through interviews with more than 25 local planners, we examine perspectives on (a) regulatory strategies for enabling or constraining secondary dwelling production; (b) trade-offs between housing quality, costs, and residential neighbourhood impacts; and (c) wider implications for affordable rental supply. We also examine the geographic spread of secondary dwelling production over a decade and review recent real estate listings to determine the nature and cost of such housing as a source of low-cost rental accommodation in the market.

Findings show that although secondary dwellings can potentially be an important source of lower cost rental supply in high value housing markets such as Sydney; local planners are concerned about the impact on amenities and dwelling quality produced. They also expressed concern about informally rented and/or illegally constructed secondary dwellings giving rise to a new, shadow rental market. Overall, the study sheds light on the conditions in which regulation can support or inhibit forms of secondary dwelling production, and the potential positive outcomes arising from more flexible approaches to residential zoning and development control. However, the study also highlights the limitations and risks associated with formalising secondary dwellings as a principal strategy for affordable rental supply within high value housing markets.

Citations

- Chapple, K., D. Garcia, E. Valchuis and J. Tucker (2020). "Reaching California's ADU Potential: Progress to Date and the Need for ADU Finance." Turner Center for Housing Innovation, UC Berkeley.
- Gurran, N., S. Maalsen and P. Shrestha (2020). "Is 'informal' housing an affordability solution for expensive cities? Evidence from Sydney, Australia." *International Journal of Housing Policy*: 1-24.
- Harris, R. and K. Kinsella (2017). "Secondary suites: A survey of evidence and municipal policy." *The Canadian Geographer/le géographe canadien* 61(4): 493-509.
- Mukhija, V. (2014). *Outlaw in-laws: Informal second units and the stealth reinvention of single-family housing*, MIT Press Cambridge, MA.

Key Words: secondary-dwellings, low-cost rentals, informality, housing

DOES POPULATION SIZE MATTER? ANALYZING MUNICIPALITIES THAT PERMIT INNOVATIVE AFFORDABLE HOUSING SOLUTIONS

Abstract ID: 1266

Individual Paper Submission

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Over the past several decades, much research has been published about local governments that have dealt with the NIMBY (Not in My Backyard) movement, especially in the context of multifamily housing. Some researchers argue that jurisdictional population size matters, as local governments of large municipalities are influenced by politically active constituencies and interest groups whereas local governments of small municipalities are influenced by local homeowners. Not much research has been undertaken on the difference of jurisdictional population size of local governments that have permitted innovative affordable housing solutions, i.e., Accessory Dwelling Units (ADUs), tiny homes, mobile homes, and Recreational Vehicle (RV) homes. The goal of this study is to analyze demographic, socioeconomic, housing, and regional variation among jurisdictions that permit ADUs, tiny, mobile, and recreational vehicle (RV) homes, differentiating by population size, i.e., (a) 100,000, (b) 50,000, (c) 25,000, and (d) 10,000 people. The study's data set is the National Longitudinal Land Use Survey (NLLUS), conducted by the Urban Institute in collaboration with Rolf Pendall in 2019 (Urban Institute, n.d.) and the American Community Survey (ACS) 2015-2019 (5-year averages), conducted by the U.S. Bureau of the Census (U.S. Bureau of the Census, n.d.a). I utilize descriptive statistics and t-tests. Preliminary results indicate that a higher proportion of large jurisdictions allows ADUs, mobile homes, tiny homes, and RV homes and that a lower proportion of small jurisdictions allows mobile homes, ADUs, and tiny and RV homes. Large jurisdictions that permit innovative affordable housing solutions are more racially and ethnically diverse, have lower median incomes and a lower homeownership rate, have a modest

proportion of multifamily housing, and are disproportionately in Census region West. Small jurisdictions that allow innovative affordable housing solutions are less racially and ethnically diverse, have a modest proportion of small households, have lower median incomes and a lower homeownership rate and lower home values and are disproportionately in Census regions Northeast and Midwest. The paper will conclude with policy recommendations.

Citations

- Karen Chapple, Audrey Lieberworth, Dori Ganetsos, Eric Valchuis, Andrew Kwang and Rachel Schten. (2020). ADUs in California: A Revolution in Progress. <https://www.aducalifornia.org/wp-content/uploads/2020/09/ADUs-in-California-5.pdf>
- Karen Chapple, Dori Ganetsos, and Emmanuel Lopez. (2021). Implementing the Backyard Revolution: Perspectives of California's ADU Owners. <https://www.aducalifornia.org/wp-content/uploads/2021/04/Implementing-the-Backyard-Revolution.pdf>
- Karen Chapple, Audrey Lieberworth, Eric Hernandez, Dori Ganetsos, Alejo Alvarada, and Josie Morgan. (2020). The ADU Scorecard: Grading ADU Ordinances in California. <https://www.aducalifornia.org/wp-content/uploads/2020/02/ADU-Scorecard-InterimReport-200201-1.pdf>
- Deirdre Pfeiffer (2019). Regulating ADUs in California: Local Approaches and Outcomes. <http://californialanduse.org/working-papers.html>
- Katrin Anacker and Christopher Niedt. (forthcoming) "Classifying Regulatory Approaches of Jurisdictions for Accessory Dwelling Units: The Case of Long Island." *Journal of Planning and Research*.

Key Words: Accessory Dwelling Units (ADUs), Tiny homes, Mobile homes, Recreational Vehicle homes, Affordable housing

THE PERSISTENT DESIGN-POLITICS OF RACE: POWER AND IDEOLOGY IN AMERICAN PUBLIC HOUSING REDEVELOPMENT

Abstract ID: 1284

Individual Paper Submission

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Subsidized housing for low-income residents is more than a matter of laws and policies; it entails controlling and redistributing space. Decisions about public housing reveal the confluence of ideological assumptions about social structure and environmental determinist beliefs about spatial order. This paper interrogates that socio-spatial convergence through the lens of 'design-politics,' applying this to the racialized redevelopment of public housing in the US since 1990.

My argument for a hyphenated design-politics is that if we uncover the political assumptions encoded into design, we will see that design itself – especially when the subject is public housing – is also wordlessly expressing views about such matters as community engagement, governance, policy, and finance. The forms and norms of this housing are products of complex cultural belief systems advancing moral judgments about the primacy of heteronormative family structures, supporting the aspirational aims of homeownership while demonizing renters, and naturalizing the operations of racial capitalism.

City leaders across the US constructed a great deal of the nation's public housing in the 1930s, 1940s and 1950s on a racially-segregated basis, rewarding and reinforcing an ideological ideal of the small white nuclear family – both explicitly through tenant selection criteria and implicitly through the sizing and design of apartments. Such ideological preferences – while largely unstated – continue to infuse 21st Century efforts by urban public housing authorities when they redevelop such projects. Once again, their design decisions combine space and race, linking the presumed panacea of 'mixed-income' redevelopment projects to an ongoing racial politics aimed at restoring mainstream ideological norms while resisting expressions of non-white identities.

Structurally and methodologically, this paper collects, repurposes and extends a set of analyses of public housing development and redevelopment that I conducted over the last 30 years in Boston, Atlanta, Chicago, New Orleans, San Francisco and New York City. Drawing on hundreds of interviews with public housing residents, designers, developers, lawyers, social service providers, community activists and housing officials, this larger body of work traced the evolving ways race and poverty have been managed by a variety of governance constellations in various American cities. These interviews are brought into dialogue with the drawings, representations and physical built realities of constructed places. I use this paper to connect my own work to others who study the redevelopment phase of these complex public housing sagas, introducing some of the mechanisms by which a design-politics lens can focus attention on the ways that racial and class hierarchies exemplified in public housing have been exacerbated through the silent power of architectural and urban placemaking.

In recent decades – accelerating recently – there has been belated but extensive attention given to ways the history

and current practices of architecture and planning are inextricably bound up with white supremacy and structural racism. Scholars and journalists excavate the motives of designers and their sponsors, and endeavor to ask ever more probing questions about how both monumental and quotidian aspects of the built environment are received by the diverse publics that encounter these ideologically-freighted products. In exploring public housing redevelopment through a design-politics lens, I emphasize five particular aspects:

1. The racialized design-politics of implementation: what changes along the way?
2. The racialized design-politics of welcome: who feels included?
3. The racialized design-politics of the unit mix: which households are wanted?
4. The racialized design-politics of curtailing vistas: whose views matter?
5. The racialized design-politics of incorporated exclusion: who feels resisted?

More optimistically, I conclude the paper by noting a few redevelopment efforts that have challenged this with more progressive forms of poverty governance, emphasizing not-for-profit organizations and valuing resident voices.

Citations

- Chaskin, Robert J. and Mark L. Joseph. *Integrating the Inner City: The Promise and Perils of Mixed- Income Public Transformation*. Chicago: University of Chicago Press, 2015.
- Fennell, Catherine. *Last Project Standing: Civics and Sympathy in Post-Welfare Chicago*. Minneapolis: University of Minneapolis Press, 2015.
- Rodriguez, Akira Drake. *Diverging Space for Deviants: The Politics of Atlanta's Public Housing*. Athens, GA: University of Georgia Press, 2021.
- Vale, Lawrence J. *After the Projects: Public Housing Redevelopment & the Governance of the Poorest Americans*. New York: Oxford University Press, 2019.
- Vale, Lawrence J. *Purging the Poorest: Public Housing and the Design Politics of Twice-Cleared Communities*. Chicago: University of Chicago Press, 2013.

Key Words: Public housing, Design-politics, Race, Redevelopment, Mixed-income housing

RACE, SPACE AND TAKE-UP: EXPLAINING HOUSING VOUCHER LEASE-UP RATES

Abstract ID: 1299

Individual Paper Submission

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The housing choice voucher program provides assistance each year to approximately 2.3 million low-income households (Center for Budget and Policy Priorities 2021). Unlike most other federal rental assistance programs, the voucher subsidy is not tied to specific housing units; rather voucher holders use the subsidy to help defray the cost of renting homes on the private market. Research shows that tenant-based rental subsidies reduce the rent burdens of low-income households, allow them to live in less crowded homes, help them to avoid homelessness, and improve children's performance in school (Mills et al., 2006; Schwartz et al, 2019).

Yet many voucher recipients fail to find suitable units and willing landlords. The latest study found that only 70 percent of voucher recipients successfully leased up with their vouchers. But the study is now 20 years old and only analyzed the outcomes of 2,609 voucher recipients across 48 housing authorities (Finkel and Buron, 2001). We use administrative data on voucher issuances to estimate voucher lease-up rates and search times for about 100,000 voucher recipients each year in over 400 urban housing authorities for the years 2015 through 2019. These new data allow us to analyze the variation across markets for a more recent period, and for a much broader set of housing authorities.

Even after controlling for market conditions and a host of individual factors, we show that race matters in this larger sample. Preliminary findings suggest that Black voucher recipients are significantly less likely to lease-up, and when they do, they take 12 days longer on average to do so than white recipients in the same metropolitan area. One reason for these longer search times and lower lease-up rates may be that Black voucher recipients are less able to lease in place.

Moreover, we find evidence that initial neighborhood location matters too, something not generally considered in the

literature on take-up. Specifically, voucher recipients are less likely to lease up and take longer to do so when they start in neighborhoods with older housing stocks, perhaps reflecting lower quality homes that may not pass inspections. Voucher holders initially living in neighborhoods with lower vacancy rates, smaller baseline voucher population shares, and larger Black population shares are less likely to lease-up and take longer to rent homes when they do (even after controlling for individual race). We suspect that the racial composition of the neighborhood may be picking up unobserved differences in the quality of housing, given longstanding disinvestment in communities of color and Black neighborhoods in particular, which make it more difficult for households to lease in place or find nearby homes that meet HUD's housing quality standards.

The housing choice voucher program is racially neutral on its face; there is nothing in its rules that treats one group differently from another. But our results suggest that race and space shape outcomes, and different racial and ethnic groups have divergent experiences in navigating the program, due perhaps to discriminatory barriers as well as deep-seated structural inequality. Future research should probe these differences, and housing authorities who administer voucher programs should scrutinize their data and consider adopting programmatic reforms, such as source of income discrimination laws and Small Area Fair Market rents, to address barriers to participation. Our results also provide suggestive evidence that such reforms can make a difference.

Citations

- Finkel, Meryl, and Larry Buron. 2001. Study on Section 8 Voucher Success Rates: Volume I: Quantitative Study of Success Rates in Metropolitan Areas. Prepared for the U.S. Department of Housing and Urban Development.
- Cunningham, M., M. Galvez, C. L. Aranda, R. Santos, D. Wissoker, A. Oneto, R. Pittingolo, and J. Crawford. 2018. A pilot study of landlord acceptance of Housing Choice Vouchers. Washington, D.C.: Urban Institute.
- Mills, Gregory, Daniel Gubits, Larry Orr, David Long, Judie Feins, Bulbul Kaul, Michelle Wood, Amy Jones & Associates, Cloudburst Consulting, and the QED group. 2006. The effects of housing vouchers on welfare families. Washington, D.C.: U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

Key Words: Housing Voucher, Race, Neighborhood, Take-Up

MIGRANTS' STRUGGLES AND ENDEAVOURS FOR HOMEMAKING IN SHARED HOUSING

Abstract ID: 1301

Individual Paper Submission

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International migrants struggle to access formal rental markets as they lack references, income, rental history and knowledge of support services in a new country. Their difficulties to obtain decent private accommodation are further exacerbated by a lack of affordable housing supply more widely as well as limited knowledge of residential tenancy protections. In this context, many migrants are living in shared housing with non-related tenants so they can share rental and utility costs and receive social and cultural support (Maalsen & Gurran, 2021). These shared housing arrangements often emerge through informal pathways, such as sub-letting of properties into multiple room rentals without written tenancy agreements between landlords and tenants. These housing arrangements can put migrants at the risk of exploitation, health risks and homelessness (either physically or emotionally), especially those who live in overcrowded situations (Nasreen & Ruming, 2019).

This paper draws on interviews of 32 international migrants living in shared housing in Sydney. These migrants were sharing the bedroom with non-related roommates, along with sharing common areas such as the living room, kitchen, and laundry. By mobilising studies on migration and homemaking (Baxter & Brickell, 2014; Boccagni, 2017; Easthope, 2014), the paper answers important questions of how and to what extent shared housing provides tenants freedom of home to perform everyday practices and how migrants engage in the process of homemaking in these non-family households.

The findings highlight migrants often experience a limited sense of autonomy, unequal power relations, difficulties in performing day-to-day routines, lack of privacy and conflicts with other household members, all of which disrupt the meanings of home as a source of 'ontological security'. Despite the difficulties of sharing, many migrants go above and beyond to create a shared sense of belonging and feelings of home as they initiate cleaning the house, cooking for their households, arranging social media groups, caring at times of sickness and distress, and paying rents and bills on time. The shared home emerges as a practice of making, through simultaneous and multi-layered strands of tenancy conditions, spatial and material culture, temporal aspects, and social relationships between non-related residents. As these factors of shared dwellings vary across time, residents' feelings of home also vary in relation to these factors, leading to experiences of homemaking, unmaking and remaking.

The research contributes to planning scholarship and practice by explaining living experiences of a housing form that is often viewed as transitional, short-term and insignificant living arrangement and of the population group, including international students, permanent residents and refugees, that is often marginalised in the planning policies for their housing affordability and homemaking experiences. Shared housing provides migrants with early access to housing close to education and employment centres, yet there is a need for regulatory response to the challenges migrants experience in this housing form, such as tenure insecurity, overcrowding, exploitation and health and safety risks.

Citations

- Baxter, R., & Brickell, K. (2014). For Home Unmaking. *Home Cultures*, 11(2), 133-143.
<https://doi.org/10.2752/175174214X13891916944553>
- Boccagni, P. (2017). Migration and the search for home: Mapping domestic space in migrants' everyday lives. Springer.
- Easthope, H. (2014). Making a Rental Property Home. *Housing Studies*, 29(5), 579-596.
<https://doi.org/10.1080/02673037.2013.873115>
- Maalsen, S., & Gurran, N. (2021). Finding home online? The Digitalization of share housing and the making of home through absence. *Housing, Theory and Society*, 1-19.
<https://doi.org/10.1080/14036096.2021.1986423>
- Nasreen, Z., & Ruming, K. (2019). Room Sharing in Sydney: A Complex Mix of Affordability, Overcrowding and Profit Maximisation. *Urban Policy and Research*, 37(2), 151-169.
<https://doi.org/10.1080/08111146.2018.1556632>

Key Words: Shared housing, International migrants, Housing informality, Homemaking, Housing marginalization

THE GEOGRAPHY OF RENTAL AFFORDABILITY IN THE US DURING THE COVID-19 PANDEMIC

Abstract ID: 1306

Individual Paper Submission

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Renters have been disproportionately harmed by the financial fallout of the COVID-19 pandemic. In the third quarter of 2021, 23 percent of renters had lost employment income in the prior four weeks and 15 percent were behind on their rent. Airgood-Obrycki, et al. (2022) further find that renters who lost employment income since the start of the pandemic were three times more likely to fall behind on their rent, and that lower-income and renters of color were substantially more likely to miss payments.

Little is known about the geography of housing affordability challenges since the start of the pandemic. America's Rental Housing 2022 discusses the state-by-state variation in missed payments, finding that renters in the South were more likely to fall behind. Other research details renter hardships in a particular place but are limited in scope geographically. Reina, Aiken, and Goldstein (2021), for example, find that over 90 percent of renters in Los Angeles who had applied for rental assistance had experienced a reduction in income, and over 60 percent were behind on rent.

Because lower-income and renters of color were more likely to fall behind on rent and tend to be geographically concentrated, rent arrears have also likely disproportionately harmed the neighborhoods these households live, potentially compounding existing affordability challenges. Indeed, certain neighborhood characteristics were already associated with higher housing cost burdens. Hess et al. (2020) find that higher median rents at the census tract level are associated with a greater likelihood of experiencing cost burdens for both Black and white renters, while the tract poverty rate is associated with higher burdens among white renters. Moreover, Rutan and Desmond (2021) find that evictions in mid-sized US cities are heavily concentrated by census tract, and eviction burdens fall on low-income and predominately Black communities.

This paper will build on the existing literature by showing the detailed geographic pattern of housing affordability during the COVID-19 pandemic. Our research questions are as follows:

- To what extent are the financial impacts of the pandemic on renter households and the resulting housing insecurity geographically concentrated?

- What neighborhood characteristics are associated with a greater likelihood of falling behind on rent? We will use data from the Census Bureau's restricted-access Household Pulse Survey with geographic identifiers at the census tract level. Examining the period from August 2020 through February 2022, we will employ both descriptive statistics and logistic regression models to identify the neighborhood characteristics associated with rent arrears, including neighborhood poverty, race/ethnicity, median income and rent, and existing affordability challenges. Disclosure of preliminary findings are pending review from the Census Bureau's Disclosure Review Board.

Our research will have two primary contributions. First, it will advance scholarship on the geography of housing affordability, its concentration, and association with different neighborhood characteristics, specifically in the context of the COVID-19 pandemic. Second, our research will help local planners and policymakers identify the neighborhood contexts where renters are most likely to fall behind, allowing planners to evaluate if rental assistance and stabilization programs are reaching communities with the greatest need.

Citations

- Airgood-Obrycki, Whitney, Chris Herbert, Alexander Hermann, and Sophia Wedeen. 2022. Making the Rent: Household Spending Strategies During the COVID-19 Pandemic.
- Hess, Chris, Gregg Colburn, Kyle Crowder & Ryan Allen. 2020. Racial Disparity in Exposure to Housing Cost Burden in the United States: 1980–2017. *Housing Studies*.
- Reina, Vincent, Claudia Aiken, and Sydney Goldstein. 2021. The Need for Rental Assistance in Los Angeles City and County.
- Rutan, Devin and Matthew Desmond. 2021. The Concentrated Geography of Eviction. *Annals of the American Academy of Political and Social Science*, 693(1), 64-81.

Key Words: Rental housing, Housing affordability, Race/ethnicity, COVID-19, Neighborhood change

WHY DID THE "MISSING MIDDLE" MISS THE TRAIN? EXPLORING BARRIERS TO INTENSIFIED FAMILY HOUSING IN WATERLOO REGION, CANADA

Abstract ID: 1344

Individual Paper Submission

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In 2019 the Region of Waterloo (RoW) launched the ION light-rail transit (LRT) network, with two stated goals—to move people and intensify land use. Land-use intensification goals succeeded, with \$2.6 billion in building investments in the Central Transit Corridor (CTC) between 2011-2019, the majority 1-2 bedroom high-rise residential condos.

Concurrently, housing affordability in the RoW has steeply decreased. The pandemic strengthened these trends (van der Merwe & Doucet, 2021), with year-over-year single family home price gains of 33%, the second highest in Canada, representing loan-to-income levels similar to London, U.K.

How can a residential building boom and housing affordability crisis co-exist? An explanation is lack of supply of “missing middle” (MM) housing in the RoW, an issue seen throughout North America. The term “missing middle” describes medium-density housing types suitable for families (Parolek, 2020). As single-family house prices accelerate, MM housing is critical to ease housing market pressures—as rentals, for those who can't or prefer not to buy, and as a lower-cost means for home ownership.

In Canada, the construction of MM housing types has declined significantly since the 1950s, alongside the development of “exclusionary” single-family zoning. This MM gap is evident in the RoW. Simultaneously, MM housing demand is increasing with demand for urban living among family-sized households (Maharaj, 2020). However, limited supply has made urban MM housing unaffordable for middle-income families, forcing a choice between a small urban apartment or a single-detached house in the suburbs, seen also in the RoW (Huang et al., 2021).

Our discussions with local developers, government officials, realtors, and non-profit housing finance specialists highlighted key barriers to MM supply, including lack of local demand evidence, financing constraints, and high land costs. Discussions and in-depth literature review also highlighted the importance of price expectations and risk perceptions. Drawing on our findings, we developed a conceptual systems framework that maps the planning, land market, and price expectations dynamics driving housing development decisions, which hypothesizes how development dynamics can lead to lock-in of initially successful building typologies, explaining the cascade of high-rise small-unit condo builds in the ROW.

Developer's decisions about when, where, and how to develop lands are shaped through interactions with investors, sellers, buyers, homeowners, and municipal planners (Donner, 2012). High-level Official Plans signal a planning preference for high-density development, supported by up-zoning, leading to land value uplift—based on expectations of higher-density and thus more profitable development. Land value uplift leads to preference for projects with higher per-area values. A successful project reinforces expectations of the demand for this housing type by risk-averse developers, individual investors, and lenders, reinforcing land value uplift. A corollary hypothesis is that successful MM demonstration builds may lead to a similar cascade of MM builds by reducing perceived project risk and complexity.

Such builds, however, may need to be supported by zoning that limits height while allowing higher density, to facilitate high-density low-rise development while controlling land-value uplift. Political and stakeholder support for such broad zoning changes that remove “exclusionary” single-family residential zoning, called for in a recent Ontario housing affordability report, is growing across Ontario.

Our research sheds new light on barriers to MM housing supply by articulating the systemic feedbacks between the planning and land/housing market realms. It demonstrates that understanding of the complexity of these systems can reveal key leverage points that trigger non-linear responses, empowering planners to develop policies that catalyze hoped-for housing market supply responses to increase housing affordability. Additionally, increased MM supply will facilitate the desired “TOD lifestyle” of a growing number of families, which may then decrease automobile dependence and help TODs achieve a critical mass of intensification.

Citations

- Donner, C. (2012). Housing Agents and Housing Submarkets. In S. J. Smith (Ed.), *International Encyclopedia of Housing and Home* (pp. 265-272). Elsevier. <https://doi.org/10.1016/B978-0-08-047163-1.00459-8>
- Huang, Y., Parker, D., & Minaker, L. (2020). Identifying latent demand for transit-oriented development neighbourhoods: Evidence from a mid-sized urban area in Canada. *Journal of Transport Geography*, 90, 102940. <https://doi.org/10.1016/j.jtrangeo.2020.102940>
- Maharaj, S. H. O. (2020). Factors Affecting the Supply of “Missing Middle” Housing Types in Walkable Urban Core Neighborhoods. *Muma Business Review*, 4, 001-015.
- Parolek, D. G. (2020). *Missing Middle Housing: Thinking Big and Building Small to Respond to Today's Housing Crisis*. Island Press.
- van der Merwe, J., & Doucet, B. (2021). Housing challenges, mid-sized cities and the COVID-19 pandemic. *Canadian Planning and Policy/Aménagement et politique au Canada*, 2021, 70-90

Key Words: Missing middle, Exclusionary zoning, Complex systems, Housing affordability, Land and housing markets

DISPARITIES IN FACTORS AFFECTING HOUSING PRICE: A MACHINE LEARNING APPROACH TO THE EFFECTS ON SINGLE FAMILIES HOUSING TRANSACTION PRICES

Abstract ID: 1347

Individual Paper Submission

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The needs for precise housing analysis are worth noting. On the one hand, the housing market is booming across the U.S., especially in Austin, Texas. According to a report from Freddie Mac House Price Index, the median housing prices in Austin increased by around 83% from 2016 to 2021. These increases lead to concerns about affordability, while implementations by local governments have been criticized for lacking precise investigations on factors affecting housing prices. On the other hand, previous studies have provided profound insights into the factors determining housing values. They concluded two groups of factors, including those correlated with the dwelling's characteristics (e.g., the year of housing, stories, property conditions, etc.) and those correlated with the surrounding environment (e.g., accessibility and built environment factors). However, recent studies raised concerns about nonlinearity and spatial dependency.

In terms of the needs from the practice and academic perspectives, this study examines the impacts of housing status and the surrounding environment on single-family housing prices through a machine learning approach based on housing transaction records in Austin from 2014 to 2017. This study aims to answer two research questions, *What are the global impacts of housing status and surrounding environment on single-family housing prices?* and *What are socio-demographic and economic disparities in these impacts?* In the analysis, first, we found that X-gradient

boosting decision trees (XGBDT) performed best among five machine learning approaches and developed a global model investigating the impacts on single-family housing prices. To explore the disparities, we categorized houses into five groups containing high-income neighborhoods, low-income neighborhoods, high rates of White-only neighborhoods, high rates of Hispanic American neighborhoods, high rates of African American neighborhoods, and vulnerable neighborhoods (i.e., high rates of minorities and low income) and developed local models accordingly.

In the results, the global model highlights the importance of housing status (e.g., year built and property conditions) in predicting single-family housing prices, while the surrounding environmental factors are insignificant. Besides, the local models confirm the importance of housing status and point out the importance of the surrounding environment. In detail, local models show that access to public transit plays a positive role in predicting single-family housing values among most groups except the high-income neighborhoods. Also, population density and household density are significant in all groups, but their roles are different across neighborhoods.

Based on these results, there are three implications for academia and practice. First, the interpretable XGBDT framework presents powers in housing analysis and can be used in other empirical studies. Second, decision-makers need to pay extra attention to the positive role of public transit service on single-family residential property values in case of displacements by transit improvements. Finally, housing policies should focus on ethnic minority and low-income communities to improve their housing resilience.

Citations

- Bartholomew, K., & Ewing, R. (2011). Hedonic Price Effects of Pedestrian- and Transit-Oriented Development. *Journal of Planning Literature*, 26(1), 18–34. <https://doi.org/10.1177/0885412210386540>
- Binoy, B. . V., Naseer, M. A., Anil Kumar, P. P., & Lazar, N. (2021). A bibliometric analysis of property valuation research. *International Journal of Housing Markets and Analysis*, 15(1), 35–54. <https://doi.org/10.1108/IJHMA-09-2020-0115>
- Li, W., & Saphores, J.-D. (2012). A Spatial Hedonic Analysis of the Value of Urban Land Cover in the Multifamily Housing Market in Los Angeles, CA. *Urban Studies*, 49(12), 2597–2615. <https://doi.org/10.1177/0042098011429486>
- Phan, T. D. (2018). Housing Price Prediction Using Machine Learning Algorithms: The Case of Melbourne City, Australia. 2018 International Conference on Machine Learning and Data Engineering (ICMLDE), 35–42. <https://doi.org/10.1109/ICMLDE.2018.00017>

Key Words: machine learning, housing transaction prices, single-family, economical and demographical disparities

REVITALIZED OR GENTRIFIED? EXAMINING NEW HOUSING PATTERNS AND NEIGHBORHOOD CHANGE IN HISTORICALLY REDLINED AREAS IN MILWAUKEE

Abstract ID: 1390

Individual Paper Submission

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The city of Milwaukee, WI is representative of ongoing urban revitalization efforts across major US metro areas. As a result of redlining and blockbusting, Milwaukee remains one of the most segregated cities in the country (Levine, 2020), with significant levels of poverty and disinvestment in majority Black, Indigenous and People of Color (BIPOC) communities. Over the last two decades, Milwaukee has pursued a strategy of urban revitalization with a particular emphasis on private-sector solutions (Kenny & Zimmerman, 2003). Over the last decade, some scholars have investigated whether these investments have resulted in upward pressure on housing prices, a key indicator of displacement and gentrification, with mixed results (Center for City Progress, 2015; Maciag, 2015). In 2019, Milwaukee adopted an anti-displacement policy to mitigate the ongoing risk of displacement of low-income BIPOC residents (City of Milwaukee, 2019). The policy requires that 20% of units in a city-funded affordable housing development be set aside for a limited amount of time for priority leasing by residents in targeted neighborhoods, most of which are in historically redlined areas. However, it is unclear the degree of neighborhood change these policies are responding to, and whether these new patterns fit the definition of gentrification, displacement or revitalization.

Our research will contribute to the urban planning and housing policy debate by providing insight into current changes in the housing landscape in historically segregated areas in Milwaukee and assess the extent to which these areas show indications of gentrification, displacement, or equitable revitalization. Using both spatial analysis and hedonic modeling of housing prices, we will study patterns of historic and current housing discrimination (residential segregation) in Milwaukee and identify areas of neighborhood change at the census tract level. We utilize secondary housing data from the City of Milwaukee, business records from ReferenceUSA, as well as redlining data from the Mapping Inequality project to answer the following key research questions: 1) To what degree have neighborhood

housing characteristics and economic indicators changed over the last 20 years in historically redlined areas? 2) What are key socio-demographic changes in terms of population size, household income, race and gender and household composition? 3) To what degree do the observed patterns of neighborhood change fit the definition of gentrification, displacement or equitable revitalization, and what is their relationship to neighborhood-level changes in housing quality and local amenities? Our preliminary findings reveal that some formerly redlined areas show early indications of risk of displacement. However, patterns vary by region in the city and by majority racial groups. Findings from this study will help inform policy to ensure equitable development and proper mitigation strategies should gentrification or displacement become more evident.

Citations

- Levine, M. (2020). The State of Black Milwaukee in National Perspective: Racial Inequality in the Nation's 50 Largest Metropolitan Areas. Center for Economic Development Publications, 56. https://dc.uwm.edu/ced_pubs/56
- City of Milwaukee (2019). Anti-Displacement Neighborhood Preference Policy. Milwaukee Common Council. File 190401.
- Mallach, A. (2015). Gentrification and Neighborhood Decline in a Legacy City: Looking at Milwaukee 2000-2012. Center for Community Progress. Available at: <https://communityprogress.org/publications/gentrification-and-neighborhood-decline/>
- Maciag, M. (2015). Gentrification in America Report. Governing. Available at: <https://www.governing.com/archive/gentrification-in-cities-governing-report.html>
- Kenny, J. T., & Zimmerman, J. (2004). Constructing the 'Genuine American City': neo-traditionalism, New Urbanism and neo-liberalism in the remaking of downtown Milwaukee. *Cultural Geographies*, 11(1), 74-98.

Key Words: Gentrification, Displacement, Urban Revitalization, Redlining, Blockbusting

A NEW REDLINING IN THE DIGITAL ERA? A GEOSPATIAL AND STATISTICAL ANALYSIS OF REDFIN SERVICE LOCATIONS IN THE CONTEXT OF HISTORICALLY REDLINED AREAS IN THE U.S.

Abstract ID: 1399

Individual Paper Submission

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In October 2020, the National Fair Housing Alliance (NFHA) and other local and regional fair housing agencies in the United States filed a lawsuit against Redfin, a national real estate brokerage and technology company based in Seattle, Washington (NFHA et al. v. Redfin 2020). The NFHA et al. asserted that the corporation may have discriminated against persons of color in multiple metropolitan regions by providing its full-service to select locations, in violation of the Fair Housing Act of 1968. Redfin responded promptly to this allegation, claiming that the decision was a foregone conclusion as a result of their business model (Kelman 2020). Historically, "redlining" refers to the U.S. federal government's involvement in creating and managing a set of discriminatory policies in mortgage lending to certain areas of residents who tend to be racial and ethnic minorities. Notably, the Home Owners' Loan Corporation's (HOLC) "residential security maps" indicate various levels of "desirability" for financing/lending in various portions of the country's metro areas, such as A ("Best"/green areas), B ("Still Desirable"/blue areas), C ("Declining"/yellow areas), and D ("Hazardous"/red areas). The racially segregated cities, communities, and neighborhoods we have today are historical products of the systematic and institutional discrimination (Rothstein 2017), effectively racist government policies (e.g., redlining), and the corresponding private sector practices and consumer behaviors in the housing market. Despite the Fair Housing Act of 1968 which prohibits discrimination by direct providers of housing and other public and private entities, housing discrimination based on race/color, and disability, has persisted throughout the country in various forms (Augustine, et al. 2020).

This project intends to investigate, and if possible, substantiate, the NFHA et al.'s legal claim (i.e., the company systematically fails to take on listings in certain localities) by conducting a series of geospatial and statistical analyses that compare and analyze the Redfin's full- and no-service home listing locations in relation to the historical HOLC residential security map's most-to-least desirable type (A, B, C, and D) areas throughout the 15 largest metro areas. Multiple studies and reports (Augustine, et al. 2020; Hoffman, Shandas and Pendleton 2020; Husain, et al. 2020; Nardone, et al. 2020) reveal that the people living in the previously redlined zones continue to experience more poverty, lower educational attainment, poorer health (including higher percentage of coronavirus-related hospitalization), and more severe environmental hazards (e.g., flooding and urban heat island), and these segregated residential patterns have exacerbated various social, economic, environmental, and health inequities, which frequently coincide with racial/ethnic divisions (Choi, et al. 2019; Hardy, Logan and Parman 2018). "Your zip code is your destiny," is a well-known saying in the planning and geography fields. According to the Robert Wood Johnson Foundation (2020), the location of one's residence can reasonably predict one's life expectancy. (For example, according to their Life Expectancy model, if you live in inner-city, West Philadelphia, you will likely 11 years

die young on average than those living in wealthier suburbs such as Wayne, Pennsylvania.) Housing choice is critical to the U.S. society because residential segregation has contributed to societal malice by exacerbating racial inequities that correlate many socioeconomic and health inequities. In this regard, it is still useful to compare what Redfin is doing today with HOLC's scoring system even if the latter is no longer used.

Citations

- Augustine, Lindsay, Cathy Cloud, Shivaughn Ferguson, Victoria Finkle, Sherrill Frost-Brown, Debby Goldberg, Olive Grob-Lipkis, et al. 2020. Fair Housing in Jeopardy. Annual Report, Washington, DC: National Fair Housing Alliance.
- Choi, Jung H, Alanna McCargo, Michael Neal, Laurie Goodman, and Caitlin Young. 2019. Explaining the Black-White Homeownership Gap: A Closer Look at Disparities across Local Markets. Research Report, Washington, DC: Urban Institute.
- Kelman, Glenn. 2020. Redfin & Fair Housing. October 29. Accessed October 15, 2021. <https://www.redfin.com/news/redfin-and-fair-housing/>.
- NFHA et al. v. Redfin. 2020. 2:20-cv-01586 (U.S. District Court - Western District of Washington at Seattle, October 28).
- Rothstein, Richard. 2017. The Color of Law: A Forgotten History of How Our Government Segregated America. New York: Liveright.

Key Words: Redlining, Housing Discrimination, Fair Housing, Equity, Redfin

THE SANCTIONED ENCAMPMENT: A NATIONAL SURVEY OF AN EMERGING TOOL TO MANAGE HOMELESSNESS

Abstract ID: 1419

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On any given night, around 600,000 people in the U.S. sleep outside unsheltered, a number that has increased steadily in recent years due to a rise in housing prices, stagnant wages, and exclusionary zoning (Shinn and Khadduri, 2020). The COVID-19 pandemic exacerbated this crisis by putting millions of lower-income households at heightened risk of eviction (Ring and Schuetz, 2021). Given the inability or lack of will to house those experiencing homelessness in permanent accommodations, a stop-gap solution emerged in the form of the sanctioned encampment (SE). SEs are formally-recognized, legally-permitted, outdoor areas for unhoused residents that provide temporary shelter. Typically, SEs are managed by non-profits and offer supportive services to their residents such as health care, employment assistance, and housing connections.

SEs have become increasingly common since 2020 as many congregate shelters closed due to high barriers to entry and new COVID-19 restrictions. Yet we know little about their success as a solution to homelessness and how they relate to the criminalization and control of the unhoused population. In this mixed-methods study, we address these gaps in three ways. First, we conduct a national web search to identify existing SEs. Second, we analyze these SEs to understand how they are sited, permitted, and managed. Third, we determine how this new land use, which many consider a less-punitive and more compassionate method of policing homelessness, may also serve to further "invisibilize" homelessness (Margier, 2021).

To build a national database of existing SEs in the U.S., we conducted an extensive internet search using a snowball search method (see Evans, 2020). We found relatively complete information on the organizational structure, partnerships with private or public entities size and capacity, zoning and site context, approximate costs, barriers to entry, and services provided in a total of 50 SEs. SEs vary widely in their management, funding, regulation, entry barriers, and locations. Around half offer case management services and nearly 1/3 offer mental health services; 1/3 of the encampments are located within 1/4-mile of a highway; and around half were created since the start of the COVID-19 pandemic.

We also uncover a key paradox. On the one hand, SEs provide secure, albeit temporary, shelter, supportive services, and basic necessities. On the other, they can make the unhoused population invisible, placing them behind locked fencing and in out-of-sight areas. Similarly, a number of SEs we examined control and pacify unhoused residents through around-the-clock security, strict rules, and high barriers to entry. The introduction of SEs has also been used to justify sweeps of unsanctioned encampments. We find that officials have relied on new SEs to skirt recent rulings

such as *Martin vs. Boise*, which makes it illegal for municipalities in nine U.S. states to enforce “camping bans” unless they provide adequate indoor or SE-style shelter space. As such, the SE model resists categorization as either a compassionate or a punitive solution to addressing urban homelessness.

This study makes several contributions to an emerging body of literature and policy. First, we describe some key challenges and opportunities related to the SE model for planners and policymakers to consider. Second, our findings help private entities, site managers, and caregivers understand the potential benefits and drawbacks of SEs, including how they help justify the criminalization of unhoused people. And third, because of this model's novelty, our findings suggests avenues for future research on SEs as a tool for managing homelessness.

Citations

- Evans, K. 2020. Tackling homelessness with tiny houses: An inventory of tiny house villages in the United States. *The Professional Geographer*, 72(3): 360-370.
- Margier, A. 2021. The compassionate invisibilization of homelessness: where revanchist and supportive city policies meet. *Urban Geography*, DOI: 10.1080/02723638.2021.1970915.
- Ring, M. and J. Schuetz. 2021. Homelessness fell across most metro areas after the Great Recession. Will COVID-19 change that? Brookings, August 9. Accessed at: <https://www.brookings.edu/research/homelessness-fell-across-most-metro-areas-after-the-great-recession-will-covid-19-change-that/>.
- Shinn, M. and J. Khadduri. 2020. *In the midst of plenty: Homelessness and what to do about it*. New York: John Wiley & Sons.

Key Words: housing policy, homelessness, tent cities, sanctioned encampments

DISPLACEMENT AND THE CITY: SPACE, TIME, AND RELATIONALITY

Abstract ID: 1421

Individual Paper Submission

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A wealth of scholarship within planning and related discipline has paid attention to displacement, particularly as it relates to gentrification and the transformation of urban environments (Zuk et al 2018). Across myriad fields of urban inquiry, displacement is now a central concern. Its effects can be seen in diverse environments, from the inner cores of cities such as Paris or Berlin, to the suburban spaces of the San Francisco Bay Area. The causes are also diverse: the emergence and consolidation of vacation rental markets, the lingering effects of the subprime crisis, and the financialization of housing have transformed where and how people live (Christophers, 2021; Santos & Sequera, 2018). Displacement, critical urban scholarship has argued, is a key logic of the contemporary, unequal city, and urban life under current regimes of finance, property, and placemaking in increasingly precarious. Often such work is also attuned to the specificities of race, gender, and Indigeneity as they configure certain populations as more easily movable or readied for banishment (Roy 2019). Such scholarship, however, is primarily concerned with displacement and its myriad synonyms (banishment, eviction, expulsion, even uricide) as fundamentally contained within and pertaining to the city itself, perhaps with some consequences elsewhere.

What has been less explored is how forms of displacement—whether from the city or elsewhere—produce new (sub)urban spaces, sociality, and struggles (Hochstenbach & Musterd, 2021). Urbanists in the United States are keenly aware that gentrification in expensive coastal cities has provoked an exodus. Some head to exurban spaces such as the fringes of the Bay Area, where the metropolitan region meets the Central Valley, where the economic present and future meets its agricultural past. Others, however, have gone on to Denver or Minneapolis, New Orleans or Chicago, in an effort to find urban living that is more within their economic grasp. How do we think about these movements of people from one place to the next? How does displacement in one site produce emplacement in another? One means of understanding such displacement, mobility, and settlement, I contend, is through the lens of relationality as it has been advanced in transnational geographical analysis.

In this paper, I pay attention to the ways in which displacement from elsewhere also produces urbanism and urban communities. I argue we need to understand the city relationally with attention to previous displacement(s) across not only spatial fields but also temporal moments. Here I follow two divergent trajectories of displacement, each with their own temporalities and spatialities, to reveal how they contribute to the contemporary cities of San Francisco and Madrid. I deploy ethnographic analysis drawn from previous work within the Spanish anti-evictions movement and more recent research on artist homeowners in the Bay Area. In particular, I examine several key oral histories of mobility to demonstrate how displacement helps to produce new modes of urban living. I conclude by considering the ways in which historical logics of difference—race, class, ethnic background and migratory origin, indigeneity, and gender—ultimately produce more permanent forms of emplacement. Who is rendered displaceable in the city, I argue, is intimately connected to who can access whiteness and its links to property.

Citations

- Zuk, M., Bierbaum, A. H., Chapple, K., Gorska, K., & Loukaitou-Sideris, A. (2018). Gentrification, displacement, and the role of public investment. *Journal of Planning Literature*, 33(1), 31-44.
- Christophers, B. (2021). Mind the rent gap: Blackstone, housing investment and the reordering of urban rent surfaces. *Urban Studies*, 00420980211026466. <https://doi.org/10.1177/00420980211026466>
- Santos, J. A., & Sequera, J. (2018). Expansión de la ciudad turística y nuevas resistencias: El caso de Airbnb en Madrid. *Empiria: Revista de metodología de ciencias sociales*, 41, 15–32.
- Roy, A. (2019). Racial banishment. *Keywords in radical geography: Antipode* at 50, 227-230.
- Hochstenbach, C., & Musterd, S. (2021). A regional geography of gentrification, displacement, and the suburbanisation of poverty: Towards an extended research agenda. *Area*, 53(3), 481–491. <https://doi.org/10.1111/area.12708>

Key Words: Displacement, Gentrification, Housing

THE IMPACT OF RAD CONVERSIONS ON THE HEALTH AND WELL-BEING OF CHILDREN IN PUBLIC HOUSING

Abstract ID: 1428

Individual Paper Submission

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As the nation's public housing has struggled with a funding crisis, many public housing units across the country have fallen into disrepair. Broken elevators, inadequate heating and cooling systems, and lead paint are some of the conditions faced by public housing residents, which can pose significant health hazards, particularly for children. Advocates debate the merits of the Rental Assistance Demonstration (RAD) program as a means to improve the condition of public housing. Administered by the U.S. Department of Housing and Urban Development (HUD), the program allows for the conversion of public housing developments from public housing support to project-based Section 8 contracts. Conversions also often involve a shift from public to private property management as well as physical renovations and additional flexibility in accessing private and public funding sources. While RAD conversions can improve the physical condition of subsidized housing developments, some advocates worry that giving control to private developers may harm tenants if they are stricter about rent collections and other rules and more likely to force residents to leave.

Our research seeks to understand the impact of RAD conversions on the health and well-being of children living in converted public housing developments in New York State. Using Medicaid claims data from the state together with RAD development data from HUD, we evaluate the impact of the 38 RAD conversions in New York State that took place between 2015 and 2018 on the physical and mental health and residential mobility of children living in these developments at the time of conversion. We match each RAD development to a similar public housing development that did not go through RAD conversion in order to identify the treated group (5,497 children) and a control group (4,460 children). We conduct an event study analysis to determine the effects of RAD conversion on housing-related health outcomes including asthma, anxiety, injuries, and upper respiratory infections, as well as hospital and emergency department visits, stratifying results by development-level renovation and relocation costs. We also examine whether children are more likely to experience a move after conversion and whether they relocate to higher- or lower-poverty neighborhoods. In addition, we track evictions at the building level before and after conversion in order to determine whether patterns of eviction changed as the result of the shift to private management.

In brief, our preliminary results show that in the year following conversion, children initially living in RAD developments were two percentage points less likely to have an asthma diagnosis than children in the control group. They were also about two percentage points less likely to visit the emergency department in the year following RAD conversion. On the other hand, we find that children in RAD developments were three to four percentage points more likely than children in the control group to move out of their developments in the year after conversion. We are in the process of merging in eviction records to shed light on whether these are voluntary or involuntary moves.

Citations

- Aratani, Y., Charney, A., Lazzeroni, S., Nguyen, S., Moore, T., Hernández, D., & Brooks-Gunn, J. (2019). Examining the Effects of the Rental Assistance Demonstration on Children Living in Public Housing in

Fresno, California. U.S. Department of Housing and Urban Development, Office of Policy Development and Research. <https://www.huduser.gov/portal/publications/RADEvaluationFresno.html>

- Hernández, D., Moore, T., Lazzaroni, S., & Nguyen, U. S. (2019). "The 'Projects' Are Nice Now": Resident Perspectives on the Rental Assistance Demonstration (RAD) Program. *Housing Policy Debate*, 29(6), 853–864. <https://doi.org/10.1080/10511482.2019.1586746>
- Reid, C. (2017). Assessing the Early Implementation of the Rental Assistance Demonstration Program. *Terner Center for Housing Innovation*. <https://ternercenter.berkeley.edu/research-and-policy/assessing-rad/>
- Stout, D., Clogston, F., Thackeray, A., Stoloff, J., & Anthony, B. (2019). Evaluation of HUD's Rental Assistance Demonstration (RAD). U.S. Department of Housing and Urban Development. <https://www.huduser.gov/portal/publications/RAD-Evaluation-Final-Report.html>

Key Words: Public Housing, Renovation, Rental Assistance Demonstration, Children's Health, evictions

DISPLACEMENT, EVICTION, AND HOUSELESSNESS IN SPOKANE, WA, USA: A GIS ANALYSIS OF HOUSING, RENT, AND POINT-IN-TIME COUNT DATA

Abstract ID: 1445

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Houselessness has ascended to crisis conditions across urban America, which has worsened sharply since the onset of the COVID-19 Pandemic. The critical literature on houselessness is voluminous and transcends disciplinary boundaries. Emphasis has been placed on the adoption and expansion of anti-homeless laws (e.g., sit and lie ordinances) that have systematically eroded what little public spaces are left for houseless individuals to inhabit without committing a crime. Ethnographic research chronicles how these laws have worsened the experience of being homeless, forcing them to navigate a more intricate, onerous, and spatially expansive daily routine as part of their survival strategies. Other work points to the role of housing as a structural determinant in the (re)production of homelessness, identifying the mobilization of private property toward maximizing profits among private developers and major corporate landowners and property management firms. Conversely, the literature on the geography of displacement illuminates the reality of some (usually low-income) neighborhoods acting as centers of chronic eviction in the rental housing market. Scholarship that explicitly and directly examines the links between the geography of displacement and eviction and the production of houselessness is less than forthcoming. This study brings these two bodies of literature into closer dialogue in the context of a GIS analysis of houselessness, displacement, and rent in the context of Spokane, WA, USA. The study also represents a collaboration between Urban and Regional Planning faculty, graduate and undergraduate students, and professionals working with the City of Spokane to more deeply examine the impact of Spokane's red hot housing market on the recent surge of houselessness observed in recent years. The collaboration included designing supplementary questions on the survey implemented during Spokane County's 2022 Point-In-Time (PIT) Count, including questions designed to assess where houseless individuals last lived in Spokane before they became houseless. This data was then placed in a GIS data set of publicly available parcel data (including tax-paying entities for every property) joined with available data on rent, income, and the addresses of evictions (going back to 2018) organized by neighborhood. The analysis reveals a significant percentage of large and non-local property investment firms in evictions as well as four specific neighborhoods in Spokane as houseless production zones directly linked to contemporary capitalist housing market dynamics. We conclude by discussing the policy implications of the analysis more broadly. Enhanced funding for more shelter space is needed, but in terms of targeting the political-economic processes that render people houseless in the first place, substantially greater interventions in private property (e.g., conversion bans, displacement-free zones, expanding rent control, etc.) are needed as well as investment at the federal scale to enable local governments to more fundamentally address the ongoing and worsening housing affordability crisis unfolding across urban America.

Citations

- Walks, A., and Soederberg, S. (2021) The New Urban Displacements? Finance-Led Capitalism, Austerity, and Rental Housing Dynamics. *Urban Geography*, 42(5): 571-82.
- Anderson, M., et al. (2021) Class monopoly rent, property relations, and Portland's homeless crisis. *Urban Geography*, DOI: 10.1080/02723638.2020.1847937.

- Sims, J., and Iveson, A. (2021) Multiple Eviction: An Investigation of Chain Displacement in Dane County, Wisconsin. *Urban Affairs Review*, 57(2): 527-551.
- Cusack, M., and Montgomery, A. (2017) The role of eviction in veterans' homelessness recidivism. *Journal of Social Distress and the Homeless*, 26(1): 58-64.
- Desmond, M. (2017) *Evicted: Poverty and Profit in the American*. New York: Crown Publishers.

Key Words: Property, Governance, Neoliberalism, Political economy, Gentrification

GENTRIFICATION AND CHANGING VISUAL LANDSCAPES: A GOOGLE STREET VIEW ANALYSIS OF RESIDENTIAL UPGRADING AND CLASS AESTHETICS IN HAMILTON'S LOWER CITY

Abstract ID: 1463

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Measuring the pace and spread of gentrification is important to developing policies to mitigate its negative consequences. Typically, this is done through an analysis of census data. However, this approach has numerous shortcomings, including the homogenizing effect on differences within neighbourhoods and the infrequency of census data collection. Visual analysis helps show unregulated patterns of regularity (Rajčan & Burns, 2020) and can render visible fine-grained detail about spatial, economic and cultural changes within the urban landscape. As Elvin Wylie (2010) stresses, there is a need to add meaning and context to photographs so that they can begin and enhance conversations about cities. Google Street View (GSV) is emerging as a source of repeat photography; its regular coverage and publicly accessible images enables an immediate and fine-grained assessment of both capital investment and socio-cultural/class aesthetics, both of which are important to explaining and interpreting gentrification (Hwang and Sampson, 2014).

In this paper, we analyze GSV images taken between 2009 – 2021 within 10 census tracts spread across Hamilton, Ontario's Lower City. While neighbourhood downgrading has been the dominant trend for decades, and some neighbourhoods are among Canada's poorest (Harris, 2020), gentrification is occurring, not least because of the spillover effects from nearby Toronto. The aim of this paper is therefore to paint a detailed and fine-grained picture of urban changes that are not (yet) evident within statistical analysis. Specifically, we document the spread and nature of both capital upgrades (such as renovations and additions), as well as changes to the aesthetics of residential properties that reflect middle-class tastes, values and lifestyles.

Our approach differs from other studies that have employed GSV analysis; instead of selecting random sites within neighbourhoods using a simple coding scheme, our research systematically coded every parcel on one side of virtually every residential street within each of the 10 neighbourhoods with a detailed coding scheme that enabled us to document many different types of capital and aesthetic upgrading. The latter includes elements such as soft modernism colour palettes and horizontal fences associated with contemporary gentrification (Rosenberg, 2011).

Our analysis reveals distinct spatial and temporal patterns between neighbourhoods where there is little indication of gentrification in census analysis and neighbourhoods where there is already statistical evidence of upgrading. The former were characterized by higher rates of capital investment (new roofs, exterior renovations), while the latter saw the arrival of aesthetic and style changes reflective of middle class tastes. Mapping these changes both collectively and separately paints a complex, and fine-grained, block-by-block picture of gentrification that reveals why some areas are more conducive to gentrification than others. Our analysis is important for critical visual methodologies, theories of neighbourhood change and planning and policymaking.

Citations

- Harris, R (2020) Hamilton: poster child for concentrated poverty, in Grant, J, Walks, A and Ramos, H (EDs) *Changing Neighbourhoods: Social and spatial polarization in Canadian Cities*. University of British Columbia Press, 149 – 169.
- Hwang, & Sampson, R. J. (2014). Divergent Pathways of Gentrification: Racial Inequality and the Social Order of Renewal in Chicago Neighborhoods. *American Sociological Review*, 79(4), 726–751.
- Rajcan, & Burns, E. A. (2020). Suburban class habitus: applying Pierre Bourdieu's visual sociology to the city. *Visual Studies* (Abingdon, England), 35(2-3), 216–231.
- Rosenberg. (2011). Home Improvement: Domestic Taste, DIY, and the Property Market. *Home Cultures*, 8(1), 5–23.
- Wylie. (2010). Things pictures don't tell us: In search of Baltimore. *City* (London, England), 14(5), 497–528.

Key Words: gentrification, visual analysis, class change, urban aesthetic, Google Street View

IS MUNICIPAL PLANNING RESPONSIVE TO URBAN INDIGENOUS HOUSING NEEDS? AN EXAMINATION OF HOUSING PLANS AND POLICIES IN BRITISH COLUMBIA

Abstract ID: 1464

Individual Paper Submission

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This paper explores how municipalities in British Columbia, Canada are responding to urban Indigenous housing needs through municipal housing policies and plans. While large scale housing policies and programs remain in the provincial and federal purview, local governments are well positioned to leverage federal and provincial programs to address local needs and support the development of Indigenous-specific housing. Extensive literature exists regarding Indigenous housing conditions on-reserve and research continues to emerge articulating the disparity in access to adequate housing between Indigenous and non-Indigenous peoples (Walker et al, 2010; Belanger et al, 2012). However, an analysis of municipalities' response to urban Indigenous housing needs in BC through policies and plans remains elusive. This is surprising, as 80% of Indigenous peoples in BC reside off-reserve and 60% of this population live in urban settings.

Official Community Plans (OCPs) and housing strategies are two policy instruments used by municipalities to acknowledge housing needs and articulate priorities in addressing community needs. While OCPs typically consider long-term growth and needs (Baynham and Stevens, 2014), many local governments in British Columbia have created separate housing strategies which outline shorter-term policies and housing initiatives in response to current housing needs in their community. British Columbia has recently mandated all municipalities to produce a Housing Needs Report by April 2022 and every five years thereafter. The province has not required nor explicitly encouraged municipalities to include Indigenous-specific data within these reports nor address Indigenous-specific needs in accompanying housing strategies.

In partnership with the Aboriginal Housing Management Association (AHMA) in British Columbia, this study examines municipal responses to urban Indigenous housing needs within Official Community Plans (OCPs) and housing strategies to better understand the barriers municipalities perceive they face in addressing urban Indigenous housing needs. Using a content analysis, survey responses from twenty-four municipalities in British Columbia, and semi-structured interviews with eight municipal planners, this research finds most municipalities do not address urban Indigenous housing needs with their OCP or housing strategy, despite expressing a desire to engage in reconciliation efforts. The study identified three significant challenges for municipalities in addressing urban Indigenous housing needs: 1) lack of financial and human resources to identify Indigenous housing needs through their current planning processes, 2) ambiguity over whether Indigenous housing needs are distinct, and 3) uncertainty around the role and jurisdiction of municipal governments.

While municipalities are well positioned to address urban Indigenous housing needs, uncertainty and misconceptions around the identification of urban Indigenous housing needs limit effective municipal responses through OCPs and housing strategies. Municipal policies and programs that aim to respond to Indigenous housing needs must be developed through Indigenous-led and Indigenous-informed processes in order to uphold Indigenous rights as recognized by the United Nations Declaration on the Rights of Indigenous Peoples. By addressing urban Indigenous housing needs, municipalities can demonstrate their commitment to action on reconciliation efforts in Canada.

Citations

- Baynham, M. & Stevens, M. (2014). Are we planning effectively for climate change? An evaluation of official community plans in British Columbia. *Journal of Environmental Planning and Management*, 57(4).
- Belanger, Y.D. Weasel Head, G., and Awosoga, O. (2012). Housing and Aboriginal People in Urban Centres: A Quantitative Evaluation. *Aboriginal Policy Studies* 2(1), 4-25.
- Walker, R., & Barcham, M. (2010). Indigenous-Inclusive Citizenship: The City and Social Housing in Canada, New Zealand, and Australia. *Environment and Planning A: Economy and Space*, 42(2), 314-331.

Key Words: reconciliation, urban Indigenous housing, official community plans, British Columbia, municipal planning

ASIAN HOMEOWNERSHIP AND NEIGHBORHOOD CHARACTERISTICS IN TEXAS IN THE 2010S

Abstract ID: 1472

Individual Paper Submission

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Texas is the second largest state by population, and it continues to grow at a fast rate. It has accommodated a substantial number of Asian populations domestically, which has fueled its Asian population growth recently, in addition to Asian immigrants from the Asian continent, which occurred more prominently at an earlier stage. However, in contrast to other racial and ethnic groups in the US (e.g., White, Black, and Latinx) and Asian Americans in some other states (e.g., California and New York), little information about where Asians live and what matters to Asians' homeownership in Texas has been known.

This study aims to examine the homeownership of the Asian population in Texas, with a particular focus on the state's largest metropolitan areas: the Dallas-Fort Worth, Houston, Austin, and San Antonio areas. In addition to their homeownership, neighborhood characteristics are evaluated to determine the key factors of the growing Asian homeownership. This study compares the 2010 and 2019 datasets to measure whether Asian communities are more identified in suburban areas and to assess the factors that influence growing Asian homeownership in Texas' large metropolitan areas in the 2010s, approximately after the Great Recession and before the COVID-19 pandemic outbreak.

This study employs quantile regressions to measure the association between Asians' homeownership rates and neighborhood features to capture varying levels of Asian clusters and understand the expansion of the Asian community in suburban areas. Specifically, this study divides suburban counties from core counties and exurban counties in each metropolitan region in the regression models. Main datasets are based on race-based US Census Bureau statistics. Additionally, public education quality records from the Texas Education Agency are used, which is the main interest of this study.

This research contributes to a better understanding of how the Asian population is growing in Texas' demographic profiles. Furthermore, by examining one of the least studied racial groups in the existing literature, this study allows recognition of racial diversity in the rising state. In addition, this study gives more up-to-date and accurate information about an under-researched minority population group to local, state, and metropolitan-level governments and agencies, which will help them in making appropriate policy decisions.

Citations

- Anthony Knapp & Igor Vojnovic (2016). Ethnicity in an Immigrant Gateway City: The Asian Condition in Houston, *Journal of Urban Affairs*, 38:3, 344-369.
- Chakrabarty, D., Osei, M. J., Winters, J. V., & Zhao, D. (2019). Which immigrant and minority homeownership rates are gaining ground in the US?. *Journal of Economics and Finance*, 43(2), 273-297.
- DeSilva, S., & Elmelech, Y. (2012). Housing inequality in the United States: Explaining the white-minority disparities in homeownership. *Housing Studies*, 27(1), 1-26.
- Yu, Z., & Myers, D. (2010). Misleading comparisons of homeownership rates when the variable effect of household formation is ignored: Explaining rising homeownership and the homeownership gap between Blacks and Asians in the US. *Urban Studies*, 47(12), 2615-2640.
- Flippen, C., & Kim, E. (2015). Immigrant context and opportunity: New destinations and socioeconomic attainment among Asians in the United States. *The ANNALS of the American Academy of Political and Social Science*, 660(1), 175-198.

Key Words: Asian, Homeownership, Suburbanization, Public Education Quality, Texas

TWO FOR ONE: SUBSIDIZED HOUSING AS CLIMATE AND AFFORDABILITY POLICY

Abstract ID: 1475

Individual Paper Submission

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Housing affordability has become a major urban issue, especially in central areas due to gentrification. At the same time, compact urbanism is promoted to help curb carbon emissions to achieve climate change goals by way of reducing land consumption, trip distances and automobile reliance (Nieuwenhuijsen, 2020). Affordability and compact urbanism are linked in that more compact urban form and amenity provision can increase the cost of central locations in the absence of government involvement in housing (Moos et al., 2018). This paper contributes to the discussion on the need for renewed government involvement in housing. We examine if access to subsidized housing

facilitates shorter and less automobile-oriented commutes. To do so, our analysis uses empirical tests based on data from Canada's three largest metropolitan regions.

Policy solutions to affordability concerns often focus on market-based approaches aimed at stimulating housing supply. The counter argument is that affordability issues are fundamentally a structural problem related to financialization and other forms of neo-liberalization, so that market-based approaches alone are unlikely to improve affordability (Been et al., 2019). We contribute to this debate in the spirit of "strategic" post-positivist approaches that utilize quantitative evidence to make a case for progressive social and environmental policy (Wyly, 2009).

To examine how commuting is linked to access to subsidized housing, we draw upon data from the most recently available Canadian census (2016). Prior to 2016, data was not collected on subsidized housing, thus our analysis offers systematic, novel insight into these dynamics. We focus on the three largest metropolitan areas—Toronto, Montreal, and Vancouver—where historically subsidized housing was primarily although not exclusively located in the urban core and parts of the inner suburbs. Although local conditions vary, access to public transit and particularly the quality of service and frequency is generally highest in the core. It is also commonly deemed insufficient in areas with concentrated lower income populations in the inner suburbs; this is especially observed in Toronto. While employment remains centralized to varying degrees in these three metropolitan regions, nonetheless, employment has generally become more dispersed over time (Moos et al., 2020).

We develop logistic regressions that control for various labour, demographic, housing and metropolitan characteristics to determine whether individuals in subsidized housing have shorter and less auto-oriented commutes than otherwise similar populations, controlling for permanent and monetary income, tenure, gender, metropolitan area, occupation, and other worker characteristics.

We find that those residing in subsidized housing have shorter and less automobile-oriented commutes, as compared to their otherwise similar counterparts (e.g., lower income renters living in non-subsidized housing), at statistically significant levels. The magnitude of the difference is relatively small in terms of commute distance but more substantial in terms of commute mode. We argue that greater reductions in the magnitude of commute distance and automobile use may be possible if subsidized housing and transit is expanded to keep pace with decentralizing urban forms.

Although not entirely surprising, our findings provide another layer of important and novel evidence to help make a case for investment in subsidized housing as both affordability and climate policy (Moos et al., 2018; Nieuwenhuijsen, 2020). Although there is a common mantra for the need to coordinate land use and transportation planning, our work points to the need to coordinate affordable land use and public transportation planning efforts that could simultaneously help address affordability and carbon emission reductions.

Citations

- Been, V., Ellen, I. G., & O'Regan, K. (2019). Supply skepticism: Housing supply and affordability. *Housing Policy Debate*, 29(1), 25-40.
- Moos, M., Vinodrai, T., Revington, N., & Seasons, M. (2018). Planning for mixed use: affordable for whom? *Journal of the American Planning Association*, 84(1), 7-20.
- Moos, M., Vinodrai, T., Walker, R. (Eds.) (2020). *Canadian Cities in Transition: Understanding Contemporary Urbanism*. Oxford University Press: Don Mills, Ontario.
- Nieuwenhuijsen, M.J. (2020). Urban and transport planning pathways to carbon neutral, liveable and healthy cities; A review of the current evidence. *Environment International*, 140, 105661. <https://www.sciencedirect.com/science/article/pii/S0160412020302038#!>
- Wyly, E. (2009). Strategic positivism. *The Professional Geographer*, 61(3), 310-322.

Key Words: subsidized housing, commuting, transportation, affordability, urban form

PARK USE DURING THE PANDEMIC — INVESTIGATING THE RELATIONSHIP BETWEEN PARK USE AND HOUSING CONDITIONS DURING THE COVID-19 LOCKDOWNS IN TORONTO'S ST. JAMES TOWN

Abstract ID: 1484

Individual Paper Submission

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The COVID19 lockdowns magnified the relationship between access to outdoor green space and housing type and tenure, as well as the inequalities embedded in that relationship. Yet, little is known about how citywide COVID19 public park restrictions impact different populations within the housing system, particularly the vulnerably housed, revealing a substantial gap in our understanding. Current academic and policy research on public park use

restrictions disproportionately focuses on individuals experiencing homelessness or privatization of public space. Left unexplored are the experiences faced by low income rental households. This paper addresses this gap, arguing that park use of low income renters in Toronto (Canada) is reflective of, and not separate from, the functions of the housing system.

I use the City of Toronto's COVID19 park restrictions as a case study to examine the relationship between park use and housing experiences, and specifically on St. James Town, a downtown neighbourhood well-documented as the most densely populated neighbourhood in Canada. The neighbourhood embodies three factors (housing tenure, income and ethnicity) most often found to be correlated with housing vulnerability in Toronto and other large North American cities. Drawing upon interviews with neighbourhood residents, as well as analysis of City of Toronto policies, I explore: 1) How do housing conditions inform how low-income rental households in Toronto's St. James Town neighbourhood utilize public park space?; 2) How did public park restrictions implemented in Toronto during the COVID19 pandemic change how residents of St. James Town access and utilize public parks?

Through a literature analysis, I explore a prominent argument, that the public park is one of the last public spaces offering "refuge" for individuals excluded from the housing system, exploring its applicability to low-income rental households. As the experiences of low-income rental households are often overlooked in this debate, my research is well-positioned to offer novel empirical and theoretical insights. Building on this analysis, the interviews with St. James Town residents and former residents offer first-hand accounts of residents' use of public park space within St. James Town, before, during and after the COVID-19 lockdowns. The analysis of City of Toronto planning policy documents and statements demonstrates the integrated relationship between public parks and the high-rise multi-family housing in the city. My analysis of park restrictions is scoped to those that are covered in the City of Toronto's Ombudsman report, looking only at municipal level park by-laws and use of space restrictions, such as the closure of playgrounds and public facilities.

This research provides insight for planners and policy makers into the impacts that universal public health policies have had on vulnerably housed populations within Toronto, a population often underrepresented in planning initiatives. Specifically, the research finds that COVID-19 park restrictions had disproportionate and discriminatory effects on marginalized and vulnerable rental households, offering lessons to planners in Toronto and beyond. Moreover, the findings demonstrate the interconnectedness of housing with parks and other urban infrastructures. Overall the findings reinforce the need to center housing conditions and vulnerably housed populations in urban public policy and planning decisions.

Citations

- August, M., & Walks, A. (2018). Gentrification, suburban decline, and the financialization of multi-family rental housing: The case of Toronto. *Geoforum*, 89, 124-136. doi: 10.1016/j.geoforum.2017.04.011
- Hassen, N. (2021). Leveraging built environment interventions to equitably promote health during and after COVID-19 in Toronto, Canada. *Health Promotion International*. doi: 10.1093/heapro/daab128
- Mitchell, D. (2017). People's Park again: on the end and ends of public space. *Environment And Planning A: Economy And Space*, 49(3), 503-518. doi:10.1177/0308518x15611557
- Ombudsman Toronto. (2021). Ombudsman Toronto Report Enquiry Into The City Of Toronto's Communication And Enforcement Of Covid19 Rules In City Parks In Spring 2020.
- Paradis, E., Wilson, R., & Logan, J. (2021). Nowhere Else to Go: Inadequate Housing & Risk of Homelessness Among Families in Toronto's Aging Rental Buildings. Cities Centre, University Of Toronto. <http://neighbourhoodchange.ca/documents/2014/04/paradis-et-al-2014-nowhere-else-to-go-inadequate-housing-risk-of-homelessness-among-families-in-torontos-aging-rental-buildings-rp231.pdf>

Key Words: public parks, housing, rental housing, COVID19, Housing vulnerability

CLEAR AS REIT MUD: INVESTOR LANDLORDS IN HOUSTON'S FLOODED NEIGHBORHOODS

Abstract ID: 1497

Individual Paper Submission

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Prior research into real estate financialization and consolidation has highlighted how real-estate investment trusts (REIT) like Invitation Homes and American Homes 4 Rent target discounted foreclosed properties at trustee auctions, turning what were once owner-occupied home into rentals, often accelerating racist dispossession. These companies have aggressive eviction practices (Seymour & Akers, 2020), how their technological tools represent a shift in real estate labor practices (Fields, 2019), and their specific racist acquisition strategies in the post-foreclosure context (Raymond et al., 2021).

For this Houston-focused research, I add an important contingency to the analysis of the foreclosure -> REIT -> eviction process: flooding and climate change, which has largely been absent from past research on REITs. Harris County has had at least three 500-year flooding events in the past two decades. In 2017, Hurricane Harvey dropped more rainfall on Harris County than arguably any measured rain event in U.S. history, while Tropical Storm Imelda (2019) and the Tax Day Floods (2016) also caused intense local damage. It remains to be seen how extensive flooding affects REIT purchases and future REIT-led evictions, which this research seeks to answer.

My preliminary research shows high correlation between REIT activity, foreclosures, and municipal utility districts (MUDs), a unique type of Texas local government which, in Harris County, often lack funds for storm sewer improvements. Using in-house parcel-level trustee foreclosure auction and deed recorder data in Harris County, along with parcel-level eviction and FEMA inundation polygon data, this research investigates if flooding is a significant interaction effect for each step of that three-part foreclosure->REIT ownership->eviction process detailed in past research. Findings will inform recommendations for reforming the MUD system, along with pointing towards potential issues (e.g., mold removal) for policymakers to address in the suburban areas where REITs operate.

Citations

- Seymour, E., & Akers, J. (2020). "Our Customer Is America": Housing Insecurity and Eviction in Las Vegas, Nevada's Postcrisis Rental Markets. *Housing Policy Debate*.
<http://www.tandfonline.com/doi/abs/10.1080/10511482.2020.1822903>
- Raymond, E. L., Miller, B., McKinney, M., & Braun, J. (2021). Gentrifying Atlanta: Investor Purchases of Rental Housing, Evictions, and the Displacement of Black Residents. *Housing Policy Debate*, 0(0), 1–17.
<https://doi.org/10.1080/10511482.2021.1887318>
- Fields, D. (2019). Automated landlord: Digital technologies and post-crisis financial accumulation. *Environment and Planning A: Economy and Space*, 0308518X19846514.
<https://doi.org/10.1177/0308518X19846514>

Key Words: Eviction, Foreclosure, Disaster recovery, Houston

PRESERVATION OF AFFORDABLE RURAL RENTAL PROPERTIES BY UNDERSTANDING OWNERSHIP AND PROPERTY MANAGEMENT PATTERNS

Abstract ID: 1523

Individual Paper Submission

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Preservation of rural affordable housing continues to be a pressing policy area due to subsidy expiration, aging properties, encroaching exurban growth, increasing property management challenges, and ownership succession uncertainties. Yet this policy area is largely unexplored, and the potential issues above under-researched. Moreover, the role of owner and property manager concentration and type has been woefully ignored. This research sheds light on these topics by examining why properties exit the US' largest rural affordable rental housing program - USDA Rural Development's Section 515. These properties are a critical, and in some places, the only, source of affordable rental housing in rural communities. The Housing Assistance Council (HAC 2018) found that these properties account for more than 10 percent of the occupied rental stock in 250 counties across 36 states. Moreover, there is significant and growing risk of exit from the program either because owners can exercise a mortgage prepayment option or the Section 515 loans mature without any other subsidy programs mandating ongoing affordability. Another exit factor is the owner's desire to retire (HAC 2018), hence our focus on understanding ownership and management patterns. Some prior work has looked at exits from other US affordable housing subsidies, such as the low-income housing tax credit (LIHTC) and project-based section 8 (Lens and Reina, 2016), the Mitchell-Lama program (NY state affordable housing program) (Reina and Begley, 2014), LIHTC and mortgage-revenue bonds (Blanco et al., 2015). These studies find that properties were more likely to exit if they had high local property appreciation and for-profit ownership (Reina and Begley, 2014), improving lower-opportunity areas (Lens and Reina, 2016), and larger properties and those in weaker markets (Blanco et al., 2015). Only Blanco et al. (2015) include rural properties, but they make up a very small portion of their dataset. Our research builds on this body of work and focuses on the rural case and on including owner / manager characteristics. Combining data from USDA, the National Housing Preservation Database, and the US Census / American Community Survey, we estimate the probability of exiting Section 515 based on property-level, owner / manager-level, and surrounding county-level characteristics. Results indicate the importance of property level characteristics, owner type, manager type, and number of units owned / managed on exit probability. In contrast to expectations, local market trends do not appear to influence Section 515 exit probabilities. Better understanding what drives exits from rural housing subsidies enables clarity in planning for the future of rural affordable housing markets.

Housing Affordability Council (HAC). (2018). "Rental Housing for a 21st Century Rural America: A Platform for Preservation". <http://www.ruralhome.org/sct-information/mn-hac-research/mn-rrr/1618-platformforproduction>

Reina, V., & Begley, J. (2014). Will they stay or will they go: Predicting subsidized housing opt-outs. *Journal of Housing Economics*, 23, 1-16.

Lens, M. C., & Reina, V. (2016). Preserving neighborhood opportunity: Where federal housing subsidies expire. *Housing policy debate*, 26(4-5), 714-732.

Blanco, A.G., Kim, J., Ray, A., Stewart, C., & Chung, H. (2015) Affordability After Subsidies: Understanding the Trajectories of Former Assisted Housing in Florida, *Housing Policy Debate*, 25:2, 374-394, DOI: 10.1080/10511482.2014.941902

Citations

- Reina, V., & Begley, J. (2014). Will they stay or will they go: Predicting subsidized housing opt-outs. *Journal of Housing Economics*, 23, 1-16.
- Lens, M. C., & Reina, V. (2016). Preserving neighborhood opportunity: Where federal housing subsidies expire. *Housing policy debate*, 26(4-5), 714-732.
- Blanco, A.G., Kim, J., Ray, A., Stewart, C., & Chung, H. (2015) Affordability After Subsidies: Understanding the Trajectories of Former Assisted Housing in Florida, *Housing Policy Debate*, 25:2, 374-394, DOI: 10.1080/10511482.2014.941902
- Housing Affordability Council (HAC). (2018). "Rental Housing for a 21st Century Rural America: A Platform for Preservation". <http://www.ruralhome.org/sct-information/mn-hac-research/mn-rrr/1618-platformforproduction>

Key Words: rural, affordable housing, USDA section 515, ownership characteristics, expiring subsidies

CAN 'EXPERIMENTAL GOVERNANCE' RESHAPE HOUSING PRACTICE? PILOTING 'INNOVATION' PROGRAMS IN AUSTRALIA

Abstract ID: 1529

Individual Paper Submission

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Frustration at the stagnation of an already 'broken' housing system has created an environment where experimentation and 'innovation' are seen as pathways to solving entrenched policy problems. In this context, 'experimental governance' has gained popularity across government agencies as a method for developing new solutions to longstanding difficulties by encouraging or enabling 'innovation'. As in the US, the Australian states have often sought solutions to longstanding housing problems through short term and 'innovative' programs. However, some question whether short term 'innovative' housing programs can deliver lasting change; or see claims about 'innovation' as ways to distract from system level policy failure.

This paper examines these themes, with particular emphasis on Australia. Appetite for innovation and experimental methods in the housing space can be seen across all three levels of government in Australia, with the National Government recognition of role of innovation and digital disruption in Australia was highlighted by the release of the Smart Cities Plan in 2016 and local government programs such as the Alternative Housing Ideas Challenge established by the City of Sydney Council. However, it is at the state level where the impact of experimental governance is most explicit, with both state housing policies and state-led programs, such as the Demonstration Housing Project in the Australian Capital Territory and the Future Homes Project in Victoria, exhibiting experimental features.

Experimentation is not a new concept in the housing space but what makes this new version of housing experiments unique is their status as a new method of policy production; the idea of 'hacking' established practice as a precursor to reform (Maalsen 2021). The COVID-19 pandemic has accelerated the 'experimental mood' of governments (McGiurk et al 2021), and this has been evident at the state government level in Australia, demonstrated firstly by the inclusion of experimentation in state housing policies and secondly by the operation of housing experiments outside these policies. This paper reviews these approaches, through an analysis of current state housing strategies and related policies in Australia (released between 2017 and 2021), revealing increasing references and instances of experimentation, extending beyond housing programs to target planning systems. For example, the Australian Capital Territory Housing Strategy released in 2018 connects the outcomes of the existing Demonstration Housing Project and wider policy reform: "the initiative will test future policy direction using real projects to deliver more innovative, sustainable and affordable housing". Comparative case study analysis of three state led housing experiments reveals

unexpected barriers to moving from experimental approaches to genuine policy reform. These barriers include intergovernmental tensions; unclear experiment pathways; stakeholder confusion; lengthy project timelines; and financial constraints. Findings from the Australian context may be pertinent for researchers and practicing planners in the US, where the increasing popularity of policy innovation labs and experimental programs focusing on housing is well documented (see Nesti 2020; Wellstead & Nguyen 2020; Yeganeh et al 2021). Overall, the paper highlights some promise in the recent willingness of state and local governments to disrupt established housing and planning practice, but entrenched obstacles to lasting change.

Citations

- Maalsen, S. (2021). The hack: What it is and why it matters to urban studies. *Urban Studies*, 59(2): 453-465. <https://doi.org/10.1177/0042098020986300>
- McGuirk, P., Dowling, R., Maalsen, S., & Baker, T. (2021). Urban governance innovation and COVID-19. *Geographical Research*, 59: 188– 195. <https://doi.org/10.1111/1745-5871.12456>
- Nesti, G. (2020). Networking and Learning in Urban Living Labs: The Case of the Housing Innovation Lab in Boston. In *Strategies for Urban Network Learning* (pp. 81-98). Palgrave Macmillan, Cham.
- Yeganeh, A., McCoy, A. P., Reichard, G., Schenk, T., & Hankey, S. (2021). Green building and policy innovation in the US Low-Income Housing Tax Credit programme. *Building Research & Information*, 49(5): 543-560. <https://doi.org/10.1080/09613218.2020.1842165>
- Wellstead, A., & Nguyen, S. (2020). *The Rise of Policy Innovation Labs: A Catalog of Policy Innovation in the United States* (1st Edition). <http://dx.doi.org/10.2139/ssrn.3513548>

Key Words: housing, experimental governance, policy reform

BARRIERS TO HOUSING PRODUCTION IN OREGON – TRACKING PERCEPTIONS OF PLANNERS

Abstract ID: 1543

Individual Paper Submission

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National reports from the Urban Institute, Harvard's Joint Center on Housing Studies, and Up For Growth point to a housing crisis – cost burden is rising and housing supply is not keeping up with demand. (Urban Institute, 2017; Harvard Joint Center on Housing Studies, 2021; Up For Growth, 2018) In Oregon, a 2020 analysis by ECONorthwest showed an underproduction gap of 110,000 units. (ECONorthwest, 2020) The lack of housing supply and affordability is an issue facing urban and rural areas alike. While there is robust literature on regulatory barriers to housing, much of the literature focuses on larger metropolitan areas. This study focuses on cities of all sizes in Oregon. In this study, we sought to understand 1) barriers described in academic, industry, and government literature on housing supply; 2) the perception of severity of the housing crisis in Oregon communities; and 3) planner perceptions of barriers to providing housing in their communities.

Our methods include literature review, policy review, and survey analysis. This study relies on survey data from 2017 and 2022 surveys of Oregon City Planning Directors Association email list including all 241 Oregon cities. In 2022, we surveyed market-rate and non-profit developers as well.

The survey includes perception of housing affordability, needed types of housing and barriers to producing housing. In 2017, we received 115 responses for a 48% response rate. The 2022 survey is currently in the field. The 2017 survey results showed that 44 percent of respondents indicated that housing was “more important or much more important” than other issues facing their communities. With respect to housing need, 88% of respondents indicated a “lack of market-rate, family-sized units” and “lack of affordable, market-rate rental units” in their community. Respondents identified a number of perceived barriers to housing affordability including lack of available vacant land (60%), lack of affordable housing provided by developers (59%), high land costs (58%), and lack of development ready land (50%). Infrastructure is an issue in many communities. Funding was the most frequently identified barrier to providing infrastructure (89% of respondents). This research provides insight into the factors affecting housing production and the change in perspectives of planners overtime. Our 2022 survey provides insights into how perceptions vary between planners and developers.

Citations

- ECONorthwest (2020). *Implementing a Regional Housing Needs Analysis Methodology in Oregon: Approach, Results, and Initial Recommendations*. Portland, OR: ECONorthwest
- Joint Center for Housing Studies of Harvard University. (2021). “The State of The Nation’s Housing: 2021” Cambridge, MA: Joint Center of Housing Studies.

- Urban Institute (2017). "The Housing Affordability Gap for Extremely Low-Income Renters in 2014."
- Up for Growth (2018). "Housing Underproduction in the U.S.: Economic, Fiscal and Environmental Impacts of Enabling Transit-Oriented Smart Growth to Address America's Housing Affordability Challenge."

Key Words: regulatory barriers, housing production, housing need, land supply, Oregon

PLATFORM INFORMALITY? UNDERSTANDING MARGINAL HOUSING SUBMARKETS IN AUSTRALIA

Abstract ID: 1587

Individual Paper Submission

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Digital, real estate platforms or 'PropTech' (Shaw 2020) are increasingly mediating how people seek and access housing (Boeing, Besbris et al. 2021, Ferreri and Sanyal 2021). They offer powerful tools for property owners, landlords, agents, and tenants, to market and search for accommodation meeting particular criteria – from price and tenure to dwelling and characteristics and location. The rise of online platforms has also seen new housing practices emerge, transforming once 'analogue' processes associated with finding a share home, or offering 'rooms to let', into an increasingly segmented, digital market place where users offer or seek a vast range of accommodation. Recognising that the increasingly fragmented ecology of real estate platforms targets distinct market segments (Costa, Sass et al. 2021), we uncover these diverse housing practices in this paper, through a detailed analysis of four digital, real estate platforms and the data they generate.

Our study is situated in Australia, where sustained house price inflation and a chronic shortage of affordable housing, offers an instructive context in which to examine how housing platforms are increasingly catering to those unable to access 'formal' rental markets. In Australia, as internationally, share housing has become increasingly prevalent as has dependence on marginal forms of accommodation, where conventional regulatory tenancy protections or housing standards are often traded for lower cost 'informal' accommodation (Harris 2018). Focusing on three of Australia's major cities (Sydney, Melbourne, and Brisbane), and examining over 40,000 property listing advertisements placed on Realestate.com.au, Flatmates.com.au, Gumtree.com.au and Airbnb.com; we unearth a housing system 'substructure' of informal dwellings, tenures, and landlords. The differences across these platforms and the range of listings and information they contain, necessitated mixed methods of data collection, combining automated web scraping as well as detailed manual extraction and review of listings texts and images; and GIS based spatial analysis.

With inadequate provision of social housing or rental subsidy for those on lower incomes, dependence on marginal, insecure and inadequate housing raised particular concerns in the context of the COVID-19 Pandemic. Our analysis showed that demand for informal housing advertised via online platforms persisted through the Pandemic period despite the closure of international borders, revealing deep unmet housing need and the importance of these often overlooked segments of the housing market.

Overall, our study shows that beyond the conventional housing units offered for sale and rent within the parameters established by planning and property regulation, platforms have enabled and exposed a vast 'substrata' of housing practices ranging from forms of self-organised share households and informal rental leases to illegally constructed units, subdivided apartments, and bed rentals on the one hand, and residential tourist accommodation on the other. Our findings have varying implications for platform users and wider urban systems. They raise dilemmas for planners and local officials seeking to enforce residential amenity and standards, including the basic health and safety provisions critical to protect vulnerable and low-income renters, in the absence of wider housing system reform.

Citations

- Boeing, G., M. Besbris, A. Schachter and J. Kuk (2021). "Housing Search in the Age of Big Data: Smarter Cities or the Same Old Blind Spots?" *Housing Policy Debate* 31(1): 112-126.
- Costa, A., V. Sass, I. Kennedy, R. Roy, R. J. Walter, A. Acolin, K. Crowder, C. Hess, A. Ramiller and S. Chasins (2021). "Toward a Cross-Platform Framework: Assessing the Comprehensiveness of Online Rental Listings." *Cityscape* 23(2): 327-339.
- Ferreri, M. and R. Sanyal (2021). "Digital informalisation: rental housing, platforms, and the management of risk." *Housing Studies*: 1-19.
- Harris, R. (2018). "Modes of Informal Urban Development: A Global Phenomenon." *Journal of Planning Literature* 33(3): 267-286.

- Shaw, J. (2020). "Platform Real Estate: theory and practice of new urban real estate markets." *Urban Geography* 41(8): 1037-1064.

Key Words: Housing, Informality, Platforms

USING MACHINE LEARNING APPROACHES TO EXPLORE THE ASSOCIATION BETWEEN ACTIVE TRAVEL AND AIRBNB LISTING PRICE

Abstract ID: 1599

Individual Paper Submission

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A growing number of studies have investigated the influence of housing developments, Airbnb reviews, neighborhood and locational characteristics on Airbnb pricing. However, these studies only partially captured neighborhood and locational features by evaluating distance to popular destinations and nearby transit and crime rates. To address this research gap, the research question of this study is how will neighborhood characteristics including walkability, bikeability, transit accessibility and crime data (arrest counts) impact Airbnb pricing in New York City (NYC). Exploring the implications these neighborhood characteristics would enable city officials to make better policy in urban planning. Methods: Previous analyses often use regression or other basic statistical methods to analyze Airbnb listing price, this study will use machine learning approaches such as gradient boosting, extreme gradient boosting and random forest. This study will also use regression model as a baseline method for comparison. Through these advanced algorithms, this study produces better model fitness and more accurate feature importance analytic results than traditional feature evaluation schemes. Key Findings: For all the models besides linear regression, the most important variable is zip code. In contrast, the indicator variables for boroughs have the lowest importance levels for all models. The most important variable for linear regression is bike score; Bike score is the second most important variable for all the other models. And through our exploratory data analysis, we knew that bike score, walk score and transit score are highly positively correlated. This indicates that transit functions and flexibilities do impact room listing prices on Airbnb. The third important variable used by the three machine learning algorithms is arrest count. This means that in addition to transit functions, safety is another key consideration for customers when booking a room on Airbnb. The result of this study identifies the positive effects of walkable environments in promoting sharing economic benefit and inform planners and policy makers of the unmet demand for walkable community design. The policy makers should consider the potential impact of walkability on the sharing housing economy during the policy formulation. The result of this study could benefit real estate investors to explore the housing availability in walkable communities in the real estate market.

Citations

- Teubner, T., Hawlitschek, F. and Dann, D., 2017. Price determinants on Airbnb: How reputation pays off in the sharing economy. *Journal of Self-Governance and Management Economics*, 5(4), pp.53-80.
- Zhang, Z., Chen, R.J., Han, L.D. and Yang, L., 2017. Key factors affecting the price of Airbnb listings: A geographically weighted approach. *Sustainability*, 9(9), p.1635.
- Cai, Y., Zhou, Y. and Scott, N., 2019. Price determinants of Airbnb listings: evidence from Hong Kong. *Tourism Analysis*, 24(2), pp.227-242.

Key Words: Housing, Active transportation, Neighborhood, Machine learning

"THEY'RE JUST TRYING TO SURVIVE": THE RELATIONSHIP BETWEEN SOCIAL VULNERABILITY, INFORMAL HOUSING, AND ENVIRONMENTAL RISKS IN LOIZA, PUERTO RICO, USA

Abstract ID: 1609

Individual Paper Submission

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Socially vulnerable households across the earth tend to live in informal settlements, which also tend to be in areas that might experience flooding. Given that climate change is leading to more frequent and devastating flooding events, this study asks what is the relationship between informal housing, social vulnerability, and environmental hazards in the context of a U.S. territory? Although most research on this topic has concentrated in the Global South, there are no studies within the U.S. disaster management system on these topics—primarily because informality is heavily understudied in the United States. With the purpose of understanding the connection we conducted a qualitative analysis of 28 interviews with stakeholders working on different facets of disaster recovery and mitigation in Loiza, Puerto Rico. The finding suggest that changes need to be made about how local and federal government entities such as the Federal Emergency Management Agency approach informal housing (e.g., not as illegal but as a

practice of those “just trying to survive” as an informant put it). It is also important for planners and other decision makers to educate the population and provide financial assistance so that long-term risks could be reduced without displacing the local population.

Citations

- García, I. (2021). Deemed Ineligible: Reasons Homeowners in Puerto Rico Were Denied Aid After Hurricane María. *Housing Policy Debate*, 0(0), 1–21. <https://doi.org/10.1080/10511482.2021.1890633>
- Mejía Manrique, S. A., Harmsen, E. W., Khanbilvardi, R. M., & González, J. E. (2021). Flood Impacts on Critical Infrastructure in a Coastal Floodplain in Western Puerto Rico during Hurricane María. *Hydrology*, 8(3), 104. <https://doi.org/10.3390/hydrology8030104>
- Jean-Baptiste, N., Olivotto, V., Porio, E., Kombe, W., & Yulo-Loyzaga, A. (2018). Housing and informal settlements. In *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network* (pp. 399–440).
- Algoed, L., & Torrales, M. H. (2019). The Land is Ours. Vulnerabilization and resistance in informal settlements in Puerto Rico: Lessons from the Caño Martín Peña Community Land Trust. *Radical Housing Journal*, 1(1), 29–47.
- Rivera, D. Z. (2019). Fighting FEMA: Urban Informality and Disaster Response in Rio Grande Valley Colonias. Lincoln Institute of Land Policy. https://www.lincolninst.edu/sites/default/files/pubfiles/2019_descriptive_fighting_fema_rivera.pdf

Key Words: informal settlements, flooding, climate change, social vulnerability, disaster mitigation

BROADENING EQUITABLE PLANNING: UNDERSTANDING INDIRECT DISPLACEMENT THROUGH SENIORS' EXPERIENCES IN A RESURGENT DOWNTOWN DETROIT

Abstract ID: 1610

Individual Paper Submission

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As shrinking cities implement regeneration initiatives to recover from years of economic and population decline, planners have been struggling with how to promote more equitable development, such as ‘revitalization without displacement’. Yet, this approach often focuses on mitigating physical or direct displacement and often neglects to consider indirect displacement, which represents an under-theorization of displacement processes. Despite the large body of research, some scholars (e.g., Davidson, 2009) argue that displacement processes are still not well understood. Elliot-Cooper et al (2019) further argue that displacement is in danger of becoming a “‘chaotic’ concept: a notion that actually obscures as much as it reveals” (p. 3). Displacement is most commonly conceptualized as forced relocation or dislocation due to physical or economic reasons. However, this conceptualization reduces displacement to a simple spatial moment in time which strips out the social relations that produce that space (Davidson, 2009), and overlooks indirect forms of displacement. Yet, indirect displacement holds serious implications for equitable planning initiatives that seek ‘revitalization without displacement’, as these initiatives tend to only address physical dislocation. Incorporating a better understanding of the different dimensions of displacement will help inform equitable development efforts that are more inclusive and just.

Research has also tended to focus on the class-based dimensions of gentrification, with little focused attention on how age factors into this process and specifically how low-income older adults are affected by the process (Garcia and Rua, 2018). A body of work has examined indirect displacement by documenting the lived experiences of non-gentrifying residents who manage to ‘stay put’ in rapidly changing areas (e.g., Cahill, 2007). However, only a few studies have explored senior tenant perspectives (e.g., Weil, 2019). While these studies do call attention to the need for additional neighbourhood supports to accompany affordable ‘aging in place’ strategies, they do not examine how a better understanding of non-spatial forms of displacement could help inform equitable development approaches.

This paper examines the displacement effects of redevelopment initiatives in Detroit by exploring senior tenant experiences with indirect displacement in a rapidly gentrifying downtown neighborhood. These older adults reside in government-assisted housing and thus have managed to remain in place amidst intense redevelopment. By documenting how gentrification is experienced in quotidian ways by older adults, we can better understand the impacts of gentrification on seniors, which has been underexplored in the literature. In so doing, this research seeks to inform planning practice by incorporating a broadened conception of indirect forms of displacement in the design of more equitable planning interventions that can bring about a more just city.

Using a case study approach to deepen our understanding of how indirect displacement occurs and is experienced by older adults in a resurgent downtown Detroit, this paper addresses the following questions: (1) What are senior tenant experiences living in a rapidly gentrifying downtown?; (2) How can a better understanding of ‘perspectives from below’ concretely inform an equitable planning approach to proactively address indirect displacement? Based on

in-depth qualitative interviews and participant observation, the findings illustrate the material ways in which seniors have experienced indirect displacement through feelings of exclusion and non-belonging, diminishing social space, and fears of direct displacement – all of which contribute to an on-going loss of sense of place. These experiences suggest a diminishing ability to create place for some, which reduces their ability to assert their right to the city.

Citations

- Cahill, C. (2007). Negotiating grit and glamour: Young women of color and the gentrification of the Lower East Side. *City & Society* 19(2): 202-231.
- Davidson, M. (2009). Displacement, Space and Dwelling: Placing Gentrification Debate. *Ethics, Place and Environment* 12(2): 219-234.
- Elliot-Cooper, A., Hubbard, P. and Lees, L. (2019). Moving beyond Marcuse: Gentrification, displacement, and the violence of un-homing. *Progress in Human Geography*. Epub 24 February 2019. DOI: 10.1177/0309132519830511.
- Garcia, I. and Rua, M. (2018). 'Our interests matter': Puerto Rican older adults in the age of gentrification. *Urban Studies* 55(14): 3168-3184.
- Weil, J. (2019). Relationship to Place for Older Adults in a New York City Neighborhood Undergoing Gentrification: A Discourse Analysis. *City & Community* 18(4): 1267-1286.

Key Words: gentrification, indirect displacement, seniors' experiences, shrinking cities, right to the city

THE CRISIS IN AFRICAN-AMERICAN HOMEOWNERSHIP: MAGNITUDE, VARIATION, AND DIRECTIONS FORWARD

Abstract ID: 1612

Individual Paper Submission

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In 2020, the homeownership rate for African Americans was almost as low as it was in 1968, when the Fair Housing Act passed, banning discrimination based on race in private real-estate transactions. After a marked increase in the 1970s, Black homeownership declined in the 1980s, but bounced back in the 1990s to its highest level in the 20th century (Freeman 2005).

Since 2000, however, the favorable conditions of the 1990s have reversed. Incomes of Black Americans stalled in the 2000s even as the incomes of whites, Hispanics, and Asians declined. Mortgage sellers targeted Black neighborhoods with high-risk loans—including some clearly predatory ones—to established homeowners, leading many families to lose the only equity they had as housing values stalled and then plummeted in the market collapse of 2008 (Immergluck 2011). Younger households who had only recently attained homeownership, too, lost their homes disproportionately. What's more, whereas white, Hispanic, and Asian homeownership rates have recovered, Black homeownership rates have continued to lag. Consequently, hundreds of thousands of Black families will now see their elders enter retirement age as renters when they might otherwise be homeowners; hundreds of thousands of Black children and youth are growing up in homes their parents rent, whereas they might have become homeowners. This tragic retrocession exposes families to greater housing instability and housing poverty and bars access to countless neighborhoods where, if they had been homeowners, they might be able to choose.

When this story has been told, it has been largely from a national perspective (but with some exceptions, e.g., Flippen 2010). But while national policy clearly matters for the future of Black homeownership, state and local actions can also make a difference both for attainment and for retention of homeownership (see for example Phillips 2021 on policies relevant to the Detroit housing market). This paper makes a start at an intra-US comparison by reviewing the national story of Black homeownership from 1970 to 2020 but then looking more deeply at more recent regional trends in the metropolitan areas with the highest numbers of Black households. I will consider how these regions differ in their homeownership attainment (i.e., net transitions of younger Black households from renting to owning) and retention (i.e., net transitions of older Black households from owning to renting), which relate to one another but respond to different policy instruments (Ren 2020). After providing a broad overview of how these regions compare in their growth rates, incomes, nativity, age structures, and residential segregation (with no plans at present of conducting multivariate analysis), I will then compare two regions at the extremes: one in which Black homeownership remains closest to year-2000 levels and one in which Black homeownership stands well below year-2000 levels. These comparisons (both the broader and shallower one and 2-metro comparison) will set the stage for future research on state and local policies that may have mattered for homeownership attainment and retention.

Citations

- Flippen, C. A. (2010). The spatial dynamics of stratification: Metropolitan context, population redistribution, and black and Hispanic homeownership. *Demography*, 47(4), 845-868.
- Freeman, L. (2005). Black homeownership: The role of temporal changes and residential segregation at the end of the 20th century. *Social Science Quarterly*, 86(2), 403-426.
- Immergluck, D. (2011). *Foreclosed*. Cornell University Press.
- Phillips, R. (2021). Reviving a mortgage market through financial inclusion? Experimental housing governance and alternative home loan programmes in Detroit, Michigan. *International Journal of Housing Policy*, 21(4), 559-591.
- Ren, C. (2020). A framework for explaining Black-White inequality in homeownership sustainability. *Demography*, 57(4), 1297-1321.

Key Words: Homeownership, Black or African American, Regional differences

STABLE MIXED-INCOME NEIGHBORHOODS AND THE ROLE OF PLANNING AND HOUSING POLICY: A COMPARATIVE CASE STUDY

Abstract ID: 1617

Individual Paper Submission

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Mixed-income neighborhoods have long been proposed as a policy ideal that contrasts with the racial and economic segregation that characterizes much of metropolitan United States. However, scholars of neighborhood change have theorized and empirically shown that, while poor and affluent neighborhoods tend to persist, mixed-income neighborhoods tend to transition into either low- or high-income neighborhoods, exiting their status as mixed income. However, stable mixed-income neighborhoods (SMINs) do exist in the U.S. This paper uses a case study approach to build on a prior paper, which assesses neighborhood income diversity and identifies SMINs in the 100 largest metropolitan statistical areas in the U.S., and addresses the following research question: How have stable mixed-income neighborhoods maintained their economic diversity over time, and what is the role of planning and housing policy?

Employing an embedded two-case study design, this paper focuses on San Francisco, CA, and Alexandria, VA, as the two case study sites, which were selected primarily based on their high shares of SMINs from 1990 to present and secondarily based on other factors of comparison such as differing regions, racial compositions, population sizes, and economies. The paper interrogates the various theorized drivers of stable neighborhood economic diversity--from historical and current housing and planning policy at the city level, to housing market and community dynamics at the neighborhood level--through the triangulation of multiple types of data. Specifically, the paper relies on the analysis of historical and current city plans and zoning ordinances and other relevant archival data, as well as in-depth semi-structured interviews with city planning departments, community development organizations and organizers, and real estate professionals.

In terms of analytic strategy, the case study is guided by the theoretical proposition that neighborhood income diversity is influenced by policy interventions, including local planning and housing policy and other urban programs such as affordable housing. This proposition not only reflects what scholars theorize as drivers of income-mixing and/or economic segregation in neighborhoods, but also belies the hope that, indeed, some policy interventions make a meaningful difference on the socio-spatial landscape and can be effectively leveraged for this purpose in the future. Against the study's null hypothesis that the observed stable income diversity in neighborhoods is a chance occurrence, the case study's expected findings include both converging and diverging narratives between San Francisco and Alexandria--some core similarities surrounding land use policies and affordable housing approaches and other differences shaped by dissimilar planning and market contexts. Ultimately, the analysis and findings provide theoretical and empirical insights into neighborhood change, income mix, and the various policies that influence both, with implications for planning practice.

Citations

- Galster, G. C., Booza, J. C., & Cutsinger, J. M. (2008). Income diversity within neighborhoods and very low-income families. *Cityscape*, 10(2), 257-300. JSTOR.
- Tach, L. M. (2010). *Beyond Concentrated Poverty: The Social and Temporal Dynamics of Mixed-Income Neighborhoods* [Ph.D., Harvard University]. <http://search.proquest.com/docview/733013023/abstract/FC8E22C4DCCB4F66PQ/1>
- Talen, E. (2006). Neighborhood-level social diversity: Insights from Chicago. *Journal of the American Planning Association*, 72(4), 431-446. <https://doi.org/10.1080/01944360608976764>
- McKinnish, T., & White, T. K. (2011). Who moves to mixed-income neighborhoods? *Regional Science and Urban Economics*, 41(3), 187-195. <https://doi.org/10.1016/j.regsciurbeco.2011.01.007>

Key Words: mixed-income, neighborhood change, housing policy, segregation, social mix

EVALUATING THE IMPACTS OF WILDFIRES ON HOME VALUES IN WUI COMMUNITIES IN CALIFORNIA

Abstract ID: 1621

Individual Paper Submission

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Climate change is causing record-breaking wildfires in the western United States, especially in California. According to the California Department of Forestry and Fire Protection (CAL FIRE, n.d.), eight of the ten largest wildfires in California's history have occurred since 2016. Wildfires cause significant loss of lives and properties and sky-rocketing fire suppression costs in the wildland-urban interface (WUI) areas. Wildfires can hurt property values in WUI and nearby communities as they are perceived to be unsafe and insurance companies charge higher premiums and, in some cases, decline to write insurance policies (Kiel, 2021).

The objective of this study is to quantify the impacts of wildfires on home values in California from 2016 to 2020. This study will adopt a quasi-experimental design to evaluate the impacts of wildfires on property values in California's WUI communities. We consider the occurrence of wildfires as a treatment and the communities that experienced wildfires as a treatment group. We then use propensity-score matching method to identify similar Californian communities as a control group. The communities in the treatment and control groups are almost identical except that the treatment group experienced wildfires in the study period while the control group did not. This research design allows us to estimate the impacts of wildfires on home values by comparing the changes of home prices in the treatment and control groups before and after a wildfire event.

The impacts of the wildfires will be estimated through staggered difference-in-difference and event-study models based on a 10-year (2011-2020) panel data set. The key outcome variable in the model is home prices, which can be measured by the monthly Zillow home value index (ZHVI) data, which are free to download. ZHVI is measured at aggregated spatial scales and the finest spatial scale is ZIP code. The information about the wildfires can be downloaded from CAL FIRE's website. The variables that describe community socio-economic characteristics can be measured by the Census data that are publicly available.

Population and housing in California's WUI communities will continue to grow quickly (Radeloff et al., 2018). The results of this study will provide an updated and much needed estimate of the impacts of wildfires on property values and municipal budgets based on the evidence from several recent record-breaking wildfires in California. They will also help WUI communities in California to re-assess the demand for housing and land in the future.

Citations

- CAL FIRE (California Department of Forestry and Fire Protection). (n.d.). Top 20 largest California Wildfires. Accessed on September 23, 2021: https://www.fire.ca.gov/media/4jandlhh/top20_acres.pdf
- Kiel, K.A. (2021). Climate Change Adaptation and Property Values: A Survey of the Literature (Working Paper WP21KK1). Lincoln Institute of Land Policy.
- Radeloff, V.C., Helmersa, D.P., Kramera, H.A., Mockrinb, M.H., Alexandrea, P.M., ... Stewart S.A. (2018). Rapid growth of the US wildland-urban interface raises wildfire risk. *PNAS*, 115(13): 3314-3319.

Key Words: Wildfire, home value, climate change, staggered difference-in-difference, event study

CENTERING NON-MARKET HOUSING IN MUNICIPAL AFFORDABLE HOUSING POLICY FOR AN INCLUSIVE CITY

Abstract ID: 1643

Individual Paper Submission

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In responding to the deteriorating housing affordability in both Canada and the United States, federal, provincial/state and municipal governments are focusing their policy interventions primarily on the market segment of the housing system. Regulations, incentives and subsidies to stimulate market supply are being introduced on the premise that producing more market housing will improve general affordability (Blumenthal et al., 2016). However, a growing body of research supports the proposition that continuing to expand the supply of market housing will not result in a sufficient stock of affordable housing, and that the non-market sector is central to a sustainable, long-term plan for a sufficient supply of permanently affordable housing tailored to all incomes (Underkuffler, 2020).

Alongside the continuing dependence by governments on market mechanisms to produce affordable housing, proposals for expanding the stock of non-market housing in solutions to address the growing affordability crisis are gaining prominence in policy debates, in public discourse, and in government policies aimed at building the capacity of the non-market housing sector (Been et al., 2019). California's proposed Social Housing Act, aiming to create a state housing authority mandated to produce housing for all incomes on a mixed-income model, and Canada's 2017 National Housing Strategy, providing funding to protect and expand community-owned social housing stock, are two examples of recent senior government policy action. At the local government level, many municipalities are adopting a wide range of approaches to enable non-market housing, often in innovative ways.

This paper examines the place of non-market initiatives in municipal affordable housing policy in Canada, with comparative references to municipalities in the U.S. and other countries. It is an inquiry into policy directions for municipal affordable housing planners who recognize the strategic importance of permanently affordable non-market housing within a vision of an inclusive city. The focus is on two types of municipal policy interventions to create, enable and protect non-market housing. One type comprises: measures that support the non-profit housing sector; financing tools that involve new kinds of partnerships and new funding sources; and municipal land management strategies that secure public land for non-market housing. An example of these land management strategies is found in innovative applications of the 'right of first refusal,' such as its expanded use for municipal acquisition of properties for social housing (Montreal and Barcelona) and for empowering qualified non-profit housing developers to acquire sites for social housing (San Francisco). The second type of municipal non-market policy interventions comprises three specific tools that are commonly associated with generating new market housing, but which are being applied innovatively by some municipalities and their community partners to generate non-market housing. The first tool is inclusionary zoning, being used by Montreal to require a mix that includes 20 percent social housing; the second is zoning densification, being used by Cambridge (MA) to generate permanently affordable non-market housing for tenants with below-media income; and the third is shared-equity ownership housing, being used by Whistler (B.C.) to create an expanding pool of permanently affordable, price-restricted non-market housing for ownership (Eberle et al., 2011; Mah & Hackworth, 2011).

The research suggests that sharing lessons from the growing body of municipal experience in expanding non-market housing stock could deepen understanding of the strategic importance of non-market housing as a source of permanently affordable housing. This analysis of innovative local government strategies to expand the supply of non-market housing forms part of doctoral research into proposals for systemic reform of Canada's housing system.

Citations

- Been, V., Ellen, I. G., & O'Regan, K. (2019). Supply skepticism: Housing supply and affordability. *Housing Policy Debate*, 29(1), 25-40.
- Blumenthal, P. M., McGinty, J. R., & Pendall, R. (2016). Strategies for increasing housing supply in high-cost cities. Urban Institute Policy Advisory Group, 1-35. https://center4affordablehousing.org/wp-content/uploads/2019/07/2000907-strategies-for-increasing-housing-supply-in-high-cost-cities-dc-case-study_2.pdf
- Eberle, M., Woodward, J., Thomson, M. & Kraus, D. (2011). Municipal measures for housing affordability and diversity in Metro Vancouver. Central Mortgage and Housing Corporation. <https://fraseropolis.files.wordpress.com/2016/10/2011-eberle-municipal-housing-measures.pdf>
- Mah, J., & Hackworth, J. (2011). Local Politics and Inclusionary Housing in Three Large Canadian Cities. *Canadian Journal of Urban Research*, 20(1), 57–80.
- Underkuffler, L. (2020). In Search of Affordable Housing: How Deregulatory Strategies Fail the Poor. *Brigham-Kanner Property Rights Conference Journal*. 9, 227-248.

Key Words: social housing, affordable housing policy, non-market housing

AN ANALYSIS OF HOUSEHOLD OUTCOMES AFTER LEAVING FEDERALLY ASSISTED HOUSING IN MULTNOMAH COUNTY, OREGON

Abstract ID: 1644

Individual Paper Submission

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Due to limited resources, only a subset of low-income households that are fortunate enough to reach the top of the lengthy waiting list after years can receive subsidies (Turner and Kingsley 2008). Indeed, a recent empirical study discovered that the median duration of households receiving housing assistance is only three years for those in public housing and 4.8 years for voucher holders (McClure, 2017). However, families receiving federal housing aid

frequently exit the program for a variety of reasons, some voluntary or some involuntary. Since most households receiving housing assistance are extremely low-income, and housing is the largest expense for the majority of families, those who exit the assistance program may face economic hardship and housing instability due to increased housing costs in the absence of subsidies.

While myriad aspects of housing assistance programs have been studied, studies on housing assistance departures continue to paint an incomplete picture of why households leave and how those families fare afterward, given the subsidy's open-ended nature (Smith et al., 2015). Only a few studies have examined economic and housing outcomes in order to determine whether those who leave are actually better off or face housing instability (Smith et al., 2015; Kang, 2021).

This research examines the characteristics and experiences of families who left Home Forward, Public Housing Authority of Multnomah County, Oregon, from 2009 to 2021 through a racial equity lens, with the following research question: How does the economic outcome of households that left voluntarily compare with those of households that left involuntarily? The study takes advantage of the longitudinal dataset by combining Home Forward participant data with employment data from the Oregon Employment Department and self-sufficiency data from the Oregon Department of Human Services. This study explores racial disparities in a variety of outcomes for assistance leavers: economic mobility, employment stability, and participation in and engagement with self-sufficiency programs. In addition, this study investigates the associations between economic mobility outcomes and exit type by assistance programs.

The findings contribute to our understanding of what happens when families leave public housing assistance, with a focus on racial equity. Because re-entering housing assistance after leaving it is complicated, families who leave the program need extra care to prevent sliding into extreme poverty again. This research will provide insight into how to improve housing assistance programs and policies to support families that leave or lose their assistance by providing a safety net for economic mobility and housing stability. In addition, the research will highlight racially equitable strategies with a more focused approach that can mitigate racial gaps in economic outcomes of households at risk of leaving based on the exit type.

Citations

- Turner, M. A., & Kingsley, T. (2008, December). Federal Programs for Addressing Low-Income Housing Needs. Washington, DC: Urban Institute. <https://www.urban.org/research/publication/federal-programs-addressing-low-income-housing-needs>
- Smith, R. E., Popkin, S., George, T., & Comey, J. (2014, June). What Happens to Housing Assistance Leavers? (No. 27). Low-Income Working Families Paper. https://www.huduser.gov/portal/oup/pdf/hsg_asst_leavers_rpt.pdf
- https://www.huduser.gov/portal/oup/pdf/hsg_asst_leavers_rpt.pdf Kang, S. (2020). To Whom Do Housing Policies Provide Stable Housing? Examining Housing Assistance Recipients and Leavers. *Urban Affairs Review*, 57(5), 1252–1285. <https://doi.org/10.1177/1078087420906203>
- McClure, K. (2017). Length of Stay in Assisted Housing. Washington, DC: U.S. Department of Housing and Urban Development. <https://www.huduser.gov/portal/sites/default/files/pdf/lengthofstay.pdf>

Key Words: Housing assistance leavers, Racial equity, economic outcome

DOES DISCRETION DELIVER DELAY? IMPACT OF HOUSING APPROVAL PATHWAYS ON TIME TO PERMIT

Abstract ID: 1649

Individual Paper Submission

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Local governments often approve multifamily housing through a discretionary process: a public body must vote to entitle the proposal before it can seek a building permit. By-right entitlement, in contrast, allows developers to apply directly for a building permit.

This article tests the hypothesis that by-right approvals are faster. Faster approval can make multifamily development more feasible, which can in turn improve housing affordability. Approval pathways are often endogenous to project size and complexity, but we exploit a provision in the Los Angeles Transit Oriented Communities (TOC) program that allowed many large projects to use as-of-right approval. Using data from roughly 350 multifamily projects permitted in Los Angeles from January 2018 through March 2020, we compare approval timelines for both by-right and

discretionary projects.

We find that by-right projects are permitted 28% faster than discretionary projects, controlling for project and neighborhood characteristics. By-right projects also have less variance in their approval times, suggesting that by-right approval offers not just more speed but more certainty.

We conclude that planners should create more opportunities for multifamily housing to be permitted by-right. In spite of some selection bias in our study, the TOC program in Los Angeles shows that creating a by-right option can substantially benefit housing production. Its faster approval timelines have been accompanied by an increase in average project size and the number of units reserved for low-income households.

Citations

- Altshuler, A. A., & Gomez-Ibanez, J. A. (1993). *Regulation for revenue: The political economy of land use exactions*. Brookings Institution Press.
- Booth, P. (1995). Zoning or discretionary action: certainty and responsiveness in implementing planning policy. *Journal of Planning Education and Research*, 14(2), 103-112.
- Manville, M., & Osman, T. (2017). Motivations for growth revolts: Discretion and pretext as sources of development conflict. *City & Community*, 16(1), 66-85.

Key Words: discretionary review, by right approval, land use regulation, housing

UNFOLDING THE DISCOURSE ON PATHWAYS INTO HOMELESSNESS: IMPLICATIONS FOR RESEARCH SCHOLARSHIP AND POLICY INTERVENTIONS

Abstract ID: 1657

Individual Paper Submission

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Homelessness has become a seemingly intractable challenge worldwide, particularly in the United States and Canada. In response to the growing concerns over homelessness, research efforts have investigated the root causes of homelessness in order to identify best practices and program interventions to reduce homelessness and improve the lives of individuals experiencing homelessness. Conceptualizations of the causes of homelessness often rest on the socio-ecological model, which posits that homelessness has essentially emerged as the outcome of a complex and intricate interplay between individual/relational risk factors (e.g., family conflicts, exposure to violence) (Nooe and Patterson 2010), structural determinants (e.g., poverty, unemployment, lack of affordable housing) (Piat et al. 2015), and system(s) failures (e.g., ineffective policy and service delivery programs) (Gaetz and Dej 2017). These factors together play a profound role in the people's lived experiences of marginalization and homelessness.

However, accounts that solely focus on either individual pathology or structural factors appeared to have received criticism: critics argue that the attempts to frame individual factors within larger social and economic structures are underspecified, rest mostly on 'epidemiological' approaches, and that homelessness in the terms of social realist theory lacks an understanding of the fact that homelessness is socially constructed (Somerville 2013). Therefore, the pathways approach is argued to better reflect individual journeys into homelessness, considering the social construction of homelessness in which homelessness is understood as an episode or sequential events experienced in the larger context of a subject's life with a lived experience of homelessness (Clapham 2003; 2005; Somerville 2013).

This paper, building upon the scholarly contributions made by the pathways approach to homelessness, discusses how the pathways discourse departs from previous approaches and introduces the characteristics of the pathways approach that have remained largely unincorporated into the mainstream research and practice. Specifically, focusing on the social construction of homelessness, this paper treats temporality as a critical factor in the pathways approach and delves into the question of "how" the complex interaction between individual and structural factors contribute to and sustain homelessness—as opposed to a mere focus on "what" factors cause homelessness. This paper concludes that the pathways approach can contribute to research and practice on homelessness in two ways: First, by investing in the pathways approach, quantitative analyses can be supplemented by in-depth, qualitative interviews that chart individuals' life histories to inform current policy responses through the inclusion of a greater spectrum of culturally driven solutions to homelessness. Second, on the policy front, the pathways approach provides policymakers with knowledge about how and when intervention programs can work best. This requires an understanding that individuals experiencing homelessness are diverse and thus proposing culturally informed strategies, particularly for increasingly overrepresented youth subpopulations who are homeless including Indigenous and LGBTQ2S groups, is warranted.

Citations

- Somerville, Peter. 2013. "Understanding Homelessness." *Housing, Theory and Society* 30 (4): 384–415.
- Gaetz, Stephen, and Erin Dej. 2017. *A New Direction: A Framework for Homelessness Prevention*. Toronto, ON: Canadian Observatory on Homelessness Press.
- Nooe, Roger M., and David A. Patterson. 2010. "The Ecology of Homelessness." *Journal of Human Behavior in the Social Environment* 20 (2): 105–52.
- Clapham, David. 2003. "Pathways Approaches to Homelessness Research." *Journal of Community and Applied Social Psychology* 13 (2): 119–27.
- Clapham, David. 2005. *The Meaning of Housing: A Pathways Approach*. Bristol: Policy Press.

Key Words: Homelessness, Pathways, Housing, Marginalization

THE ROLE OF NIMBYISM IN LOS ANGELES PRESERVATION POLITICS

Abstract ID: 1659

Individual Paper Submission

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The nexus between historic preservation and anti-development Not In My Backyard (NIMBYism) is rooted in the application of preservation tools like local historic districts that manage the built environment. In local political discourse, these arguments often manifest as a combination of protecting existing historic resources from demolition and keeping out "incompatible development" (Buckman, 2011). Assumptions about what is valued as worthy of preservation underlie the practice of creating local historic districts, which in the U.S. context is widely driven by the National Register of Historic Place's 50-year threshold and an overwhelming focus on aesthetic standards tied to the architectural significance of buildings. This framework for determining what is historic is rooted in racism and classism, with White, upper-class narratives dominating what is deemed historically significant (Saito, 2009). Local historic districts are also critiqued from a land-use deregulation standpoint with economists pointing to their role in limiting new development and thereby constraining housing supply and increasing prices (Glaeser, 2012). However, historic districts can also be deployed as a means of halting the teardown-redevelopment cycle to protect incumbent residents in rapidly gentrifying neighborhoods (Podagrosi, Vojnoic, & Pigozzi, 2011; Ryberg-Webster, 2019) or preserving the existing urban fabric of smaller, affordable homes in (Abrams, 2016).

In this paper, we examine the local politics of historic preservation and demolition decisions in the context of Los Angeles, a city with extreme housing affordability challenges. We ask: How is Los Angeles managing preservation and demolition in the context of development pressures and extreme housing affordability challenges? Supporting this overarching research question is a series of sub-questions, including: (1) what is the policy context for the designation of local historic districts in Los Angeles? (2) do the narratives preservationists and anti-development groups use to argue for the designation of new historic districts hold up to empirical scrutiny? (3) how does the designation of local historic districts in Los Angeles either align with or contradict housing affordability goals?

We use a mixed-methods approach combining policy and media analysis to address the first two sub-questions and quantitative and GIS analysis to address the third sub-question. For the quantitative analysis, we examine City of Los Angeles building permit data on demolitions and redevelopment mapped onto local historic district boundaries and compared with buffer areas surrounding the historic districts. The period for our study is from 2013 to 2021, capturing four-year increments before and after the designation of five new local historic districts in 2017.

The context of local historic district designations during the period of the analysis is connected to two recently completed citywide initiatives which heightened the overall awareness of preservation among residents and policymakers. SurveyLA documented previously undesignated historic and cultural resources, and HistoricPlacesLA created a publicly accessible repository of the city's existing inventory of historic resources. Preservationists and local anti-development groups relied on dual narratives rooted in protecting the loss of historic resources against the processes of mansionization and overdevelopment. Preliminary findings from the spatial analysis suggest limited evidence for mansionization or overdevelopment occurring within local district boundaries before designation. This research provides a window into how historic preservation tools factor into development pressures and housing affordability challenges and offers lessons for planners and policymakers navigating these contexts.

Citations

- Buckman, S. T. (2011). Upper middle class NIMBY in Phoenix: The community dynamics of the development process in the Arcadia neighborhood. *Journal of Community Practice*, 19(3), 308-325.
- Glaeser, E. (2012). *Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier*. Penguin.

- Podagrosi, Angelo, Igor Vojnovic, and Bruce Pigozzi. 2011. "The Diversity of Gentrification Houston's Urban Renaissance: From Cleansing the Urban Poor to Supergentrification." *Environment and Planning A: Economy and Space* 43 (8): 1910–29. <https://doi.org/10.1068/a43526>.
- Ryberg-Webster, Stephanie. 2019. "One Step Ahead of the Bulldozer: Historic Preservation in Houston, Texas." *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* 12 (1): 15–33. <https://doi.org/10.1080/17549175.2018.1501411>.
- Saito, L. T. (2009). From "Blighted" to "Historic" Race, Economic Development, and Historic Preservation in San Diego, California. *Urban affairs review*, 45(2), 166-187.

Key Words: NIMBYism, historic preservation, local redevelopment, housing affordability

IN SEARCH OF MISSING MIDDLE HOUSING: HISTORICAL TRENDS IN AND CONTEMPORARY CORRELATES OF SMALL MULTIFAMILY PRODUCTION.

Abstract ID: 1662

Individual Paper Submission

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Although still a large component of the US housing stock, production of new missing middle housing—which we define as small multifamily structures with 2 to 4 units—has been steadily declining over the last several decades. In the early 1980s, units in missing middle structures comprised around 9% of residential building permits nationally. Today, less than 2% of new building permits are for 2 to 4 units structures. In this paper, we document these trends and explore possible reasons for the current variation in new missing middle housing production. We build a national, place-level dataset combining data on building permits, current and historical census data, land use regulations, and supply characteristics. We then examine the association between three sets of community characteristics and missing middle production: supply, regulatory restrictiveness, and existing demand. We find supply and demand factors are the most consistent predictors of missing middle production. Our analysis suggests that a place's location (distance to the nearest CBD), the age of its population, the size of its existing rental housing stock, and its historical (as of the 1970 Census) share of housing units in missing middle structures are strong predictors of missing middle permitting. We end our analysis by considering how these findings can help cities that have recently passed or are currently considering zoning reforms that broadly legalize missing middle housing forms.

Citations

- Parolek, D., & Nelson, A. C. (2020). *Missing Middle Housing: Thinking Big and Building Small to Respond to Today's Housing Crisis* (1st ed.). Washington, D.C: Island Press.
- An, B. Y., Bostic, R. W., Jakabovics, A., Orlando, A. W., & Rodnyansky, S. (2021). Why Are Small and Medium Multifamily Properties So Inexpensive? *Journal of Real Estate Finance and Economics*, 62(3), 402–422.
- Davidoff, T. (2013). *Tax Reform and Sprawl* (No. HBTL-05). Cambridge, MA.

Key Words: Missing Middle, Housing Supply, Housing Development

DEVELOPMENT FOR WHOM? SHANTYTOWN REDEVELOPMENT AND HOUSING AFFORDABILITY IN BEIJING

Abstract ID: 1663

Individual Paper Submission

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Since 2008, the Shantytown Redevelopment Projects (SRPs)—a government-subsidized housing program—have been used extensively as an instrument to stimulate economic growth in Chinese cities. The SRPs, while being promoted as a welfare program that improves people's living conditions, could also lead to the decline of neighborhood housing affordability. First, the demolition of rental units in shantytowns potentially reduces the availability of affordable housing for low-income people. Shantytown rentals tend to have lower prices than other rental units in similar locations because of the tenure insecurity and the relatively deteriorated living conditions. The removal of those units may cause a significant loss in the affordable housing stock. Second, place-based investment can improve the physical environment of the neighborhood, but it can also generate higher rents. As redevelopment takes place, a general rent increase in the surrounding neighborhood is likely to happen in the absence of rent control. Low-income renters in these neighborhoods thus face the risk of being displaced.

Despite the potentially adverse impact of urban redevelopment, studies of the spillover effect of SRPs have been rare. Studies on urban redevelopment in China are mostly descriptive and very few have examined the causal linkage between urban redevelopment and housing affordability. Prior research has looked into the interplay between stakeholders, the spatiotemporal patterns of SRPs, and the association between SRP funding and average housing price in third-tier cities. Little attention has been paid to the influence of SRPs on housing affordability at the neighborhood level. What is more, none of the existing studies examine megacities, such as Beijing, where housing affordability problems are the most acute.

Using data from the real-estate brokerage Lianjia and the Beijing municipal government website, my paper contributes to the literature by answering the question: Do SRPs reduce rental affordability for the low-income population? If so, to what extent?

Data on housing affordability comes from Lianjia--the largest real estate brokerage in China which holds over 50% of the market share in Beijing. The python library "Beautiful Soup" is used to extract rental listing data in 2015, 2018, and 2021. The information collected includes the unit's geographical coordinates, monthly rent/sale price, floor area, number of rooms, year of construction, and other characteristics. The annual plans for SRPs from 2015 to 2021 are obtained from the municipal website and digitized using ArcGIS Pro. The dataset includes information on the project's location, boundaries, land area, and developer. The SRP dataset is unique and has never been used in empirical research.

I adopt the difference-in-differences (DID) approach to compare rents of nearby units before and after the announcement of an SRP, and rent trajectories for units closer to the SRP site (treatment group) with those for units further away (control group). The DID specification expresses the log monthly rent as a function of housing characteristics, locational amenities, a binary variable indicating whether the unit is located within the treatment zone, and a binary variable indicating whether the unit is listed after the SRP announcement. Instead of using a fixed distance buffer to delineate the treatment zone, local polynomial regression (LPR) will be applied to identify the treatment group and the control group. By allowing nonlinearity in the rental price gradient, LPR can demarcate the treatment zone more accurately so that the effect of SRPs can be better estimated.

The research findings will provide insights into how state-led redevelopment may shape the geography of urban poverty. If the study finds a negative spillover effect of SRPs, potential amendments to the redevelopment program should be considered to preserve the existing affordable housing stock for low-income renters.

Citations

- Li, X., Kleinhans, R. & van Ham, M. Shantytown redevelopment projects: State-led redevelopment of declining neighbourhoods under market transition in Shenyang, China. *Cities* 73, 106–116 (2018).
- He, S., Zhang, M. & Wei, Z. The state project of crisis management: China's Shantytown Redevelopment Schemes under state-led financialization. *Environ Plan A* 52, 632–653 (2020).
- Yuan, Y. & Song, W. Mechanism and Effect of Shantytown Reconstruction under Balanced and Full Development: A Case Study of Nanjing, China. *Sustainability* 12, 7979 (2020).
- Liu, K. Demystifying China's Shantytown Renovation Program and Its Effect on Real Estate Price. *The Chinese Economy* 52, 249–262 (2019).
- Wang, Y. & Goetz, E. G. No Place in the City: The Segregation of Affordable Formal Private Rentals in Beijing. *Housing Policy Debate* 0, 1–15 (2021).

Key Words: redevelopment, housing affordability

LAND USE REGULATIONS, HOUSING SUPPLY, AND COUNTY EVICTION FILINGS

Abstract ID: 1724

Individual Paper Submission

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The US Supreme Court's decision to strike down the federal eviction moratorium and the expiration of state eviction moratoria both threaten to elevate eviction rates to pre-pandemic levels, yet little is known about the effectiveness of policies designed to stem the tide of evictions. A few have examined the effectiveness of state landlord-tenant laws and other policies that are targeted to those at risk of experiencing housing instability (Allen et al., 2019; Hepburn et al., 2021; Preston and Reina, 2021), but no studies have examined the impact of land use regulations and other policies that restrict the supply of affordable housing. Given Somerville and Mayer's (2003) finding that in highly regulated housing markets, existing affordable homes are more likely to filter up and become unaffordable to those earning low incomes, it stands to reason that when land use regulations restrict new housing construction in the face of rising housing demand, low-income renters will face increased competition for existing rental units, and landlords may seek to replace low-income renters with renters willing to pay higher rents.

This paper addresses this research gap and examines the impact of state landlord-tenant laws, land use regulations, and housing supply constraints on county eviction filing rates. The primary source for county evictions data is the national evictions database assembled by the Eviction Lab (Desmond et al. 2018), a data repository and research consortium led by a Matthew Desmond and a team of researchers from Princeton University. The results from ordinary least squares and random effects regression models suggest that restrictive land use regulations are positively associated with eviction filing rates, while housing supply elasticity and inclusionary zoning ordinances reduce eviction filing rates. Controls for housing supply constraints also dampen the influence of median rents on eviction filing rates. The prevalence of subsidized housing reduces county eviction filing rates, but only in ordinary least squares models that ignore county-specific random effects. I find no evidence that eviction filing rates are lower in states with pro-renter landlord-tenant laws. These findings suggest that the scope of anti-eviction advocacy efforts should expand to include an emphasis on local land use regulatory reform.

Citations

- Allen, Heidi L., Erica Eliason, Naomi Zewde, and Tal Gross. 2019. Can Medicaid Expansion Prevent Housing Evictions? *Health Affairs* 38 (9): 1451-1457.
- Desmond, Matthew, Ashley Gromis, Lavar Edmonds, James Hendrickson, Katie Krywokuski, Lillian Leung, and Adam Porton. 2018. *Eviction Lab National Database: Version 1.0*. Princeton: Princeton University, www.evictionlab.org.
- Hepburn, Peter, Renee Louis, and Matthew Desmond. 2020. Racial and Gender Disparities among Evicted Americans. *Sociological Science* 7: 649-662.
- Preston, Gregory, and Vincent J. Reina. 2021. Sheltered From Eviction? A Framework for Understanding the Relationship Between Subsidized Housing Programs and Eviction. *Housing Policy Debate* 31 (3-5): 785-817.
- Somerville, C. T., & Mayer, C. J. 2003. Government Regulation and Changes in the Affordable Housing Stock. *Economic Policy Review* 9 (2).

Key Words: evictions, land use regulation, landlord-tenant law, housing supply, housing affordability

THE MUTED EFFECTS OF OPPORTUNITY ZONES ON AFFORDABLE HOUSING DEVELOPMENT

Abstract ID: 1737

Individual Paper Submission

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Established by the Tax Cuts and Jobs Act of 2017, Opportunity Zones promised to spur investment in undercapitalized communities. Early evaluations find OZ to have nominal effects on commercial real estate and business transactions. However, distressed community redevelopment has historically been driven by affordable housing. Moreover, the New Markets Tax Credit, which was also intended for business development, has become a critical source for affordable housing finance and developers can similarly leverage OZ by twinning it with the Low Income Housing Tax Credit. Has OZ spurred increased affordable housing development and why or why not? We use a difference-in-differences (DID) approach to compare low income housing tax credit project development in OZs with areas that were eligible but not designated. We find that OZ has had muted effects on LIHTC development. We interview national affordable housing experts to assess how and why the tax preference has failed in this regard. In conclusion, we outline how the incentive could be better designed to encourage affordable housing development.

Citations

- Kim, M., (2021). How do tax-based revitalisation policies affect urban property development? Evidence from Bronzeville, Chicago. *Urban Studies*. DOI: <https://doi.org/10.1177/0042098021995148>
- Foell, A., & Pitzer, K. A. (2020). Geographically targeted place-based community development interventions: A systematic review and examination of studies' methodological rigor. *Housing Policy Debate*, 30(5), 741-765.
- Chen, J, Glaeser E, Wessel D. (2019) The (Non-) Effect of Opportunity Zones on Housing Prices. National Bureau of Economic Research, Working Paper 26587.
- Freedman, M., Khanna, S., & Neumark, D. (2021). The Impacts of Opportunity Zones on Zone Residents. National Bureau of Economic Research, Working Paper 28573.
- Snidal M., Newman S. (2022 Missed Opportunity: The West Baltimore Opportunity Zones Story. *Cityscape*. 24(1):27-51.

Key Words: affordable housing, Opportunity Zones, LIHTC, economic development, tax incentives

CORPORATE LANDLORDS AND PANDEMIC AND PRE-PANDEMIC EVICTIONS IN LAS VEGAS

Abstract ID: 1750

Individual Paper Submission

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Concern about - and research on - residential evictions has grown in recent years, particularly since the publication of Matthew Desmond's (2016) *Evicted*, and these concerns have understandably intensified during the ongoing pandemic, which has severely impaired the incomes of millions of renter households across the US. Federal, state, and local governments adopted policies to prevent evictions during the pandemic, including the Center for Disease Control and Prevention's (CDC) eviction moratorium, and Congress appropriated billions of dollars for rental assistance. Housing advocates and investigative journalists, however, reported evictions were continuing despite these protections. Large corporate landlords, in particular, were charged with filing large numbers of pandemic-period evictions, leading Congress to send letters to several corporate letters demanding explanation.

This paper addresses the question of whether specific large corporate landlords were more likely to both file for and actually evict tenants, both during the first year of the pandemic and the year immediately preceding. This work builds on pre-pandemic research finding that large and corporate landlords are more likely to file for eviction, even after adjusting for other factors (Immergluck et al., 2020; Raymond et al., 2018). Large landlords have an incentive to standardize their process for handling delinquency and automatically file for eviction. While these landlords may be responsible for a relatively large number of filings during the pandemic due to their scale, do they remain more likely to evict, or are they perhaps better equipped to obtain available rental assistance dollars?

This study examines trends in evictions and filings associated with two particular submarkets, extended-stay and single-family rentals, through an analysis of case-level data covering the Las Vegas metropolitan area. Both are rental submarkets that expanded after the Great Recession (Seymour & Akers, 2021). Through a series of multivariate analyses, I find that extended-stay properties are associated with higher eviction rates than other multifamily properties during the 12-month period immediately preceding the pandemic. Landlords operating extended-stay properties are even more likely to file and evict during the first 12-months of the pandemic. The results are mixed for single-family rentals. Corporate and other large single-family landlords are generally more likely to file and evict prior to the pandemic, but several are no more likely or even far less likely to evict compared to smaller landlords during the pandemic.

These results suggest the need for both immediate and longer-term policy interventions to reduce housing insecurity and displacement in these rental submarkets. With regard to extended-stay apartments, moratoria must be crafted to countenance the variety of actually existing rental arrangements. Despite landlords' desire to represent occupants of weekly rentals as "guests," tenants consider these places their permanent address. During the pandemic, however, there is significant variation in the filing and eviction patterns of corporate single-family landlords requiring additional study, for instance, to better understand the factors associated with rental assistance program participation in this submarket.

Citations

- Desmond, M. (2016). *Evicted: Poverty and profit in the American city*. New York: Crown.
- Immergluck, D., Ernsthausen, J., Earl, S., & Powell, A. (2020). Evictions, large owners, and serial filings: Findings from Atlanta. *Housing Studies*, 35(5), 903-924.
- Raymond, E. L., Duckworth, R., Miller, B., Lucas, M., & Pokharel, S. (2018). From foreclosure to eviction: Housing insecurity in corporate-owned single-family rentals. *Cityscape*, 20(3), 159-188.
- Seymour, E., & Akers, J. (2021). "Our customer is America": Housing insecurity and eviction in Las Vegas, Nevada's postcrisis rental markets. *Housing Policy Debate*, 31(3-5), 516-539.

Key Words: eviction, corporate landlords, single-family rentals, extended-stay rentals, pandemic

NON-LINEAR AND WEAKLY MONOTONIC RELATIONSHIP BETWEEN SCHOOL QUALITY AND HOUSE PRICES

Abstract ID: 1754

Individual Paper Submission

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Central theme/ planning issue

Many countries have adopted an attendance-area-based approach to school education. Under this approach,

households send children to designated neighborhood public schools to avail free education. This approach leads to school quality becoming a major factor in households' location choice and, in turn, to the capitalization of school quality on house prices and rents. The capitalization occurs because households try to outbid each other to locate in areas with high-quality schools. Since higher-income households can outbid lower-income ones, this approach can lead to the concentration of the latter in areas with good schools. Such household sorting could lead to educational, economic, and social inequities when left to market forces because high house prices or rents restrict children from lower-income households from accessing high-quality education. Furthermore, empirical studies have shown strong linkages between the measures of education quality and earning potential; therefore, such a household sorting could worsen economic disparities between the rich and the poor. Finally, to the extent race/ethnicity and income might be highly correlated in a region, such sorting would likely concentrate minority communities in areas with low-quality schools.

These inequities-related concerns have spawned a large body of empirical studies. While US-focused initially, the more recent studies are from other parts of the world, mainly China, as regions in that country have started employing school-attendance-zone-based policy for admissions into public schools.

Given the inequities' spatial nature and the fact that they are tied to the land, land-use-policy-related interventions might be required. Such interventions could include up-zoning in areas with high-quality schools. Indeed, empirical studies show that an inelastic housing supply increases school quality's house price premiums. Furthermore, targeted government subsidies might be needed to develop affordable housing for low-income households in areas with high-quality schools. Finally, land-use planners might need to address opposition from high-income property owners in such areas since these property owners are likely to resist up-zoning and the provision of affordable housing in their neighborhoods. However, the first step is to identify the school-quality-related house price premium.

Approach and methodology

The vast majority of empirical studies that estimate school quality's impact on house prices assume a linear relationship between the two. The few studies that account for non-linearity still assume a strong monotonic relationship, meaning that as school quality increases, so do the house prices. I advance this line of research by using Fremont, California, as the study area to explore the possibility of a non-linear and weakly monotonic relationship between school quality and house prices. For example, such a relationship might exist if house prices or rents do not increase if school quality increases from low to medium quality.

Specifically, I employ a spatial econometric modeling approach to answer the following research questions: a) Controlling for other factors, do the school quality and house prices have a weak monotonic relationship? b) Is the school quality's house price premium influenced by the interaction between the quality of different schools (elementary, middle, and high)?

Findings and relevance of work

This study provides evidence for a non-linear and weakly monotonic relationship between school quality and house prices. The regression analysis shows that homeowners are unwilling to pay a premium for an increase in school quality from low to medium quality. However, they are willing to pay a large premium when all schools are top-quality schools and for access to nationally-renowned schools, which is in addition to the premium for top-quality schools. These findings have important planning implications because they provide new insights into the homeowner's residential location choice and highlight the need to consider school quality in a jurisdiction's land use and zoning decisions.

Citations

- Bayer, P., Fernando, F., McMillan, R., 2007. A unified framework for measuring preferences for schools and neighborhoods. *J. Polit. Econ.* 115, 588–638.
- Black, S., 1999. Do better schools matter? Parental valuation of elementary education. *Q. J. Econ.* 114, 577–599.
- Mathur, S., 2017. The myth of "free" public education: impact of school quality on house prices in the Fremont Unified School District, California. *J. Plan. Educ. Res.* 37, 176–194.
- Turnbull, G., Zheng, M., 2019. A meta-analysis of school quality capitalization in U.S. house prices. *Real. Estate Econ.* Vo (0), 1–52.
- Zhang, J., Li, H., Lin, J., Zheng, W., Li, H., Chen, Z., 2020. Meta-analysis of the relationship between high quality basic education resources and housing prices. *Land Use Policy* 99, 1–9.

Key Words: School Quality, Household Sorting, Housing Policy, Land Use Policy, Spatial Econometrics

THE ROLE OF HOUSING (DEVELOPMENT) IN ECONOMIC SEGREGATION: A NOVEL MEASUREMENT.

Abstract ID: 1775

Individual Paper Submission

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Economic housing segregation has increased across metropolitan areas of the United States since the 1970, but has remained much less studied than racial segregation. Segregation based on income or wealth is legal, and due to the racial wealth gap (and other wealth gaps) can become the means for racial segregation, as well as other types residential segregation. Housing segregation has predominantly been studied with demographic data of the Census Bureau aggregated into tracts, even though scholars have criticized the boundary as arbitrary and disconnected from neighborhood conditions on the ground---which can bias analyses results. Moreover, many scholars have noted that it is the housing market and the real estate development that shape the distribution of housing prices, and by extension determine who can live where. Traditional methods of measuring housing segregation have not included many real estate and housing market factors. This study shows results from a novel approach to study economic segregation using data and spatial boundary related to housing markets, policy, and real estate development to assess their roles in economic segregation. House value data from the tax appraisal district were used as a proxy for household income. Such an approach has been tested before, but using census tracts as the spatial boundary, instead I aggregated housing data into subdivision plat boundaries. Subdivisions align with housing development practices and reflect neighborhood conditions on the ground. I calculated Entropy index scores of house value diversity across 359 subdivisions in the study area: Brownsville, TX. Using an exploratory multiple linear regression, I identified factors related to housing development and markets (such as urban growth, real estate development, planning policy, and hedonic modelling) associated with house value diversity (the inverse of segregation). Factors that showed a statistically significant relationship with house value diversity included housing production: house and subdivision size (p-value < 0.001); planning policy: lot size (p-value < 0.001), metropolitan fragmentation (p-value < 0.05); hedonic factors: school districts (p-values < 0.001 and < 0.05), adjacency to a water body (p-value < 0.05), and spatial configuration of subdivisions (p-values < 0.1 and < 0.05). The findings offer several implication for planning practice and research. I formulated several planning recommendations to increase house value diversity. For the purpose of analyzing house value diversity/segregation and its relationship with housing production, policy, urban growth, and hedonic characteristics, the benefits of using subdivision plat outweighed the limitations of the novel approach, but further development is needed, particularly in streamlining the process of subdivision delineation. With further methodological innovations, this approach could be developed to allow for cross-referencing detailed housing data with census data to provide more insights on the role of housing development practices and planning policy on various types of residential social segregation.

Citations

- Bischoff, K., & Reardon, S. F. (2014). Residential segregation by income, 1970–2009. Diversity and disparities: America enters a new century, 43.
- Jargowsky, P. A. (1996). Take the money and run: Economic segregation in U.S. metropolitan areas. *American Sociological Review*, 61(6), 984-998.
- Owens, A. (2019). Building inequality: Housing segregation and income segregation. *Sociological Science*, 6, 497.
- Slater, T. (2013). Your life chances affect where you live: A critique of the 'cottage industry' of neighbourhood effects research. *International journal of urban and regional research*, 37(2), 367-387.

Key Words: housing production, real estate development, economic segregation, South Texas

RENT RELIEF AND ITS IMPACT ON RENT ARREARS, DEBT, AND THE WELLBEING OF RENTERS IN PHILADELPHIA

Abstract ID: 1781

Individual Paper Submission

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The federal government has provided unprecedented support to households facing economic hardship due to the pandemic. Specifically, nearly \$46 billion was approved for states and municipalities across the country to develop rent relief programs designed to help households remain housed. In theory, these programs stabilize households during the pandemic itself as well as mitigating its long-term effects; in some cases, the programs may even outlast the pandemic and become part of an enduring housing safety net. Despite the scale and scope of these rent relief programs, there is no evidence yet on their impact on households. This paper seeks to fill this critical knowledge gap.

This paper focuses on the City of Philadelphia's initial COVID-19 Emergency Rental Assistance (CERA) Program. The paper uses data from two waves of surveys imbedded in the tenant application for rent relief. The first survey was presented to all households when they applied for assistance in May 2020, and a follow-up survey was administered eight months later in January 2021. We estimate the impact of rent relief on rent arrears, debt levels, and overall households wellbeing. Our analysis suggests that rent relief did have a positive effect on households, but that these impacts were complicated by pre-existing challenges around housing affordability.

Citations

- Meltzer, Rachel and Alex Schwartz. 2016. Housing affordability and health: evidence from New York City. *Housing Policy Debate*, 26(1), 80-104.
- Reina, Vincent J, Claudia Aiken, Julia Verbrugge, Ingrid Gould Ellen, Tyler Hauptert, Andrew Aurand, and Rebecca Yae; 2021. "COVID-19 Emergency Rental Assistance: Analysis of a National Survey of Programs." Philadelphia: The Housing Initiative at Penn
- Rosen, Jovanna, Sean Angst, Soledad De Gregorio, and Gary Painter. 2020. "How do Renters Cope with Unaffordability?" Price Center for Social Innovation, https://socialinnovation.usc.edu/wp-content/uploads/2020/12/Price-Center_RentertUnaffordability_Report_Final.pdf (Accessed October 25, 2021)

Key Words: rent relief, housing affordability, eviction

TOWARDS COMMUNITY-LED HOUSING NEEDS ASSESSMENTS IN NORTHERN CANADA

Abstract ID: 1790

Individual Paper Submission

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There is growing discussion of the potential for Housing Needs Assessments (HNA) to inform a more context-based approach to addressing the northern housing crisis. However, by ignoring the larger system of funding and governance, we risk undermining northern, Indigenous communities in assessing their own self determined housing needs, identifying housing priorities and ultimately ensuring the long-term sustainability of their housing plans (McCartney et al., 2018, Dorries, 2012). Using examples from across northern Canada of conventionally prepared and more innovative HNAs, we conceptualize how the elements of lived experience, intersectionality, connections to the housing ecosystem and scale of inquiry must inform the HNA process if it is to fully reflect the housing needs and priorities of northern communities (Christensen, 2017). Drawing on our respective experiences and knowledge produced through working within the constellations of housing, home, health and wellbeing, we conclude the article with a critical perspective of HNAs, their role in the use of housing as a tool of colonialism, and the ethics of conducting HNAs before advancing a conceptualization of a sustainable, community-led approach to HNAs in northern Canada. Sustainability here requires not only community leadership in HNAs, but the resources necessary to ensure the implementation of community housing plans. We suggest that such a critical reimagining of the HNA process in the North has much to contribute to the HNA process in other contexts, such as other rural or remote communities in Canada and globally.

Methodology We write this article from the perspective of housing researchers who collectively have a wide breadth and depth of experience working in the area of housing needs across northern Canada. We co-lead a pan-Canadian northern housing research partnership, At Home in the North with core objectives to reimagine HNAs to better reflect community experience in the North and provide a sustainable foundation to the development and implementation of community-led housing plans. Housing, within this partnership, is studied holistically, not merely as shelter but as a central organizing point of families' social and cultural lives. Our approach, therefore, aligns within Indigenous Planning theory which privileges community-based solutions over state-based planning and holds that Indigenous voices do not require translation; Indigenous peoples are enablers of their own communities (Hibbard & Lane, 2004; Jojola, 2013).

Findings

This article has four interrelated objectives:

- 1) To understand and share existing conceptualizations of HNAs from across Canada's North;
- 2) To describe and analyze community-based HNA projects and how they identify possibilities for contributing to change in the approach to conducting of HNAs;
- 3) To reimagine needed components of a culturally responsive Northern HNA; and,

4) To outline the role of HNAs as a tool in a colonial oppressive housing process and the ethics of requiring an HNA to access funding.

Citations

- Christensen, J. (2017). No home in a homeland: Indigenous peoples and homelessness in the Canadian North. (1st ed.). UBC Press.
- Dorries, H. J. (2012). Rejecting the 'False Choice': Foregrounding Indigenous sovereignty in planning theory and practice [Dorctoral Dissertation]. University of Toronto, Toronto, Ontario.
- Jojola, T. (2013). Indigenous planning: Towards a seven generations model. In R. Walker, T. Jojola, & D. Natcher (Eds.), Reclaiming Indigenous planning (pp. 113–140). Montreal: McGill-Queen's University Press.
- Hibbard, M & Lane, M. B. (2004). By the Seat of Your Pants: Indigenous action and state response. Planning Theory & Practice, 5(1), 97-104.
- McCartney, S., Herskovits, H., & Hintelmann, L. (2018). Failure by Design: The On-Reserve First Nations' Housing Crisis and its Roots in Canadian Evaluation Frameworks. The Canadian Journal of Native Studies, XXXVIII(2), 101–124.

Key Words: Indigenous planning, Housing Needs Assessment, housing, Housing evaluation, participatory planning

IMMIGRANT HOUSING AND CULTURAL PRACTICES AS A CHANGE FACTOR IN CURRENT DENSITY AND PRICE DISTRIBUTION OF NEW YORK

Abstract ID: 1802

Individual Paper Submission

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The metropolis of many nations is experiencing constant splintering of its districts. This splintering brings along housing and cultural diversity as well as distribution of density across the urban landscape. In most North American countries, it has been identified that these outcomes are triggered by two major forms of segregation as it is manifested on the ground: natural segregation and artificial segregation (including systemic segregation). Among three selected neighborhoods (at the suburb-Mount Vernon, the interstice -Parkchester and the city core-South Bronx) in New York City, this paper adopts the transect point analysis method to explore the formation of these two forms of segregation and how they can help us understand how the new diverse silicon-valley-like global nodes could look like. These nodes represent spaces of immigrants' livelihoods. Here, I argue that we may be presenting an inaccurate depiction of the housing density/price from the core to the periphery since immigrants' culture and housing practices could change our analysis of housing density. This could also enable us to plan the heterogenous, 'appropriately' compact and diverse smart city that could be developed bottom-up. Thus, my research question is: How does the housing practices of New York residents change our depiction of the housing density/price distribution?

Citations

- Bertaud, A (2015) The Spatial Distribution of Land Prices and Densities: The Models Developed by Economists, Working Paper #23, New York: NYU, Marron Institute of Urban Management
- Quigley, J. M. (1998). Urban Diversity and Economic Growth, Journal of Economic Perspectives, 12(2), 127 - 138.
- Gordon, P. & Richardson, H. (2000). Critiquing Sprawl's Critics. Policy Analysis no. 365
- Gordon, P., & Richardson, H. (1997). Are Compact Cities a Desirable Planning Goal? Journal of the American Planning Association, 63(1), 95-106.

Key Words: Informality, Diversity, Immigration, Segregation, Density

EVALUATING THE ECOLOGY OF RENTAL HOUSING REGULATION IN ILLINOIS

Abstract ID: 1805

Individual Paper Submission

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Housing code enforcement has been described as "law in action" (Ross, 1995). Within the local government context, municipal code enforcement involves decision makers operating across a highly uneven and diverse tapestry of neighborhoods and living situations (Diver, 1980). Implicit in code enforcement practices is a blending of objective

health and safety concerns with highly subjective social and cultural norms (Hartman, Kessler, and LeGates, 1974). While code enforcement activities are vital for protecting individual and collective public health, safety, and wellbeing, the potential harms caused by implicit bias and differential treatment are great (Hirsch, 1983), and the material consequences and stakes grow increasingly higher, especially as cities adopt stronger nuisance and crime-free housing ordinances (Vock, Charles, and Maciag, 2019). Understanding the potential for bias within code enforcement systems brings up two important areas of concern: uneven enforcement and uneven outcomes.

One set of concerns involves the discretion of local government code enforcement officials, who may enforce codes differently based upon the racial or socioeconomic status of tenants, landlords, or the neighborhood in which the property is located. In some cases, such differential enforcement may be desirable from an equity perspective – it may recognize and help to minimize the impacts of hardships for tenants and landlords. Conversely, such discretion may increase housing instability, eviction, and displacement. Policy evaluation can help to uncover when and where such regulatory discretion is racialized, the consequences for tenants, landlords, and government, and the ways in which such discretion addresses or exacerbates local government and neighborhood equity concerns.

The second area of immediate concern involves the contribution of code enforcement to housing instability. In the wake of the COVID-19 pandemic, public policy continues to engage ongoing concerns around housing instability, as well as the contributions of local regulations to the local eviction landscape. Landlords may turn to justifications that are supported by nuisance or code enforcement violations as opposed to non-payment of rent as a lever to remove tenants amidst a continually evolving housing crisis.

In response to these two domains of concern, we evaluate local government rental property regulation and the application of nuisance and crime-free housing ordinances to assess the extent to which discretionary enforcement increases affordability, housing stability, and access to resource-rich neighborhoods, especially for people of color. Our goal is to use evaluation methods to inform code enforcement approaches that avoid targeting based on race or income, avoid displacement, maintain affordable rental units, and provide landlords with opportunities to secure financial resources for property improvements.

In this paper, we describe a novel mixed-methods evaluation framework and present preliminary results comparing code enforcement actions and perspectives from code enforcement officers for 28 local governments in Illinois. Using a combination of quantitative analysis and documentary video interviews, we describe a highly uneven landscape made more uneven by evolving neighborhood and community concerns. The evaluation brings together code enforcement stakeholders' perspectives to contextualize local trends associated with racial segregation, housing instability, and eviction.

Citations

- Diver, C. S. (1980). A theory of regulatory enforcement. 28(3), 257–299.
- Hartman, C. W., Kessler, R. P., & Legates R. T. (1974). Municipal Housing Code Enforcement and Low-Income Tenants. *Journal of the American Institute of Planners*, 40(2), 90–104.
<https://doi.org/10.1080/01944367408977455>
- Ross, H. L. (1995). Housing Code Enforcement as Law in Action. *Law & Policy*, 17(2), 133–160.
<https://doi.org/10.1111/j.1467-9930.1995.tb00142.x>
- Vock, D. C., Charles, J. B., & Maciag, Mike. Segregated in the Heartland: An Investigative Series. (2019, January 14). *Governing*. <https://www.governing.com/archive/gov-segregation-series.html>

Key Words: Housing Policy, Code Enforcement, Ethnography, Spatial Analysis, Policy Evaluation

HOW MARKET ACTORS RESPOND TO UPZONING: QUALITATIVE EVIDENCE FROM DURHAM, NORTH CAROLINA

Abstract ID: 1835

Individual Paper Submission

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There is a planning movement underway to eliminate single family zoning and “upzone” residential neighborhoods – that is, enact zoning changes that permit the development of denser housing types such as duplexes, accessory dwelling units (ADUs), small-lot homes, and multifamily housing (Manville et al., 2020). However, only a handful of studies have examined the effects of upzoning on cities and even fewer studies have examined whether market actors (e.g., property owners, developers) respond to these upzoning in the ways that planners intended (Freemark, 2019; Kim, 2020). This is a notable gap because it is possible that market actors are driven to use upzoning changes for profit maximization, whereas planners want more affordable housing, to diversify the housing stock, and to stop gentrification pressures in vulnerable neighborhoods. Thus, this study advances the upzoning literature by addressing

the following research questions: (1) to what extent do, or do not, market actors respond to upzoning in the ways that policymakers intended? (2) what factors explain market actors' responses?

To answer these questions, we conducted semi-structured interviews with roughly 25 housing market actors in Durham, North Carolina, which recently implemented an upzoning reform to the city's unified development ordinance. Our results indicate that market actors, particularly developers and builders, are more likely to make use of upzoning reforms if they already specialized in infill development and building smaller dwellings. We also find that a variety of non-zoning city ordinances make it difficult to build dense, affordable homes under Durham's EHC initiative, such as parking and engineering requirements. Some market actors also noted that it is difficult to secure construction loans for ADUS, which is a major barrier to ADU development given the relatively high costs of building smaller dwellings. Finally, an unexpected finding of our research is that smaller building and design firms have been able to build their businesses, as the smaller-scope certain of duplex and ADUs is more manageable for these businesses.

These findings provide important insights to planning scholars and practitioners who are interested in the benefits and drawbacks of upzoning reforms. Namely, they highlight that zoning changes alone may not facilitate dense, affordable housing development, as other local ordinances (e.g., parking and engineering requirements) can create barriers to development. They also highlight that issues beyond the immediate control of planners, such as high construction costs and firm specialization, may influence whether market actors make use of upzoning as intended. These issues may make it difficult for upzoning reforms to achieve their underlying social goals, at least in the short-term.

Citations

- Freemark, Y. (2020). Upzoning Chicago: Impacts of a zoning reform on property values and housing construction. *Urban Affairs Review*, 56(3), 758-789.
- Kim, M. (2020). Upzoning and value capture: How US local governments use land use regulation power to create and capture value from real estate developments. *Land Use Policy*, 95, 104624.
- Manville, M., Monkkonen, P., & Lens, M. (2020). It's time to end single-family zoning. *Journal of the American Planning Association*, 86(1), 106-112.

Key Words: Zoning, Upzoning, Housing, Development

HETEROGENEITY IN THE RECOVERY OF LOCAL REAL ESTATE MARKETS AFTER EXTREME EVENTS: THE CASE OF HURRICANE SANDY

Abstract ID: 1845

Individual Paper Submission

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This paper examines the effect of Hurricane Sandy on local real estate markets in New York City. A natural disaster, like Sandy, generates two important shocks that can affect real estate markets: (i) it creates new (and often severe) physical blight and (ii) it provides new information about the risk of future damage. These shocks can manifest very differently across sub-markets, and policymakers need to understand this variation so that they can manage post-disaster recovery and plan for future events in a targeted way. Thus, we focus on heterogeneity in price recovery across neighborhoods, and conduct analyses of population shifts that help to unpack the sub-market responses. We surmise that pre-existing knowledge and beliefs about neighborhood risk and long-run expectations about a neighborhood's economic potential or quality contribute to the differences we observe. Differential access to resources for repairs may also play a role.

We rely on a combination of several longitudinal, micro-datasets on property sales transactions, property characteristics, and mortgage application activity in New York City. We overlay these data with spatial information on flood zones, to capture the perceived risk prior to Hurricane Sandy, as well as spatially detailed data on storm surge heights. Our results indicate that the prices of properties that saw high storm surges fell in the immediate aftermath of the storm. In the year after the storm, 1-3 family properties on high-surge blocks saw price declines of about 16 percent compared to properties on blocks without any storm surge. On average, values of these properties remained about 12 percent lower than pre-storm levels six years after the storm. We find that properties located on blocks in low-surge areas also saw a sustained, though more gradual, reduction in value, with property values falling to about 14 percent below pre-storm levels by 2018. Preliminary analyses of rebuilding activity suggest that any price decline is due more to new information about risk than persistent blight.

One of our core contributions is to illustrate significant differences in recovery inside and outside of official flood zones, or FEMA zones. Specifically, the prices of properties on high surge blocks located inside FEMA zones saw an

initial decline in prices but recovered quickly after the storm, perhaps because greater insurance coverage allowed for quick repairs, or perhaps because these areas were already considered risky before the storm, so the storm did not provide any additional information. Further, we see no evidence that the price discount from location in the flood zone increased after the storm. By contrast, prices of properties outside FEMA zones remained depressed six years after the storm, on both high- and low-surge blocks.

A second key contribution is our finding of differential recovery in high- and low-income neighborhoods. We find that properties in higher income neighborhoods that were hit by high storm surges experienced larger initial price shocks than those in low-income areas. Prices in higher income areas recovered over time, however, while those in lower income areas exhibited no sign of recovery and experienced further decline. Finally, the storm led to a change in the racial composition of homebuyers in low-surge areas. After the storm, homebuyers in those areas were more likely to be black and Hispanic.

Citations

- Atreya, Ajita, and Susana Ferreira. "Seeing is believing? Evidence from property prices in inundated areas." *Risk Analysis* 35.5 (2015): 828-848.
- Cohen, Jeffrey P., Barr, Jason and Kim, Eon. "Storm Surges, Informational Shocks, and the Price of Urban Real Estate: An Application to the Case of Hurricane Sandy." *Regional Science and Urban Economics*, 90 (2021).
- Kousky, Carolyn. "Learning from extreme events: Risk perceptions after the flood." *Land Economics* 86.3 (2010): 395-422.
- McKenzie, Russell, and John Levendis. "Flood hazards and urban housing markets: The effects of Katrina on New Orleans." *The Journal of Real Estate Finance and Economics* 40.1 (2010): 62-76.
- Ortega, Francesc, and Suleyman Taspinar. "Rising Sea Levels and Sinking Property Values: The Effects of Hurricane Sandy on New York's Housing Market." *Journal of Urban Economics*, 106, pages 81-100. (2018).

Key Words: Hurricane, Climate change, Price capitalization, Neighborhood, urban blight

BLUNT INSTRUMENTS: MUNICIPAL HOUSING BONDS CONFRONT THE AFFORDABLE HOUSING CRISIS

Abstract ID: 1846

Individual Paper Submission

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Since the 2008 global financial crisis and the restructuring of housing markets, affordability has become a key challenge for cities. To respond to this crisis, municipalities and local housing financing agencies increased their housing bond issuance by 150% over the last decade, helping bump housing as a percentage of total municipal bond issuance to a 10-year high (Breckinridge Capital Advisors, 2019). However, even as cities and taxpayers committed more collateral and taxpayer funds than in recent past to solve the affordable housing crisis, there is growing concern around the use of these bonds.

These purported solutions to financing affordable housing reflect a shift in municipal planning and policy where the delivery of social goods is dependent on financial markets—or what have some have referred to as the “financialization of urban governance” (Weber, 2010). Housing bonds increasingly are issued by private actors, which are authorized under Joint Exercise of Powers Acts (Schiffrin, Contreras and Sandler, 2020). Municipal housing bonds offer institutional investors tax-free investment opportunities in rental housing markets. This creates a perverse incentive to maximize debt for the purchase of large-scale and just-under-market-rate units (see Schiffrin, Contreras and Sandler, 2020 and Tapp, 2020). Proceeds from the housing bonds frequently are used in conjunction with the federal Low Income Housing Tax Credit program, another vehicle for providing lucrative income tax deductions and benefits to investors in higher tax brackets. The LIHTC program has been criticized for being administratively inefficient, particularly because of the high transaction costs for counsel and syndicators involved. The opportunity and transaction costs associated with these forms of tax relief raise questions about whether these popular forms of finance are the best way to respond to the growing affordable housing crisis.

In this paper, we (i) analyze the overall volume of municipal bonds issued between 2010-2020, (ii) identify the volume, discount rates, interest rates, and collateral securing affordable housing bonds; (iii) evaluate the ratio of this debt vs equity in recent affordable housing construction; and (iv) identify new housing finance entities involved in debt issuance and the allocation of proceeds. To describe recent development in public housing finance this paper draws on municipal housing bond issuance data sourced from MSRB's Electronic Municipal Market Access (EMMA) in five US cities: Atlanta, Boston, Chicago, San Francisco, and Washington DC. These geographically diverse sites illustrate a wide range of fiscal conditions—from surplus to distress—with which cities navigated to provide affordable

housing.

The findings of this paper provide planners with insight about the new financial tools used in relieving affordable housing crisis (see Kim et al., 2020). While particular affordable housing policies have been discussed in depth, scant research has examined the upstream forms debt and securities that fund those programs. Inspired by recent work on state capitalism and financialization, we explore whether funding sources influence policy choices on the ground and why certain municipalities rely more or less on debt to fund these policies and programs.

Citations

- Breckinridge Capital Advisors (2019). Affordable housing aided by Muni market in 2019. 27 December. Available at: <https://www.breckinridge.com/insights/details/affordable-housing-aided-by-muni-market-in-2019/>.
- Kim M, Malizia E, Nelson M, Wolf-Powers L, Ganning J and Schrock G (2020). Real Estate Development and Economic Development Planning Education: Pragmatic Turn or Trojan Horse?. *Journal of Planning Education and Research*, p.0739456X20963568.
- Schiffrin M, Contreras I, and Sandler R (2021). California Scheming. *Forbes*. 20 December. Available at: <https://www.forbes.com/sites/schiffrin/2021/12/02/california-scheming-municipal-bonds-workforce-housing-crisis-luxury-apartments/?sh=136b985c3001>.
- Tapp R (2020). From the state to the shareholder: Rent and the production of shareholder value in real estate. *Antipode* 52(3): 867-887.
- Weber R (2010). Selling City Futures: The Financialization of Urban Redevelopment Policy. *Economic Geography* 86(3): 251-274.

Key Words: municipal bonds, affordable housing, financialization, housing finance, junk bonds

DO LOW-INCOME HOUSING TAX CREDIT (LIHTC) DEVELOPMENTS EXPAND OPPORTUNITIES? THE SPILLOVER EFFECTS OF LIHTC ON COMMUNITY RESOURCES

Abstract ID: 1924

Individual Paper Submission

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This study explores the relationship between the location of Low-Income Housing Tax Credit (LIHTC) developments and their access to community resources—such as facilities related to education, food, health, and social services—that are essential for residents' life chances and well-being. This study specifically focuses on whether LIHTC developments are located in neighborhoods that have better access to community resources than other neighborhoods which do not have them.

Previous studies have reported that LIHTC units are likely to be located in low-opportunity neighborhoods with substantial minority populations, high levels of poverty, weaker labor markets, and lower levels of safety and environmental quality (Ellen et al., 2018; Lens & Reina, 2016). Therefore, scholars often assume that LIHTC tenants have limited access to community resources. Although some studies explored the walkability score of subsidized housing to amenities (Koschinsky & Talen, 2016; Talen & Koschinsky, 2014), community resources still have been comparatively overlooked in terms of neighborhood opportunity; and scholars have provided evidences of the non-linear relationship between neighborhood socioeconomic status (SES) and access to resources (Small & McDermott, 2006).

At this point, a couple of important questions arise: What is the resource accessibility for LIHTC units? Is there any racial and ethnic inequality in access to resources among LIHTC tenants? What are the spillover effects of LIHTC developments on community resource distribution? To address these questions, I will measure the LIHTC units' accessibility to community resources and examine the relationship between the accessibility and diverse attributes at the tenant, neighborhood, and municipal levels by analyzing the following datasets: (1) the ReferenceUSA data; (2) U.S. Census Bureau data; and (3) the LIHTC database from the U.S. Department of Housing and Urban Development. This study specifically utilizes multilevel regression and propensity score method to explore the community resource distribution and the spillover effects of LIHTC developments on the fate of community resources. In general, the results suggest the unequal access to community resources based on neighborhood contexts. Moreover, LIHTC developments, especially located in high-SES municipality, increase the number of community resources.

This research will make contributions to diverse disciplines, including public health, urban planning, geography, and sociology. First, this study employs the urban political economy perspective to explore how local authorities bring about disparities in resource accessibility across space. Second, this study reassesses the concept of neighborhood opportunity by investigating the relationship between the accessibility of community resources and the traditional

SES indicators. This project, therefore, facilitates an advancement in measuring resource accessibility by applying spatial clustering as well as providing an essential base for future studies that examine the role of the built and social environment on individuals and neighborhoods.

Citations

- Ellen, I. G., Horn, K. M., & Kuai, Y. (2018). Gateway to opportunity? Disparities in neighborhood conditions among Low-Income Housing Tax Credit residents. *Housing Policy Debate*, 28(4), 572–591.
- Koschinsky, J., & Talen, E. (2016). Location efficiency and affordability: A national analysis of walkable access and HUD-assisted housing. *Housing Policy Debate*, 26(4-5), 835-863.
- Lens, M. C., & Reina, V. (2016). Preserving neighborhood opportunity: Where federal housing subsidies expire. *Housing Policy Debate*, 26(4–5), 714–732.
- Small, M. L., & McDermott, M. (2006). The Presence of Organizational Resources in Poor Urban Neighborhoods: An Analysis of Average and Contextual Effects. *Social Forces*, 84(3), 1697–1724.
- Talen, E., & Koschinsky, J. (2014). The neighborhood quality of subsidized housing. *Journal of the American Planning Association*, 80, 67–82.

Key Words: Low-Income Housing Tax Credit, Community Resources, Geography of Opportunity

ARE SUSTAINABLE AND AFFORDABLE MUTUALLY EXCLUSIVE? A CASE STUDY OF A ZERO NET ENERGY AFFORDABLE HOUSING PROJECT FOR FARMWORKERS IN WOODLAND, CALIFORNIA

Abstract ID: 1931

Individual Paper Submission

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In the United States there is a longstanding relationship between environmentalism and inequality. Too often those most affected are the poor and dispossessed. Environmental policy remains the domain of those who can afford the luxury of entertaining such concerns. This is especially true as the climate crisis begins to intersect with other public health and social crises like the COVID-19 pandemic and the global housing crisis.

Effective public policy concerning sustainability requires that those most vulnerable to the devastating effects of climate change are as protected as the privileged elite – environmental justice. This requires a mandate that local, state, and federal government protect the poor with the same rigor and resources as the elite. Environmental justice is increasingly important in all aspects of public policy but especially in housing. A prime example of a population that is vulnerable in this respect are immigrant farmworkers. The advocacy group Farmworker Justice has identified substandard and poor-quality housing as a major determinant of poor health for this community (Farmworker Justice, Issue Brief: Farmworker Housing Quality and Health, 2014), it makes sense then that because this population is concerned about having access to housing at all, that sustainability is not a priority. California is home to almost a third of the country's 2.4 million farmworkers (Farmworker Justice, 2021). These workers have been at the frontline of climate change and the COVID-19 pandemic and have continued to feed the country while being disproportionately adversely affected by the virus. UC Berkeley researchers found that 13% of study participants tested positive for COVID-19 as compared to 5% of the general population (Mora et al., 2021). As the COVID-19 pandemic continues and farmworkers struggle to find affordable housing, overcrowded dwellings have become COVID-19 clusters that severely affect the community. This exacerbates difficulties the community has accessing the housing services bureaucracy due to language barriers, fear of deportation, and migratory labor patterns that often hide housing precarity in plain sight (Adams and Simonsen-Meehan, 2013). Consequently, it is important to look for models that help this vulnerable community access affordable, safe, sanitary, and sustainable housing.

In 2015, the community of Woodland, California opened the Mutual Housing at Spring Lake (MHSL) development (PD & R Edge, An Online Magazine, n.d.). This development is a Zero Net Energy Affordable Housing development for farmworkers in the city. According to the project's page on PD & R's Edge Online Magazine, "[b]efore starting MHSL's design and construction, developer Mutual Housing California, an organization guided by principles of sustainable housing and resident engagement, surveyed its agricultural workers. The respondents indicated that rent and utility costs were their primary housing concerns, and the developer made addressing these concerns a priority in planning MHSL" (PD & R Edge, An Online Magazine, n.d.). With this in mind, the development was designed with a 209-kilowatt photovoltaic power system that greatly lowers the demand for energy and consequently reduces energy costs. This study delves into the MHSL case study and analyzes public engagement, design and outcomes in order to determine if this is a viable model for others to follow in their quest to advance both housing justice and sustainability in farmworking rural communities in California and potentially nationwide. Data collection includes analysis of newspaper articles, city planning documents, electronically available city council meeting minutes and agendas and interviews with subject matter experts (SME) like city planners and other government and elected officials.

Citations

- Adams, M. and Simonsen-Meehan, A. (2013). The Struggles of Homeless Hispanic Families. Uncensored on the Homefront. Retrieved from https://www.icphusa.org/wp-content/uploads/2015/01/ICPH_UNCENSORED_4.2_Summer2013_NationalPerspective_TheStrugglesofHomelessHispanicFamilies.pdf
- Farmworker Justice. (2014). Issue Brief: Farmworker Housing Quality and Health. Retrieved from <https://www.farmworkerjustice.org/wp-content/uploads/2015/08/FJ-Housing-Issue-Brief-FINAL.pdf>
- Farmworker Justice. (2021). Who we serve. Retrieved from <https://www.farmworkerjustice.org/about-farmworker-justice/who-we-serve/>
- Mora, A. M., Lewnard, J. A., Kogut, K., Rauch, S. A., Hernandez, S., Wong, M. P., ... & CHAMACOS-Project-19 Study Team. (2021). Risk Factors Associated With SARS-CoV-2 Infection Among Farmworkers in Monterey County, California. *JAMA network open*, 4(9), e2124116-e2124116.
- PD & R: An Online Magazine. (n.d.). Zero Net Energy Affordable Housing: Home for Agricultural Workers in Woodland, California. HUD USER. Retrieved December 22, 2021, from <https://www.huduser.gov/portal/pdredge/pdr-edge-inpractice-012516.html>

Key Words: Affordable Housing, Environmental Justice, Farmworkers, Net Zero Energy Building

WHEN IS STAYING NO LONGER AN OPTION? AN ANALYSIS OF SEQUENTIAL RESIDENTIAL MOVES IN THE NORTHERN CALIFORNIA MEGAREGION

Abstract ID: 1949

Individual Paper Submission

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Lower income people's ability to change home is highly constrained. The high cost of moving and lack of affordable alternatives can lead to people staying in their residence longer than they would, foregoing better opportunities and paying an increasing share of their income toward housing. When they do move, lower income people tend to locate in more disadvantaged locations, especially when the move is involuntary (Baker et al., 2016; DeLuca et al., 2019). People of all income tend to stay within the same type of neighborhood, contributing to the persistence of segregation and urban inequality (Greenlee, 2019).

This line of research has been limited by the lack of high quality data to examine people's entire moving history. We use tax records for all filers in the Northern California megaregion between 1994 and 2015 to analyze the relationship between income, frequency of moves, and the sequence of move. The Northern California megaregion, which includes the Bay Area and adjacent Central Valley, is one of the most expensive housing markets in the nation. It is also a divided region with home prices in the Central Valley between 2 to 3 times lower than in the Bay Area. Indirect evidence suggests that many lower income households and people of color move to the Central Valley, away from the main economic centers in the Bay Area in search of lower housing cost (Schaffran, 2018).

Our data includes all filers that at any point in the in the 20 year period filed income taxes within the region. We assigned the 135 million individual records to the 2010 Census Zip Code Tabulation Area geography to link the tax data to Census data from 1990, 2000, and ACS 2009-2015. We use the Census data to create an index of Zip Code socioeconomic status based on a ranking of all Zip Codes within the region. The analysis focuses on two aspects of people's move history. First, we examine whether lower income households move more frequently and how their income changes with each move. Second, we examine the progression of Zip Codes after each move and whether moves are between Zip Code of similar, worse, or better socioeconomic status.

We identify distinct trajectories. Many movers remain local, moving to adjacent or close to adjacent Zip Codes. This is irrespective of the trajectory of the Zip Code. Places that have gentrified like the Mission District in San Francisco and Central Oakland show patterns similar to more suburban areas at the edges of the Bay Area. Another group of movers has followed a trajectory that takes them further from their point of origin, usually ending up in areas with lower accessibility to the rest of the region. In both cases, there is substantial heterogeneity in income and neighborhood trajectory, suggesting that decisions are highly individualized. The results show that residential mobility and, likely, displacement often play out over the longer term and multiple moves.

Citations

- Baker, E., Bentley, R., Lester, L., & Beer, A. (2016). Housing affordability and residential mobility as drivers of locational inequality. *Applied Geography*, 72, 65–75. <https://doi.org/10.1016/j.apgeog.2016.05.007>

- DeLuca, S., Wood, H., & Rosenblatt, P. (2019). Why Poor Families Move (And Where They Go): Reactive Mobility and Residential Decisions. *City & Community*, 18(2), 556–593. <https://doi.org/10.1111/cico.12386>
- Greenlee, A. J. (2019). Assessing the Intersection of Neighborhood Change and Residential Mobility Pathways for the Chicago. *Housing Policy Debate*, 29(1), 186–212.
- Schafran, A. (2018). *The road to resegregation: Northern California and the failure of politics*. University of California Press.

Key Words: Residential mobility, Neighborhood change, socioeconomic mobility, housing affordability

REPURPOSING EVICTIONS DATA TO EMPOWER TENANTS: COUNTER-DATA ACTION DURING COVID19

Abstract ID: 1950

Individual Paper Submission

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Evictions data are comprised of administrative datasets created by civil courts system to document legal processes. These data are obtained and compiled by data brokers such as CoreLogic and Lexis Nexis, packaged into proprietary tenant rating algorithms, and routinely used to screen tenants out of housing, create risk-based-pricing fees, and to segment tenants into submarkets where substandard maintenance, high housing instability, and high rents are commonplace (Fields, 2019; McElroy & Vergerio, 2022; Teresa & Howell, 2021). These proprietary datasets have also been purchased by social scientists, and used to produce research on evictions; or to guide policy at the national level. While laudable, these efforts do not unsettle the political economy of evictions data, which is produced by the state courts system, then sold by the private data firms to surveil, price, and penalize tenants.

In 2020, in this participatory action research project, we sought to create an evictions dataset in conjunction with tenant organizers which would empower tenants facing eviction during the pandemic (D'Ignazio & Klein, 2020; Meng & DiSalvo, 2018; Smith, 2021). As founding members of the Southeastern Evictions Data Collaborative, we created an evictions data tool to scrape evictions data from county courts of three Georgia urban regions. Our goal was to create a data tool that could empower tenants and legal aid organizations. We used the high frequency of the dataset, spatial granularity and specificity of case-event information to support a multitude of local interventions to communicate to, and mobilize tenants facing eviction.

In one intervention, we encouraged tenant answers to help households stay in place. Unlike many states, Georgia did not have an evictions moratoria. Eviction filings remained high throughout the pandemic. However, during the summer of 2020, hearings were suspended for several months. While courts continued to accept filings and issue default judgments, any tenant who filed an answer secured the right to a hearing, effectively securing the legal right to stay in place until courts resumed hearings. Our team helped design an intervention to mobilize tenants and encourage households facing eviction to file answers. We worked alongside local tenants' organizers, Housing Justice League, to identify buildings with high numbers of tenants facing eviction for canvassing.

In this research, we describe the creation of an eviction data tool in conjunction with local government, tenants' organizers, and legal aid groups, and describe the frictions, challenges, and negotiations of resituating courts data as a tool to preserve access to shelter. We also evaluate the effectiveness of one intervention using a regression analysis, and calculate that the answer rate among tenants living in buildings which were canvassed was 7% higher than buildings which were listed but not canvassed. These findings show promising impacts of planners working in participatory research to mobilize tenants and empower community organizations.

Citations

- D'Ignazio, C., & Klein, L. F. (2020). *Data feminism*. MIT Press.
- Fields, D. (2019). Automated landlord: Digital technologies and post-crisis financial accumulation. *Environment and Planning A: Economy and Space*, 0308518X19846514. <https://doi.org/10.1177/0308518X19846514>
- Meng, A., & DiSalvo, C. (2018). Grassroots resource mobilization through counter-data action. *Big Data & Society*, 5(2), 2053951718796862. <https://doi.org/10.1177/2053951718796862>
- Smith, L. T. (2021). *Decolonizing methodologies: Research and indigenous peoples*. Bloomsbury Publishing.
- Teresa, B. F., & Howell, K. L. (2021). Eviction and segmented housing markets in Richmond, Virginia. *Housing Policy Debate*, 31(3–5), 627–646.

Key Words: participatory action research, eviction, housing justice, pandemic, data

HOUSING MARKET DYNAMICS AFTER HURRICANE SANDY

Abstract ID: 1965

Individual Paper Submission

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Accurately measuring the impact of hurricanes on housing dynamics is of great importance to planners and policymakers seeking to effectively distribute scarce post-disaster resources. A deep body of research assesses the impact of natural disasters on residential real estate prices, yielding mixed results. Studies of Hurricanes Andrew (Hallstrom et al 2004) and Floyd (Bin et al 2013) find short-term decreases in post-disaster housing values. In contrast, studies of Hurricanes Katrina (Vigdor 2008) and Andrew (Zhang & Peacock 2009) find evidence of post-storm increases in home values, especially among owner-occupied homes and those adjacent to damaged properties but not themselves damaged.

Hurricane Sandy, which struck New York City in October, 2012, brought severe damage to each of the city's five boroughs. The storm's impact was most acute in low-lying coastal areas, where over 90,000 buildings were in the storm's inundation zone (City of New York 2013). Resulting damage to residential real estate was significant. A scholarly consensus has not yet been reached regarding Hurricane Sandy's impact on storm-impacted housing values in New York City. Evidence that the storm led to short term decreases in values for properties with minor storm-related damage and more durable value decreases for those with major damage (Ortega & Taspinar 2018) and caused decreases in property values for homes that were undamaged but near flooded areas (Cohen et al. 2021) exists alongside seemingly contradictory findings suggesting Sandy spurred gentrification in affected areas (Chun 2015).

The present study brings additional evidence and methodological innovations to bear on this limited body of work. Over a time frame beginning four years prior to and ending seven years after Hurricane Sandy, we compare values in Brooklyn and Queens for properties in zip codes directly hit by a surge (surged), those adjacent to areas hit by a surge (near surged), and, due to the possibility that the surged group had spillover effects on the near surged group, we also assess all other non-surged zip codes. We use New York City microdata to estimate an Ordinary Least Squares (OLS) regression that measures average effects across each group of zip codes, and a hedonic model that is geographically weighted to account for spatial autocorrelation and is designed to detect more localized housing price differences.

Findings suggest that, overall, property values in Brooklyn and Queens increased dramatically in the years following Hurricane Sandy, regardless of whether a property was subject to, near, or un-impacted by the Hurricane's storm surge. However disaggregating neighborhoods by whether they are oriented toward the Atlantic Ocean or the East River reveals significant heterogeneity in the recovery of property values. These results suggest that aggregate findings from past studies may mask significant heterogeneity in value recovery across properties and neighborhoods in different sections of impacted cities. Future research focused on disasters' impacts on property values should take a geographically nuanced approach to measurement to ensure these patterns are observed, and can, in turn, inform policymakers in the development of more accurate and equitable response plans.

Citations

- Chun, Y. (2015). Gentrification of Neighborhoods in New York City after Hurricane Sandy. [Master's thesis]. Academic Commons.
- Cohen, J. P., Barr, J., & Kim, E. (2021). Storm surges, informational shocks, and the price of urban real estate: An application to the case of Hurricane Sandy. *Regional Science and Urban Economics*. 90.
- Ortega, F., & Taspinar, S. (2018). Rising sea levels and sinking property values: hurricane Sandy and New York's housing market. *Journal of Urban Economics*. 106.
- Zhang, Y., & Peacock, W.G. (2009) Planning for Housing Recovery? Lessons Learned From Hurricane Andrew. *Journal of the American Planning Association*, 76(1).

Key Words: Housing, Hurricanes, Recovery, Disaster Planning

A HOUSING LADDER THAT HAS NO RUNGS: AN INVESTIGATION OF YOUTH TO ADULT PATHWAYS OF HOMELESSNESS IN CENTRAL IOWA

Abstract ID: 1966

Individual Paper Submission

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This study investigates the pathways of homelessness for individuals who experienced episodic family homelessness as a child and then later as an adult head of household. It builds from the understanding of homelessness as a structural problem where individuals and families have inadequate income to support stable housing within existing housing markets. While existing literature has demonstrated that residential instability and prior shelter use are strong predictors of future homelessness, we know little about how these factors play out within the specific experience of child to adult homelessness or the context of central Iowa.

The existing literature regarding homelessness provides few answers as to why some individuals who are homeless as children go on to become homeless again as adults with children of their own. We want to know what makes this homelessness pathway unique. The Housing Management Information System (HMIS) for the state of Iowa has more than 15 years of data from homeless individuals who have entered into the state's homelessness system. When data analysis failed to produce meaningful insights to this question, the team turned to qualitative inquiry for answers. For the study sample, our team identified female and non-binary individuals at least 25 years of age who were in the HMIS system as children and then were in the system again at a later date as head of household. The sample is divided in half between white and Black households.

For this study, the research team conducted and analyzed 10 semi-structured, in-depth interviews. The interview protocol used a timeline technique that focused on the housing histories and institutional experiences of the research participants over time. The research approach is inductive and phenomenological, investigating what the experience of homelessness means to the individuals experiencing it. By focusing on the daily lived experiences of these individuals over time, we were able to learn more about their interactions with systems that both assisted and created barriers as they struggled to stay housed. This research provided a richly detailed accounting of the pathways of homelessness for individuals who move across time from an unhoused child to a housing insecure adult. This paper identifies the shared themes and institutional experiences of participants in this study, ending with a discussion of the policy implications for planners and local governments.

Citations

- Carnemolla, P., & Skinner, V. (2021). Outcomes associated with providing secure, stable, and permanent housing for people who have been homeless: an international scoping review. *Journal of Planning Literature*, 36(4), 508-525.
- Rukmana, D. (2020). The causes of homelessness and the characteristics associated with high risk of homelessness: a review of intercity and intracity homelessness data. *Housing Policy Debate*, 30(2), 291-308.
- Rukmana, D. (2010). Gender differences in the residential origins of the homeless: Identification of areas with high risk of homelessness. *Planning Practice & Research*, 25(1), 95-116.
- García, I., & Kim, K. (2021). "Many of Us Have Been Previously Evicted": Exploring the Relationship Between Homelessness and Evictions Among Families Participating in the Rapid Rehousing Program in Salt Lake County, Utah. *Housing Policy Debate*, 31(3-5), 582-600.
- Lee, B. A., Shinn, M., & Culhane, D. P. (2021). Homelessness as a moving target. *The Annals of the American Academy of Political and Social Science*, 693(1), 8-26.

Key Words: Homelessness, housing pathways, poverty

WAIWAI HO'OPA'A: LEARNING FROM THE PAST TO INFORM THE HOUSING CRISIS

Abstract ID: 1970

Individual Paper Submission

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As the County of Hawai'i continues to recover from the 2018 Kilauea eruption and the Covid-19 Pandemic, complex issues concerning housing and food security have been highlighted. Through community-based research in collaboration with local nonprofits in the county and government staff, this project supports efforts to address pressing community development needs in Puna. The project discussed here focuses on the *ahu'pua'a* and *kauhale*, which are reflective of Indigenous intelligence in planning sustainable communities.

Indigenous intelligence in the production of the built environment represents generative codes. These systems provide an alternate epistemology to learn from in order to find solutions to our contemporary affordable housing crisis. To date, the *kauhale* system has been implemented as a culturally appropriate way to address the houseless issue in Hawai'i, showing promise in providing affordable housing. Yet, regulatory frameworks based on continental planning models of the United States hinder the expansion of Indigenous intelligence in the built-environment to meet the needs of low to middle income families that do not meet the requirements for public subsidized housing. While the research project focuses on the development of a *kauhale* housing model based on Moana epistemologies, it provides recommendations to address regulatory roadblocks of the settler colonial state, such as financing, construction processes, and building equity.

The research analyzes existing housing typologies and coinciding land uses, through a transect study of the Puna district of Hawai'i county. Dwelling is analyzed at the family scale, which is inclusive of multi-generational housing and nontraditional household structures; dwelling also takes into consideration the full scale of everyday activities and resource-use beyond the conventional single-family-home, land parcel. The field methods include the documentation of housing by typology, the documentation of agroforestry and agricultural uses at the family scale, household interviews, and a follow up survey. Kanaka 'Ōiwi organization, Ho'oulu Lahui and Vibrant Hawai'i are assisting in the identification of community participants in the research that provide a cross-section of Puna. Multi-layered mapping analysis will then be used to understand the spatial relationships of housing typologies and household-based land use to better understand their occurrences in relationship to land use and building regulations.

Framing housing as a land-based practice, the goal of the project is to emphasize Kanaka 'Ōiwi epistemologies within resilience frameworks that contribute to the recovery while addressing the contemporary housing crisis. Two projected outputs for the community-based research project are the development of educational material that translates complex planning issues into accessible information for residents and the development of a Kauhale toolkit that draws from millennia of Indigenous intelligence and takes in consideration the needs and preferences of a culturally diverse community, inevitably weaving Indigenous knowledge and technological advances in the built-environment disciplines. The toolkit will support the current code under review for the state legislature to allow for this type of development. The structure of a Kauhale development regulation allows for many smaller units to be developed on parcels, including structures that provide amenities such as meeting rooms, laundry facilities, health clinic, commercial 'imu, and more. The Kauhale model provides a promising response to the 15 minute village, but based on place-based knowledge of the environment that is integrated within ecologically sustainable principles of Waiwai (abundance).

Citations

- Homelessness; Housing; Services; Kauhale Program; Hawaii Public Housing Authority; Appropriation (\$), HI SB3018, 31st Legislature, 2022, https://www.capitol.hawaii.gov/measure_indiv.aspx?billtype=SB&billnumber=3018&year=2022
- Minerbi, Luciano. "The Enduring Cultural Landscape: Ahupua'a and the Kauhale Planning for the Hawaiian Islands." (1997): 16-20.
- Connelly, S. (2020). *Our City as Ahupua'a: For Justice-Advancing Futures*. Honolulu: University of Hawai'i Press and the Center for Biographical Research.
- MEMMOTT, P., & DAVIDSON, J. (2008). Exploring a Cross-Cultural Theory of Architecture. *Traditional Dwellings and Settlements Review*, 19(2), 51–68.
- Simpson, L. (2017). *As we have always done: Indigenous freedom through radical resistance*. University of Minnesota Press.

Key Words: housing, Indigenous planning, affordable housing, kauhale, ahu'pua'a

MEXICAN HOUSING STOCK: UNDERUTILIZED?

Abstract ID: 1973

Individual Paper Submission

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Among the multiple problems of housing in Mexico, there is a paradox that is morally unavoidable due to its social effects. Despite having the highest production of housing in the last 20 years, the housing deficit is not solved and yet the forms of expression of housing needs have diversified. It is a condition of staggering production in the market of low-income housing that leads to the paradox of having increasing housing needs, while having strong surpluses.

In this sense, the underutilization of housing is a current problem preceded by old cultural, cyclical practices and new demographic trends, as well as the intense Federal Housing Policy of the first decade of this century. The underutilization is observed in: large dwelling houses that have decreased their average of inhabitants, which at the national level maintain a downward trend of an average of 4.4 (INEGI 2000) occupants by housing units to 3.6 (INEGI 2020) occupants by housing units. Of the 41.6 million homes in the country, 19.2% are abandoned (INFONAVIT 2019), that is, 8.2 million homes (INEGI 2020).

However, in its origin the problem is more complex, since both underutilization and abandonment respond to multiple causes. In this paper these causes are traced in order to explain the phenomenon: the demographic cycles of both aging and the formation of new households; more cost-effective land-use pressures; the dynamics of social deterioration in some neighborhoods. Empty houses are usually linked to the poor functionality of remote urbanizations; financial problems linked to the unstable economy; problems of insecurity; problems of abandonment

of urbanizations in process; invasions; and legal problems.

As a result, there is a high population loss in central municipalities in tandem with the fact that cities with more houses built with federal housing funding are experiencing higher vacancy rates (Monkkonen 2019).

The problem is concentrated in metropolitan areas where population agglomerates. The metropolitan dynamics of housing markets do not recognize municipal borders, therefore in these conglomerates, the incipient municipal actions in the housing sector have immediate effects on neighboring territories, where they hold a fierce competition.

In this paper we attempt to characterize the low-income housing underutilization in metropolitan Mexico by conducting an analysis of Metropolitan Guadalajara, Mexico in both central and peripheral neighborhoods. In the analysis key stakeholders are interviewed in order to identify social, institutional, entrepreneurial and academic dynamics, as well as their perceived ways to solve the problem.

The paper concludes with recommendations for policy making for metropolitan areas involving stakeholders at the municipal, state and federal levels.

Citations

- Monkkonen, P. (2018). Empty houses across North America: Housing finance and Mexico's vacancy crises. *Urban studies*, 1-16. doi:10.1177/0042098018788024
- Munda, G., (2003) Social Multi-Criteria Evaluation. UHE/UAB Barcelona. https://ddd.uab.cat/pub/estudis/2003/hdl_2072_1206/UHE15-2003.pdf
- Sabatini, F., & Vergara, L. (2018). ¿Apoyo a lugares o apoyo a personas? Dos proyectos chilenos de vivienda socialmente integrada. *INVI*, 9-48.
- INEGI. (2019) Encuesta Nacional de Ingresos y Gastos de los Hogares. ENIGH 2018. Tabulados de hogares y viviendas. Aguascalientes.
- INFONAVIT (2019) Reporte anual de vivienda. <https://cutt.ly/sjfYkGm> Consultado 20, diciembre 2020.

Key Words: Low-income housing, Metropolitan planning, Mexico

ADMINISTRATIVE BURDENS IN EMERGENCY RENTAL ASSISTANCE PROGRAMS

Abstract ID: 1974

Individual Paper Submission

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Since the onset of the COVID-19 pandemic, localities across the United States have been given unprecedented amounts of rental assistance funding for their residents and considerable flexibility in these funds' distribution. Emergency rental assistance (ERA) programs have varied widely in terms of how they conduct outreach, how tenants or landlords apply, the form the assistance takes, and to whom it is ultimately provided. The emergency nature of these programs—which are rendered urgent by the risk that unassisted tenants will be evicted during a pandemic—as well as the shallowness and temporary nature of the subsidy suggest that the administrative burden placed on participants should be lower than it is in typical housing programs such as the Housing Choice Voucher program. Yet ERA programs still face the “double take-up challenge” characteristic of programs designed to assist renters; they must engage both tenants and landlords. In addition, many ERA program regulators and administrators only have prior experience with non-emergency rental assistance, including vouchers, and may face challenges adjusting to a less burdensome model or accepting a higher risk of fraud.

This paper uses results from a national survey of over 200 ERA programs, as well as 15 case studies representing a broad cross section of ERA programs, to identify common sources of administrative burden for both tenants and landlords and to explore how these burdens relate to program outcomes, such as incomplete applications and landlord non-participation. The effects of federal funding guidelines and national and local eviction moratoria on the allocation of administrative burden in ERA programs are considered. We then use Census and publicly available administrative data to examine whether variation in administrative burden across jurisdictions correlates with political context, racial segregation or composition, the presence of immigrants, and jurisdiction size and governmental capacity. We pay special attention to the relationship between tenant and landlord administrative burdens, and how increased burdens on one party may increase or decrease burdens for the other. Finally, drawing on case study interviews with program administrators, we discuss strategies to alleviate administrative burdens on tenants and landlords without unduly heightening the risk of fraud.

In studying the sources of ERA programs' administrative burden, its consequences, and its drivers, this paper

provides information of immediate value to policymakers at the local and state levels as they continue to disburse federal rent relief funds. It also informs federal policymakers who must set parameters for future funding. More broadly, it takes advantage of a vast national experiment in the provision of rental assistance programs to shed light on how policymakers can increase equitable participation in housing programs by managing the burdens they place on both tenants and landlords.

Citations

- Aizer, Anna. 2003. "Low Take-Up in Medicaid: Does Outreach Matter and For Whom?" *American Economic Review Papers and Proceedings* 93(2): 238-41.
- Barnes, Carolyn Y. 2021. "It Takes a While to Get Used to': The Costs of Redeeming Public Benefits." *Journal of Public Administration Research and Theory* 31(2): 295-310.
- Herd, Pamela and Donald P. Moynihan. 2018. *Administrative Burden: Policymaking by Other Means*. New York: Russell Sage Foundation.

Key Words: Rent relief

CIVIC MOBILIZATION IN THE FACE OF HOUSING FINANCIALIZATION: A COMPARATIVE STUDY OF HOUSING STRUGGLES IN MEXICO AND BRAZIL

Abstract ID: 1979

Individual Paper Submission

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The appropriation of the housing sector by global finance has transformed housing policies worldwide while leading to new opportunities for capital accumulation. Market-based housing finance models have become increasingly prevalent in both the Global North and Global South. These models have promoted mortgage and household debt, the commodification of housing, and the liberalization of credit, as well as the socialization of its costs. In several Global South countries, this approach to housing production at a mass-scale has resulted in poor-quality housing in peri-urban locations with inadequate access to infrastructure, services, and other basic needs for low-income residents. Such policies have also excluded the lowest-income households unable to access credit. At the same time, and despite adversity, civil society organizations, as well as social movements, have worked within such contexts to address and challenge some of their consequences on the ground and advocate for housing rights. This study comparatively examines the repertoires of collective action and narratives of such civic and housing struggles and mobilizations in Mexico and Brazil in the face of varied housing financialization processes. In both countries, national housing policies have adhered to financial models to boost market-led growth and private means of housing production. Initial findings include discussions about critical differences and commonalities between the two countries and a reflection on the scope, scale, outcomes, significance, and limitations of housing mobilizations in the wake of financialized policies and processes. The accomplishments and constraints of housing movements and grassroots mobilization provide important lessons about the current state of urban change politics in the age of financialization.

Citations

- Wijburg, G. (2020). The de-financialization of housing: Towards a research agenda. *Housing Studies*, 1-18.
- Fields, D. (2017b) Urban struggles with financialization, *Geography Compass*, 11(11), e12334–13.
- Reyes, A. (2020). Mexico's Housing Paradox: Tensions Between Financialization and Access. *Housing Policy Debate*, 1-26.
- Earle, L. (2017). *Transgressive citizenship and the struggle for social justice: The right to the city in São Paulo*. Palgrave Macmillan.
- Castells, M. (1983). *The city and the grassroots: A cross-cultural theory of urban social movements* (No. 7). Univ of California Press.

Key Words: housing, civic mobilization, financialization, Mexico, Brazil

FINANCIALIZING AUSTIN: TRACKING THE ROLE OF INSTITUTIONAL INVESTORS IN THE RENTAL HOUSING MARKET

Abstract ID: 1982

Individual Paper Submission

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Considering the growing financialization of the multifamily rental housing market in the United States and globally, it is critical to fully understand the scale of financialization and develop research methods that can help assess this phenomenon (Fields, 2017; Fields & Uffer, 2016; Wijburg, Aalbers & Heeg, 2018). There is limited research that explores financialization in the Southern and Southwestern United States, particularly in the market-affordable, multifamily rental market (Chilton, Silverman, Chaudhry, & Wang, 2018; Raymond, Miller, McKinney & Braun, 2021). Research in these parts of the country is critical to understand the full scale of financialization in the non-coastal United States and the geographic areas where this is occurring. It is key to assess this in cities such as Austin, where affordable housing regulatory tools like rent control, inclusionary zoning, and linkage fees are illegal due to laws created by the State of Texas. At the same time, defining and assessing the scale of the financialization of the multifamily housing market and its link to neighborhood characteristics poses specific issues with tracking the activities of institutionalized companies and investors within these contexts.

To address this issue, this paper presents an approach to identifying properties within the multifamily rental housing market in Austin that are under the ownership of institutional investors. This information is further combined with demographic and neighborhood-level data to present a full picture of the scale and geographies of financialization in the city. To achieve this, ownership data from the Travis County Appraisal District (TCAD) is combined with market data from Austin Investor Interests, a firm providing local data to investors, brokers, and other real estate professionals. Any gaps in information on ownership are filled with data from the Texas Secretary of State corporate filings and data from the Texas Public Utilities Commission. Information on ownership is then used to identify connections with investment firms and umbrella corporations, focusing on investors with multiple holdings and the ability of institutional landlords to access capital. This list of financialized multifamily rental housing properties in Austin is analyzed within the context of neighborhood characteristics, including demographics, susceptibility to gentrification, and income characteristics. The research highlights the prevalence of financialized investments in the multifamily rental housing market in Austin, linking it to areas facing rapid market growth and gentrification. This research lays out pathways for other communities to make similar assessments of the scale of financialized investments in their jurisdictions, particularly where publicly available ownership data is limited. Most importantly, this research is key to understanding the prevalence of the financialization of multifamily housing in Austin and the Southwestern United States more generally, as well as the demographic and social context in which this is occurring.

Citations

- Chilton, K., Silverman, R. M., Chaudhry, R., & Wang, C. (2018). The impact of single-family rental REITs on regional housing markets: A case study of Nashville, TN. *Societies*, 8(4).
- Fields, D. (2017). Unwilling subjects of financialization. *International Journal of Urban and Regional Research*, 41, 588–603. <https://doi.org/10.1111/1468-2427.12519>
- Fields, D., & Uffer, S. (2016). The financialisation of rental housing: A comparative analysis of New York City and Berlin. *Urban Studies*, 53(7), 1486–1502. <https://doi.org/10.1177/0042098014543704>
- Raymond, E. L., Miller, B., McKinney, M., & Braun, J. (2021) Gentrifying Atlanta: Investor Purchases of Rental Housing, Evictions, and the Displacement of Black Residents. *Housing Policy Debate*, 1-17. <https://doi.org/10.1080/10511482.2021.1887318>
- Wijburg, G., Aalbers, M. B. and Heeg, S. (2018). The financialisation of rental housing 2.0: Releasing housing into the privatised mainstream of capital accumulation. *Antipode*, 50, 1098-1119. <https://doi.org/10.1111/anti.12382>

Key Words: Financialization, Rental Housing Market, Market-Affordable Housing, Institutionalized Investors

THE IMPACT OF LIVED EXPERIENCE ADVISORY GROUPS

Abstract ID: 2025

Individual Paper Submission

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In the last several years cities throughout North America have struggled with increasing levels of housing instability and homelessness. Some municipalities and programs have experimented with participatory methods, including methods borrowed from social sciences and service design, with people with lived experience of homelessness to help plan, design, guide, and evaluate projects (Hatch, 2014). These initiatives are typically motivated by a desire to improve services and programs by collaborating with people who have firsthand knowledge and experience (Norman et al, 2015). I propose that the actual impacts and benefits extend beyond direct program improvement by providing significant benefits for the participants themselves and building deep empathy that improves practice (Forester, 2021).

Since 2017, Austin's Downtown Community Court, a diversion court created to handle misdemeanor offenses that frequently are co-occurring with homelessness, has managed the Austin Homeless Advisory Committee (AHAC) to inform its operations and provide input on other projects throughout the City. As one of the initial organizers of this

advisory group I use reflection and hermeneutics, interviews with past and current City staff, and participatory research with the Advisory Group to understand the impact that AHAC has had for the City of Austin, staff, and advisory group members. This impact is theorized in four areas: shaping policy, as originally intended; mutual aid and support between members, an effect that emerged early in the program; improving the member's long-term housing stability; and embedding a reservoir of empathy and kindness within the City and which improves judgment.

I argue that these impacts come, broadly, from improvements in the advisory committee member's social capital which is a product specifically of building and participating in a supportive community, regularly engaging with program administrators, especially during the pandemic when the risk of isolation and alienation were high, and participants building a network of service providers and City employees who they can access and mobilize to their aid when needed. There are also enduring positive impacts for City staff to develop deep empathy and kindness which can then be applied in practice to improve programmatic judgment and sometimes bridge the marginalization and stigmatization that people experiencing homelessness often encounter in City services.

As a result of these benefits, I recommend that: 1) communities and programs consider ways to support the development or expansion of participatory advisory groups for their direct benefits to the City and the participants; 2) Cities and service providers invest in experimental projects that seek to build social capital for people experience or formerly homeless as a means to improve their long-term housing stability and outcomes; 3) Programs and staff who are not involved in direct service seek out and create opportunities to work with the populations they serve to improve their programmatic instincts and practice kindness in their planning activities.

Citations

- Forester, John. (2021). Our curious silence about kindness in planning: Challenges of addressing vulnerability and suffering. *Planning Theory*, vol 20(1), 63-83.
- Hatch, J. (2014). (rep.). The Lived Experience Circle An Advisory Committee of the At Home/Chez Soi Project's Winnipeg Site. Retrieved April 4, 2022, from <https://winnspace.uwinnipeg.ca/handle/10680/784>.
- Norman, T., Pauly, B., Marks, H., & Palazzo, D. (2015). Taking a leap of faith: Meaningful participation of people with experiences of homelessness in solutions to address homelessness. *Journal of Social Inclusion*, vol 6(2), 19-35.

Key Words: participatory planning, lived experience advisory groups, people experiencing homelessness, housing stability, social capital

THE DISCUSSION ON MISSING MIDDLE: IS IT REALLY WHAT WE NEED IN TORONTO FOR AFFORDABILITY?

Abstract ID: 2034

Individual Paper Submission

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The ongoing housing crisis in Toronto has become a significant case that everyone including politicians and the construction industry acknowledges existence. Even though the ongoing crisis has a severe impact on the socio-economic life in Toronto, there is still no proper policy choice that would reverse this process. The discussion is often linked to the problem of supply as many politicians and industry people argue that there is not enough housing inventory to cool down the prices (Üçoğlu, Keil and Tomar, 2021). In this context, a debate of what is coined the missing middle has emerged (Missingmiddlehousing, 2019), where the focus is on planning and zoning restrictions of the city within single-family home zoned areas. Meslin (2019), for instance, argues that historically Toronto has chosen to be a city of predominantly single-family homes and has disregarded the importance of apartments to create an affordable city. While between the 1960s and 1980s policies were pushed forward to build high-rise apartment towers along major traffic lines, complementing the single-family home zoned areas in the rest of the city, advocates of the missing middle argue that in order to overcome the current housing crisis, one needs to convert existing single-family homes into 2-4 story townhouses in areas where it is zoned for single-family home use (Bozikovic et al., 2019).

In a similar vein, Lorinc (2019) argues that the ongoing affordability crisis is due to the restrictive zoning policy where in many neighborhoods zoning allows the construction of only low-rise detached and semi-detached houses, which, he argues, has a direct impact on the housing supply. Instead, he suggests, there needs to be a new option in form of townhouses as this planning based on 2-4 story middle size housing would increase the supply while keeping the neighborhood landscape intact. Most recently, the provincial and federal governments came forward with policies to increase the supply of housing in order to alleviate the housing crisis.

In this presentation, I take a different position and argue that increasing supply would not be the key antidote to creating an affordable housing system in Toronto. In contrast to the advocates of the missing middle who support the market-oriented approach, claiming that more supply will decrease the housing prices, I see the neo-classical model,

which is based on the assumption to reach market equilibrium through an ideal supply-demand relation, as failing. In fact, housing is a unique type of product and even though the market finds an equilibrium, that equilibrium can still be unaffordable. For that reason, the discussions on the missing middle are still not able to find a proper response to the affordability crisis. At the same time, it is also important to point out that the construction of more high-rise condominium buildings will not bring affordability to the city. Therefore, based on this discussion I will seek to answer the following: 1) How to evaluate the discussion missing middle vis-à-vis the supply-demand restrictions. 2) Are 2-4 storey townhouses what we need in Toronto to create an affordable and inclusive housing system? 3) What kind of planning do we need to provide affordability while absorbing more middle-size and mid-rise housing models?

This work is based on a careful reading of the literature on densification and affordability, and in particular on the debate around the missing middle. I also will integrate the most recent policy documents that were put forward by both the provincial and the federal governments in order to address the affordability crisis. I will choose a case study in Toronto (the Danforth neighborhood), where I will conduct interviews with stakeholders in regard to the questions above.

Citations

- Bozikovic, A., Case, C., Lorinc, J. and Vaughan, A. (2019). *House Divided: How the Missing Middle Can Solve Toronto's Affordability Crisis*, Toronto: Coach House Books
- Meslin, G. (2019). "A City of Houses", Bozikovic, A., Case, C., Lorinc, J. and Vaughan, A. (eds.) *House Divided: How the Missing Middle Can Solve Toronto's Affordability Crisis*, Toronto: Coach House Books, pp. 91-99
- Missing Middle Housing., (2019). <https://missingmiddlehousing.com/>
- Lorinc, J. (2019). "Introduction: The Stability Trap", in Bozikovic, A., Case, C., Lorinc, J. and Vaughan, A. (eds.), *House Divided: How the Missing Middle Can Solve Toronto's Affordability Crisis*, Toronto: Coach House Books, pp. 12-27
- Üçoglu, M., Keil, R. and Tomar, S. (2021). "Contagion in the Markets? Covid-19 and Housing in the Greater Toronto Area", *Built Environment*, 47: 3, pp. 413-424

Key Words: housing crisis, affordability crisis, missing middle, housing in Toronto, housing supply

LIVING ON THE EDGE: THREATS TO HEALTH AND STABILITY FACED BY RESIDENTS OF "NATURALLY OCCURRING" AFFORDABLE HOUSING IN AUSTIN, TEXAS

Abstract ID: 2059

Individual Paper Submission

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Until recently, little attention has focused on the conditions facing low-income renters unable to access housing assistance programs. Yet most low-income people live in unsubsidized rental housing that is affordable to them due to poor conditions or poor location rather than through access to a public program or subsidy. In many places, prior to the pandemic, residents were also easily evicted. The pandemic has highlighted the importance of both housing conditions and housing stability to the lives of low-income renters. Yet existing evidence on conditions, available through the US Census, continues to underemphasize the prevalence of poor conditions. And data being collected by local advocates for residents facing eviction, in addition to the US Census Bureau's Pulse data, suggest that the threat to housing stability posed by evictions is also widespread among low-income renters. In this paper we examine the prevalence and location of housing with conditions posing threats to health, and of evictions. Our central research question is: How are poor conditions and threats to stability facing unprotected low-income renters related to gentrification-induced displacement pressures? We hypothesize that in neighborhoods most vulnerable to such pressures (defined in previous research), owners of class c properties have little incentive to address such conditions and—when the time is right—will use evictions as a tool in repositioning buildings for higher rent market segments. Using locally collected data on eviction filings and proprietary data on building ownership and sales we will identify and describe the relationship between eviction filings, gentrification pressures and building ownership (by identifying high evictors and also by identifying the type of owners more likely to file evictions, especially in gentrifying areas). We will then overlay these data on information on housing related health problems, such as asthma. Since information on the incidence of asthma is only available in aggregate spatial form (census tract level), we will supplement this with information on the location of code violations related to asthma-inducing conditions. Together, our results will allow to describe the incidence of poor conditions and evictions in such properties/neighborhoods, and assess relationships between these factors and location in a neighborhood identified as in the process of gentrification.

Citations

- H. Way, E. Mueller and B. Martin. “Uprooted: Local Efforts to Mitigate Displacement in Gentrifying Neighborhoods,” *Journal of Affordable Housing and Community Development Law*, 28, 1 (2019): 17-47.
- Bonnefoy, X. (2007). Inadequate housing and health: an overview. *International Journal of Environment and Pollution*, 30, 3-4, 411-429.
- Baker, Kermit. (2013) The return of substandard housing. *Housing Perspectives: Research, trends, and perspectives from the Harvard Joint Center for Housing Studies*.
- Desmond, M. (2016). *Evicted: Poverty and profit in the American city*. New York: Crown.
- Fields, D. & S. Uffer. (2016). The financialisation of rental housing: A comparative analysis of New York City and Berlin. *Urban Studies*, 53(7), 1486-1502.

Key Words: housing conditions, evictions, gentrification, financialization, housing stability

Track 6 Posters

A TALE OF TWO AUSTRALIAN CITIES: SHORT-TERM RENTAL’S PROFESSIONALIZATION AND HOUSING MARKET IMPACTS

Abstract ID: 1559

Poster

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Short-term rental (STR) has experienced remarkable global growth over the past decade given the rapid diffusion of the platform-based, on-demand sharing economy. In Australia, STR has emerged as a popular casual rental housing option for recreational, business, and social purposes. In the urban planning community, concerns over the unregulated growth of STR are often tied to (1) the substitution effect of STR on the long-term rental (LTR) sector (Gurran and Phibbs, 2017), and (2) transactional gentrification through real estate investment into STR (Sigler & Wachsmuth, 2020). Empirical evidence from the U.S. and Canada confirms that STR, during the early rapid market expansion phase, imposes significant pressure on rent, housing prices, and housing stock, especially in major tourist cities (Wachsmuth & Weisler, 2018; Zou, 2020). Covid-19 imposed an unprecedented impact on STR with a severe decline in bookings – a situation that has begun to shift in more recent months as countries begin to relax domestic and international travel restrictions.

In this study, we examine the STR market in Australia over a 5-year period (2015 to 2020) placing a particular focus on two cities in the state of Queensland, Brisbane and Sunshine Coast. Brisbane is both a major tourist city and a regional economic/activity center, and Sunshine Coast is a major coastal tourist destination. The two areas’ STR growth over time and space can be seen as a snapshot of STR’s unregulated growth in Australia. We are particularly interested in two perspectives: (1) the trend of professionalization in the Australian STR market, which is reflected by an increasing share of active listings, a growing reservation rate among active listings, and a steady revenue stream for professional hosts; and (2) the potential spillover effect of professionalized STR on the LTR housing market.

We apply an empirical framework in this study to examine monthly bookings from the largest global STR platform, Airbnb. The time trends of professional Airbnb listings, reservation growth rate, and average revenue growth are measured, along with the strong seasonal trend and heterogeneities among different listing and property types. Through averaging the reservation intensity and weekly revenue for professional STR listings at the postal code level and performing a spatial comparison to LTR transaction intensities and median rent level, we explore the potential interactions between the two rental markets, such as spatial (dis)similarities in locational choices, and make inferences on the intensifying competition between STR and LTR at desirable locations for both markets.

Initial findings reveal that, while the Australian STR market growth has slowed down since 2019 in terms of the number of active listings, a strong trend of professionalization in STR business arises, regardless of a major tourist destination or a major metropolitan area. Observed fluctuations in seasonal bookings and rent premium are more prominent in the Sunshine Coast compared to that of Brisbane. Intensified STR activities generate a substantial revenue stream for an average professional Airbnb listing. In many STR hot spots, the STR revenue level is competitive against the median LTR rent level. The housing market implication is that, potentially, a number of properties that could have accommodated long-term renters are used exclusively for STR business, triggering the

broader housing policy debate over the necessity of regulating the Australian STR market. Specifically, we would like to discuss whether the combination of the recovering tourism from the pandemic, the shortage of new housing constructions, and the decentralized 21st century economy would further boost professional STR activities. In such case, the housing policy discussion is needed to then justify a regulatory framework to disincentivize the overheated STR investment that could negatively impact the LTR housing market beyond the immediate future.

Citations

- Gurran, N., & Phibbs, P. (2017). When tourists move in: how should urban planners respond to Airbnb? *Journal of the American Planning Association*, 83(1), 80–92. <https://doi.org/10.1080/01944363.2016.1249011>
- Sigler, T., & Wachsmuth, D. (2020). New directions in transnational gentrification: tourism-led, state-led and lifestyle-led urban transformations. *Urban Studies*, 57(15), 3190–3201. <https://doi.org/10.1177/0042098020944041>
- Wachsmuth, D., & Weisler, A. (2018). Airbnb and the rent gap: gentrification through the sharing economy. *Environment and Planning A*, 50(6), 1147–1170. <https://doi.org/10.1177/0308518X18778038>
- Zou, Z. (2020). Examining the impact of short-term rentals on housing prices in Washington, DC: implications for housing policy and equity. *Housing Policy Debate*, 30(2), 269–290. <https://doi.org/10.1080/10511482.2019.1681016>

Key Words: short term rental (STR), Airbnb, rental housing market, housing policy, Australia

PUBLIC HOUSING REDEVELOPMENT AND RELOCATION: A COMPARATIVE CASE STUDY OF PUBLIC HOUSING TRANSFORMATION IN CHICAGO AND TORONTO

Abstract ID: 1727

Poster

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Public Housing Redevelopment and Relocation asks the question "Does the border make the difference?" when it comes to public housing transformation. This dissertation research will look at the tenant relocation and site return processes of two public housing developments; Regent Park in Toronto, Canada, and Cabrini-Green in Chicago, United States.

This study looks to address the literature gap in policy studies and scholarship on the connection between relocation policies and how redevelopment outcomes are achieved. This study will also explore well-studied sites in Canada and the United States but often have not been studied in terms of their similarities and what policymakers and public housing practitioners can learn from their neighbors.

This study will use a comparative case study approach to understand how these two cities handled contentious public housing redevelopments when their respective national governments privatized their public housing and transferred the control of their sites to local authorities. This study seeks to understand why some contemporary public housing redevelopments relocate residents into the private housing market versus bringing tenants back to their home sites, why planners make such decisions, and what planners can learn from these redevelopment processes.

Citations

- August, M. (2016). Revitalisation gone wrong: Mixed-income public housing redevelopment in Toronto's Don Mount Court. *Urban Studies*, 53(16), 3405–3422. <https://doi.org/10.1177/0042098015613207>
- Goetz, E (2013) *New deal ruins: Race, economic justice, and public housing policy*. Ithaca, NY, Cornell University Press
- Goetz, E. G. (2013). The audacity of HOPE VI: Discourse and the dismantling of public housing. *Cities*, 35, 342–348. <https://doi.org/10.1016/j.cities.2012.07.008>
- Joseph, M., Chaskin, R. (2012). Mixed-income developments and low rates of return: Insights from relocated public housing residents in Chicago. *Housing Policy Debate*. 22. 377-405. [10.1080/10511482.2012.680479](https://doi.org/10.1080/10511482.2012.680479).
- Smith, J. L. (2000). The space of local control in the devolution of US Public Housing Policy. *Geografiska Annaler: Series B, Human Geography*, 82(4), 221–233. <https://doi.org/10.1111/j.0435-3684.2000.00084.x>

Key Words: Public Housing, Mixed-Income Housing, Displacement, Local Control, Privatization

ELDERLY SHARED HOUSING WITH THE LOCAL COMMUNITY SUPPORTS IN JAPAN

Abstract ID: 2047

Poster

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Background:

Elderly shared housing (EGL), which differs from general senior citizen facilities and housing, is a way of living where the loneliness of living alone is eliminated and people can lead a daily life with home cooking and conversation, and is characterized by the fact that it practices a different style of living from senior citizen facilities and housing that aim to provide efficient care. However, as residents have aged, the number of cases requiring care has increased. The need has arisen to expand options to continue living in EGL while maintaining the characteristics of EGL and collaborating with the local community supports. The aim of this paper is to provide insight into specific measures to address this need.

Methods:

The study conducted a survey among 50 residents and 7 operators of seven EGLs in Japan. We analyzed personal networks, the actual conditions of daily living and supports, how to solve problems of daily living, and cooperation with the local community supports. In addition, care support coordination was studied in depth in EGL A, where all residents indicated that they were not inconvenienced by activities of daily living, despite the relatively high in age, therefore, the most challenging. The research methods employed in the study, were a survey using a self-administered questionnaire, semi-structured personal interviews using interview schedules, and participation observation. Data collection was conducted during April and July, 2021. Out of a total of 54 questionnaires that were distributed, 50 were collected and 50 valid responses were recorded.

Result:

We discussed specific measures to expand the options for continuing to live in EGL, while maintaining the characteristics of EGL and coordinating with the local community supports.

Collaboration with life support providers, that can flexibly create supports and find other supports according to needs, do not only fill gaps in supports provided by long-term care insurance, but also improves the quality of life, which can lead to residents' peace of mind.

Through daily interactions, EGL staffs, residents, local care managers, helpers, and community members have passed on to the operators in EGL information about residents collected. The quality and quantity of information can be said to be based on daily communication. The gentle watchfulness of many people involved in EGL has led to awareness of residents' concerns and changes in their physical condition, and those awareness in turn have led to support to residents. This is thought to be due to the small scale of the EGLs and the mutual acquaintance of the residents.

It is also necessary to expand the network with residents and increase the number of supporters. One way to do this would be to encourage residents and community members to participate in hobby classes and events held at EGL.

In EGL, residents help each other on a daily basis. Over time, the care needs of the residents being assisted increase, and at the same time, the residents offering assistances also increase in age, and their physical and mental conditions change. Consideration must be given as not to place a burden on the caregivers, as well as not to place an emotional burden on the residents being supported.

Citations

- Doihara, N: Independence in the elderly group living in Japan, ACSP 2016 annual conference, The association of collegiate schools of planning, Abstract ID: 990, 2016
- Miyano, J: Attempt at elderly shared housing in Japan, ACSP 2020 annual conference, The association of collegiate schools of planning, Abstract ID:69, 2020
- Doihara, N: Management impact of elderly shared housing in the community in Japan, ACSP 2021 annual conference, The association of collegiate schools of planning, Abstract ID: 621, 2021

Key Words: Elderly share housing, Local community, Life support, network, symbiosis

Track 7 – International Development Planning

Track 7 Pre-Organized Session Summaries and Abstracts for the Sessions

ADVANCING WATER INFRASTRUCTURE EQUITIES IN PRACTICE: CHALLENGES AND OPPORTUNITIES

Pre-Organized Session 50 - Summary

Session Includes 1274, 1275, 1276, 1277, 1278

CAROLINI, Gabriella [Massachusetts Institute of Technology, carolini@mit.edu, organizer]

Diverse water delivery stakeholders in low-, middle-, and high-income environments are struggling to meet the needs of the most marginalized communities in the context of growing urban inequalities, aging infrastructures, and climate change. Infrastructure planning in the water space across these environments is typically dominated by concerns around promoting efficiencies--in water use and in costs of delivery--through the introduction of new technologies, reform of regulations, and the benchmarking of performance. However, such a priority focus on efficiencies has often produced negative externalities from the viewpoint of advancing equities and reaching the most vulnerable residents across cities. In this session, we explore these challenges, as well as the promising potential address of them, across different income-level contexts including urban landscapes in South Asia, North America, and South America.

Objectives:

- Identifying obstacles to operationalizing equity in water infrastructure planning
- Highlighting conditions shaping plans to address water inequalities across different income contexts and geographies

URBAN UTILITY STRESS AND HOUSEHOLD VULNERABILITIES: UNDERSTANDING WATER AFFORDABILITY CHALLENGES IN US CITIES

Abstract ID: 1274

Abstract within Pre-Organized Session 50

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Crises tied to drinking water affordability, quality, and accessibility are on the rise in the twenty-first century in locations and economies where we might not expect them: cities in high-income countries. Drinking water is unaffordable and inaccessible for surprisingly many households in U.S. cities, for example. A survey of 20 of the largest U.S. cities and 10 regionally representative cities revealed that in the period from 2010-2018, the average monthly cost of water for a family of four using 50 to 150 gallons per person per day increased by over 50 percent. Another recent study estimates that 471,000 U.S. households (or 1.1 million individuals) lacked a piped water connection—and that 73 percent of such vulnerable households were located in metropolitan areas. In the 50 largest metropolitan regions, 53 percent of those without access were people of color and 61 percent were renters. Indeed, based even on the U.S. Environmental Protection Agency's own 4.5 percent of income affordability benchmark, one in ten households in the U.S. were faced with unaffordable water bills.

Water utilities across U.S. cities, much like many of the vulnerable, low-income households they serve, are also facing financial stresses. Updates to aging water infrastructure require massive capital investments, with costs in the U.S. estimated to be more than \$1 trillion dollars over the next 25 years. Further, not only do climate uncertainties make it difficult to accurately forecast water management costs, investments in stormwater management and resilience measures are increasing utilities' long-term capital costs. Without other funding besides user fees, expenses translate into rate hikes or new stormwater fees. In both cases costs are passed onto users, regardless of their ability to pay.

In this paper, we explore the structural dimensions driving the water affordability crisis in US cities. Targeting the poor is a long-standing concern in development studies, but what structural drivers of the urban water affordability

crisis are most relevant for understanding how to reach the most vulnerable households in U.S. cities? In this paper, we explore the broad picture of utility finances and urban costs of living across the U.S. to understand the landscape of structural drivers leading to water affordability challenges among poor urban households. More specifically, we study water tariff trends in composition, rate of change, and typology across 84 U.S. cities, as well as housing, income, labor, and population trends therein during the period between 2011 and 2020. We then present a deeper case study analysis of the more contextual factors underlying costs of operations (from the utility perspective) and costs of living challenges (from the household perspective) experienced in two U.S. cities, namely Seattle and Louisville. The findings of this analysis contribute to current debates about how to best direct new federal funding from the Infrastructure Investment and Jobs Act toward the most local levels of need within the water infrastructure space.

Citations

- Swain M, McKinney E, Susskind L. Water Shutoffs in Older American Cities: Causes, Extent, and Remedies. *Journal of Planning Education and Research*. February 2020.
- Walton, Brett. (2018) Price of Water: Utilities Revise Household Water Rate Formulas <https://www.circleofblue.org/2018/water-management/pricing/price-of-water-2018/>
- Meehan, Katie, Jason R. Jurjevich, Nicholas M. J. W. Chun, Justin Sherrill (2020) Geographies of insecure water access and the housing–water nexus in US cities. *Proceedings of the National Academy of Sciences* 117 (46) 28700–28707; DOI:10.1073/pnas.2007361117
- Mack, Elizabeth, Wrase, Sarah. (2017) A Burgeoning Crisis? A Nationwide Assessment of the Geography of Water Affordability in the United States. *PLOS ONE* 12(4): e0176645. <https://doi.org/10.1371/journal.pone.0176645>
- American Water Works Association. (2012, Feb). Buried No Longer: Confronting America’s Water Infrastructure Challenge. American Water Works Association. <https://www.awwa.org/Portals/o/AWWA/Government/BuriedNoLonger.pdf?ver=2013-03-29-125906-653>

Key Words: Water, utilities, affordability, urban poor, U.S.

UNDERSTANDING THE COMPLEXITY OF WATER EQUITY IN THE PITTSBURGH REGION

Abstract ID: 1275

Abstract within Pre-Organized Session 50

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The concept of “water governance” has gained prominence since the early 2000s as the world faces growing challenges: climate change, vast socio-economic disparities and environmental racism, aging infrastructure, etc. (Neto, 2022; Swain et al., 2020, Warner et al., 2020; Mack, et al., 2017; Pierce, et al 2021). One of the key questions that emerges around water governance is how to provide adequate water and sanitation services without compromising its affordability and equity to guarantee access to all? (González Rivas and Schroering, 2021).

This paper examines the challenges of implementing equity centered water governance in the 36 water authorities in the Pittsburgh region (Allegheny County). The authors analyze the existing local programs, identify the key principles that guide current practice, and contrast them to the principles outlined by the human right to water framework. In assessing the fit between this internationally recognized framework and the local practices and political realities, the paper identifies the challenges faced by local water systems as well as the potential opportunities that exist at the local level to implement equity centered water governance practices.

Citations

- González Rivas, M. and Schroering, C., 2021. Pittsburgh's translocal social movement: A case of the new public water. *Utilities Policy*, 71, 101230.
- Mack, E. A., & Wrase, S. 2017. A burgeoning crisis? A nationwide assessment of the geography of water affordability in the United States. *PloS one*, 12(1)
- Neto and Camkin, 2022. Transparency, regional diversity, and capacity building: cornerstones for trust and engagement in good water governance. *Water International*. Vol. 47, No. 2.
- Pierce, G., El-Khattabi, A. R., Gmoser-Daskalakis, K., & Chow, N. 2021. Solutions to the problem of drinking water service affordability: A review of the evidence. *Wiley Interdisciplinary Reviews: Water*, e1522.
- Swain, M., McKinney, E., & Susskind, L. 2020. Water s hutoffs in older American cities: causes, extent, and remedies. *Journal of Planning Education and Research*, 0739456X20904431.

Key Words: water affordability, water governance, human right to water, local water practices

PLANNING THE LIVED, IF NOT THE IDEAL: STREET-LEVEL OPERATORS' CONTRIBUTIONS TO PLANNING RESILIENT AND EQUITABLE WATER INFRASTRUCTURES

Abstract ID: 1276

Abstract within Pre-Organized Session 50

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Cities worldwide are pursuing low-carbon, climate-resilient development to adapt to climate change. On the one hand, climate change impacts water availability, but on the other, water availability and security are also critical for communities to remain resilient and adapt to changed conditions. Plans for climate-resilient water infrastructures overwhelmingly focus on producing physical infrastructures that withstand biophysical stresses. Planning scholarship analyzes the gendered, racialized, classed dimensions of infrastructure production or their impacts (Siemiatycki et al., 2020). Both plans and analyses tend to overlook everyday operations and maintenance issues that unfold over water infrastructures' long-life spans, with implications for users' water access and security.

Given this background, this paper examines everyday water infrastructure operations and maintenance practices in the city of Tiruppur, India, to theorize operations as a form of planning, and discuss how operations and maintenance contribute to resilience as the city faces chronic stressors--water scarcity and rapid urbanization. I also reflect on the relationship of such resilience to entrenched urban inequalities. My methodology entails primary data collection using direct observations, plan analysis, infrastructure mapping, shadowing street-level operators, and in-depth, semi-structured interviews with 48 informants involved in water infrastructure production and operations in the city. Based on my findings and analysis, I contend that operations and maintenance activities are crucial aspects of water infrastructure planning. They exemplify planning as a form of incremental social learning (Friedmann, 1987), even if these activities and the labor involved are largely unrecognized in plans for producing the modern infrastructure ideal or get reduced to budget line items.

In Tiruppur, planning for operations occurs at the street-level, in propinquity with infrastructure users, and is disconnected from infrastructure production that occurs at a distance. It is highly contextual, contingent on socio-material conditions and relations, and draws on the embodied expertise, capacities, and social relations of street-level actors (watermen) to 'stretch' inadequate infrastructures and under-resourced bureaucracies to fashion resilience (Anand, 2017; De Coss-Corzo, 2021). Planning at the street-level also involves unique politics as the street-level is a key site for producing, maintaining, and contesting urban inequalities (Alda-Vidal et al., 2018). It reveals the aspiration and capacity of bureaucratic actors at the street-level to pursue progressive, equity planning goals through their practice (cf. Sotomayor and Danieri, 2018). In conclusion, this paper argues for re-centering operations and maintenance practices in planning just, climate-resilient water infrastructures and offers some recommendations.

Citations

- Anand, N. (2017). *Hydraulic city: Water and the infrastructures of citizenship in Mumbai*. Duke University Press.
- De Coss-Corzo, A. (2021). Patchwork: Repair labor and the logic of infrastructure adaptation in Mexico City. *Environment and Planning D: Society and Space*, 39(2), 237-253.
- Grasham, C. F., Calow, R., Casey, V., Charles, K. J., de Wit, S., Dyer, E., ... & Zaidi, H. (2021). Engaging with the politics of climate resilience towards clean water and sanitation for all. *npj Clean Water*, 4(1), 1-4.
- Sotomayor, L., & Danieri, A. (2018). The dilemmas of equity planning in the global South: A comparative view from Bangkok and Medellín. *Journal of Planning Education and Research*, 38(3), 273-288.

Key Words: water infrastructure planning, incrementalism, resilience, equity, India

WATER FOR WHOM? DECODING THE LINKS BETWEEN REGIONAL WATER PROVISION AND PRIVATE INVESTMENT IN THE BRAZILIAN NORTHEAST

Abstract ID: 1277

Abstract within Pre-Organized Session 50

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In 2020, the Brazilian government passed a wide-ranging legal and regulatory reform of the water and sanitation sector largely designed to support greater private investment (Cruxên, 2022). One of the reform's pillars was the notion of "regionalization" (regionalização), or the creation of "blocks" of municipalities to facilitate the provision (and concession) of public services at regional as opposed to municipal scales. In addition to supporting economies of scale, regionalization was positioned as a solution to the problem of extending service provision to poorer and less potentially lucrative areas by enabling the combination of what some referred to as "combining steak and bone"

(juntar filé e osso). This study examines the socio-economic rationales shaping the political organization of regional water and sanitation delivery arrangements via a case study of the construction and concession of services in the Grande Maceió metropolitan region in the northeast of Brazil—a region beset with precarious service coverage and related public health challenges, particularly among vulnerable communities (Silva et al., 2017). Drawing on critical analysis of preparatory studies, business plans, and legal concession documents, we explore (a) how the construction of regional arrangements reflects investors’ risk-return calculations; (b) the extent to which equity and ecological considerations inform the organization of regional concessions. This analysis will offer insight into the encoding (Pistor, 2020) of different planning and market rationalities in the (re-)creation of water governance and service delivery institutions in the South.

Citations

- Cruxên, I. A. 2022. *Disordering Capital: The Politics of Business in the Business of Water Provision*. PhD Dissertation, Massachusetts Institute of Technology.
- Pistor, K. 2020. *The Code of Capital: How the Law Creates Wealth and Inequality*. Princeton University Press, 2020.
- Silva, S.D.A., Gama, J.A.D.S., Callado, N.H. and Souza, V.C.B.D., 2017. Saneamento básico e saúde pública na Bacia Hidrográfica do Riacho Reginaldo em Maceió, Alagoas. *Engenharia Sanitária e Ambiental*, 22(4), pp.699-709.

Key Words: water governance, privatization, Brazil, inequality, sustainability

IMPROVING WATER AND SANITATION AFFORDABILITY THROUGH LIFELINE PROGRAMS: SUBNATIONAL INITIATIVES IN COLOMBIA

Abstract ID: 1278

Abstract within Pre-Organized Session 50

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Under what conditions do municipal governments develop and implement policies to improve the affordability by low-income individuals of water and sanitation services? Using mixed methods, I gathered data from ten Colombian cities to better understand the role of social movements, civil society organizations, and planners in pushing municipalities to adopt water and sanitation lifeline programs, how actors interact with city hall, city council, the courts, and the national government, and the characteristics of the municipalities that establish these programs. The literature on customer assistance programs (CAPs) such as lifelines has not looked at these issues in the global South comparatively from a subnational perspective (Cook, 2020; Cook et al, 2020). Instead, the existing literature on lifelines focuses on national-level mandates such as South Africa’s and Chile’s (Contreras et al, 2018; Muller, 2008) or case studies of municipal government initiatives (Vargas et al, 2018). The findings from this research contribute to our understating of the politics and institutions that structure the emergence and continuity of water and sanitation lifelines and the role of planners in mediating community demands for greater affordability.

Citations

- Contreras, D., Gómez-Lobo, A., & Palma, I. (2018). Revisiting the distributional impacts of water subsidy policy in Chile: a historical analysis from 1998–2015. *Water Policy*, 20(6), 1208-1226.
- Cook, J. (2020). Customer Assistance Programs and Affordability Issues in Water Supply and Sanitation. In *Oxford Research Encyclopedia of Global Public Health*.
- Cook, J., Fuente, D., Matichich, M., & Whittington, D. (2020). A Global Assessment of Nontariff Customer Assistance Programs in Water Supply and Sanitation. In *Development Studies in Regional Science* (pp. 315-371). Springer, Singapore.
- Muller, M. (2008). Free basic water—a sustainable instrument for a sustainable future in South Africa. *Environment and Urbanization*, 20(1), 67-87.
- Vargas, L., Mingoti, S., & Heller, L. (2018). Impact of a Programme for Water Affordability on Residential Consumption: Implementation of the “Programa Mínimo Vital de Agua Potable” in Bogotá, Colombia. *Water*, 10(2), 158.

Key Words: environmental justice, affordability, human right to water, global South, water and sanitation

EVERYDAY URBANISMS IN GLOBAL CONTEXTS

Pre-Organized Session 71 - Summary

Session Includes 1400, 1401, 1402, 1403, 1404

This session presents cases of everyday urbanism in a variety of urban settings throughout the Global South. We seek to explore the heterogeneous ways in which everyday urbanism may challenge dominant constructions of place, citizenship, and the urban. We show that community actors pursue everyday urbanism through assemblages of bodies, materials, and social systems, thus asserting their agency through relationships with places on their own terms and creating alternative geographies of urban form and forging innovative planning processes. We describe a range of everyday urbanism in a variety of urban settings in different world regions, including monumental spaces in Islamabad, Pakistan; formal public spaces in Beirut, Lebanon; gendered productive spaces in peri-urban Santo Domingo, Dominican Republic; community-developed public places in a consolidated informal settlement in Monterrey, Mexico; and Rohingya refugee settlements in Bangladesh. This diversity of cases allows us to demonstrate the ways in which everyday urbanisms emerge within specific, place-based contexts of violence, forms of governance, and material environments.

Objectives:

- Foster learning of everyday urbanism in informal contexts.
- Strengthen international dialogue about place-making.
- Provide critical insights into relations of power associated with place-making.

RE-IMAGINING COMMUNAL CITIZENSHIP THROUGH EVERYDAY PLACES IN ISLAMABAD

Abstract ID: 1400

Abstract within Pre-Organized Session 71

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“Faith, unity discipline”, “A planned, modern and Islamic nation”, “A modern day state of Madinah”: these are just some of the ways previous and current national governments have articulated a national direction for Pakistan and translated a vision of citizenship into the capital city’s built environment. In doing so, Islamabad has followed the pattern of other capital cities by paying homage to a single imagined national identity and community through their built form, conjured up by the designer/planner himself together with the leadership in power (Anderson, 1991; Vale, 2014). But, what does this mean for residents who are excluded from these neatly outlined national goals, particularly those living in neighborhoods that are non-Islamic, unmodern, and unplanned? Why are their spatial expressions of citizenship considered an intrusion on Islamabad’s development as Pakistan’s capital? I answer these questions by conducting a visual ethnography of France Colony, an informal settlement with predominantly low-income Christian residents located within a wealthy district in Islamabad.

France Colony has been a source of interest for many activists, scholars and the media, particularly because the community reflects broader intersectional religious, gender, and class disparities seen in the city and in the nation at large. In Islamabad, formally designed public spaces such as national monuments, parks, government housing, and places are constructed to serve Sunni Muslim-identifying men, while marginalizing other populations both in terms of representation and accessibility. As a result, women and religious minorities, including low-income Christian women from communities such as France Colony, have been targets of violence and crime in public spaces such as places of worship and gathering, storefronts, highways, and national monuments. Instead of incorporating representations of residents from such diverse communities as France Colony, official public spaces fail to reflect the intricate ways heterogeneous groups create and celebrate their identities in their vernacular spaces (Holston, 1998; Dovey, 2009; Mcfarlane, 2011).

To challenge this hegemonic discourse around national citizenship and its translation into exclusive public spaces, I am drawing on assemblage theory to build socio-spatial narratives of citizenship that refuse to be reduced to mere reactions to state inactions but instead constitute legitimate acts of agency (Mcfarlane, 2011; Dovey, 2009). Instead of understanding citizenship as a product of national, religious, or class ideals and narratives, I argue that alternative forms of citizenship emerge through the everyday urbanisms within cities like Islamabad. I use visual ethnography methods including photography and videography to capture some of these everyday spatial expressions of citizenship seen in places not considered spectacular or awe-worthy from the state’s perspective, such as churches, parks, storefronts, and other urban forms categorized as informal. I document places where residents gather, celebrate, and create, despite the state’s efforts to homogenize them as informal and unwanted.

By making visible communities facing intersectional vulnerabilities, this research seeks to create openings for their acceptance as legitimate citizens and political participants in Pakistan. This study also initiates conversations on ways plural and subaltern identities can be better represented in national spaces, while contributing to the broader discussion around how marginalized populations challenge national imagined communities and force states to rethink their definitions of ideal citizens and patriotism (Anderson, 1991).

Citations

- Anderson, B. (1991). *Imagined communities: Reflections on the origin and spread of nationalism*. Verso Books.
- Dovey, K. (2009). *Becoming places: Urbanism / Architecture / Identity / Power*. Routledge.
- Holston, J. (1998). Spaces of insurgent citizenship. *Cities and Citizenship*, 155-173. <https://doi.org/10.1215/9780822396321-008>
- McFarlane, C. (2011). The city as assemblage: Dwelling and urban space. *Environment and Planning D: Society and Space*, 29(4), 649-671. <https://doi.org/10.1068/d4710>
- Vale, L. (2014). *Architecture, power and national identity*. Routledge.

Key Words: Citizenship, Capital Cities, Assemblages, Urban Form

RIGHT TO THE CITY AND INSURGENT PLACE-MAKING IN BEIRUT, LEBANON

Abstract ID: 1401

Abstract within Pre-Organized Session 71

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Much of Beirut has been inaccessible to lower-income groups due to the privileging of capitalist urbanization and private development following the 1975 Lebanese Civil War. However, beginning on October 17, 2019, the streets of Beirut saw a wave of protests following a cabinet announcement of new tax measures on Internet voice-call services such as WhatsApp and Facebook Messenger (Sullivan, 2019). The tax increase came at a time when the economic health of the country was deteriorating, prompting a multi-generational movement where citizens put their sectarian differences aside in a quest for basic human rights, including the right to public space.

The revolutionary movement manifested most notably through the re-appropriation and unprompted reconfiguration of public spaces, which have long been subject to privatization, gentrification, and demarcation (Lakrouf, 2020). This included the reclamation of downtown streets, spaces and facilities that have been inaccessible for most citizens (Sinno 2021). Downtown Beirut became a space for large public gatherings, a unifying platform for protests and activist-led marches, a stage for various civil society group meetings, an agora for public political debates and discussions, an open market for street vendors, and a canvas for exploration (Lakrouf, 2020). By participating in these activities and observing how they manifested in public space, I was able to witness the reclamation of downtown streets, spaces and facilities that had been inaccessible for most citizens. For instance, Riad el Solh Square and the Ring Intersection became the center stages for protest activities. The abandoned cinema “The Egg” and The Grand Theater of Beirut were reclaimed and used as community centers and performance spaces, and the Samir Kassir Garden and privatized public spaces such as the Zaytouna Bay were reclaimed and used as spaces for dialogue and gathering

The importance of this reclamation of public space lies in its manifestation of everyday urbanism, reflecting the social and spatial relations that marginalized citizens use to reclaim their city (Hillbrandt, 2017). The transitory activities of individuals in Beirut can be understood as tactics to reclaim public space, revealing the potential of ordinary spaces and informal encounters to facilitate the agency of citizens. This determination to reclaim public space in Beirut illustrates the challenges faced by Global South citizens when it comes to meaningfully participating in urban governance, demonstrating the need for a radical approach to planning. Thus, the case of Beirut invites planners to understand that planning is not done just by planners (Miraftab, 2009) and to recognize the power associated with innovative, oppositional practices.

Citations

- Hildebrandt, M. (2017). The virtuality of territorial borders. *Utrecht L. Rev.*, 13, 13.
- Lakrouf, I. (2020). When revolution reinvents public space in Beirut. *Metropolitics*. Retrieved October 31, 2021, from <https://metropolitics.org/When-Revolution-Reinvents-Public-Space-in-Beirut.html>.
- Miraftab, F. (2009). Insurgent planning: Situating radical planning in the global south. *Planning theory*, 8(1), 32-50.
- Sinno, W. (2020). How People Reclaimed Public Spaces in Beirut during the 2019 Lebanese Uprising. *The Journal of Public Space*, 5(1), 193-218.
- Sullivan, H. (2019). The Making of Lebanon’s October Revolution. *The New Yorker*. Retrieved October 31, 2021 from <https://www.newyorker.com/news/dispatch/the-making-of-lebanons-october-revolution>

Key Words: Insurgent Planning, Placemaking, Public Spaces

VIOLENCE, REFLECTION, AND ATTENTION: THREE STAGES OF COMMUNITY-LED PLANNING ACTION IN AN INFORMAL COMMUNITY IN MONTERREY, MEXICO

Abstract ID: 1402

Abstract within Pre-Organized Session 71

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In Monterrey, Mexico, the failed war against narco-trafficking between 2009 and 2012 left deep wounds among the city's most vulnerable residents, but at the same time, the violence triggered community reflection and action. In La Campana, a neighborhood located in the consolidated area of Monterrey, the community organized to reclaim the public spaces that until recently had been controlled by organized crime. This paper describes the three stages of community-led planning action in La Campana, beginning with violence as a trigger of community participation, followed by community reflection about the role of the public space for social relations, and culminating with new efforts by the state to initiate a traditional planning approach and infrastructure provision in the community. Drawing on methods of participatory action research (Wilson, 2019), I explore how the trauma stemming from the clash between the cartels and the community triggered new ways to interact with public space. To overcome the shock of the curfew imposed by organized crime, a group of female residents created an NGO that initially focused on the modification of the built environment to transform residual spaces into pocket parks for children. The notable benefits of these imaginative, community-based planning actions garnered the attention of local authorities, which have now designed a partial comprehensive Plan for La Campana area and its surroundings jointly with their allies in the private sector. However, this planning strategy reflects the state's interest in claiming control over public spaces in the community, thus threatening the community's planning practices and identity. To analyze the ways in which the community resists real state capital and formal state planning, I draw on Roy's (2011) concept of subaltern urbanism and argue, with Sandercock (2000), that the incorporation of actors that usually do not have a voice is one of the crucial planning challenges of the 21st century. However, I take a cautionary approach to participatory processes, cognizant that concepts such as decentralization, citizen participation, and the drive against corruption are vehicles used by imperialist domination in the neoliberal era (Bayart & Biekart, 2009: 819). This argument aligns with Miraftab's (2009: 33) discussion of citizen participation as a way to legitimize neoliberal goals through the perception of inclusion to achieve hegemonic power. Without a different approach from the city's authorities based on respect for local planning initiatives, community organizing will be increasingly at risk, leaving the community vulnerable to the several real estate interests currently in the area.

Citations

- Bayat, A., & Biekart, K. (2009). Cities of Extremes. *Development and Change*, 40(5), 815–825. <https://doi.org/10.1111/j.1467-7660.2009.01584.x>
- Miraftab, F. (2009). Insurgent Planning: Situating Radical Planning in the Global South. *Planning Theory*, 8(1), 32–50. <https://doi.org/10.1177/1473095208099297>
- Roy, A. (2011). Slumdog Cities: Rethinking Subaltern Urbanism: Rethinking subaltern urbanism. *International Journal of Urban and Regional Research*, 35(2), 223–238. <https://doi.org/10.1111/j.1468-2427.2011.01051.x>
- Sandercock, L. (2000). When Strangers Become Neighbours: Managing Cities of Difference. *Planning Theory & Practice*, 1(1), 13–30. <https://doi.org/10.1080/14649350050135176>
- Wilson, Patricia A. *The Heart of Community Engagement: Practitioner Stories from Across the Globe*, NY: Routledge, 2019.

Key Words: Subaltern urbanism, Informal Settlement, decolonial planning, insurgent planning, Latin America

MEMORY, EVERYDAY URBANISM, AND PROJECT-INDUCED DISPLACEMENT IN INFORMAL SETTLEMENTS

Abstract ID: 1403

Abstract within Pre-Organized Session 71

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Project-induced displacement due to stormwater upgrading and other major infrastructure projects is a major threat to traditional place-making in informal settlements. Even though such infrastructure upgrading pursues ostensibly participatory strategies in keeping with more horizontal forms of governance, such practices are often not valued or systematized (Sandoval and Sarmiento 2020: 742). In particular, attempts at participatory approaches to infrastructure upgrading often fail to account for the everyday urbanism in informal settlements and the ways in which these may serve as a foundation for in-situ, incremental slum upgrading approaches (Jiusto and Kenney 2016). Instead, infrastructure upgrades pursued without due attention to situated place-making practices may lead to

displacement, weaken social networks, undermine local economies, and disrupt the common sense of collectivity and attachment to place. However, this paper examines the often-overlooked role of memory in contestation over such infrastructure project and its potential in shaping recovery following such disruptions. Drawing on the case of stormwater development in the informal settlement of Los Platanitos, Dominican Republic, I seek to explore the potential of memory work (Crang and Travlou 2001) in “sensemaking” strategies (Weick et al. 2005) when residents are faced with such fundamental threats to the integrity of their social and material environment. Through performances of foundational narratives of struggle to build Los Platanitos on the site of a municipal landfill starting in the early 1990s and their success in constructing informal infrastructures and economies, residents articulated a connection between past repression and current impositions of state power (Moore 1998). This memory work thus allowed residents to “make sense” of the unexpected (Weick et al. 2005) and prompted new strategies to contend with the displacement, including a push for replacement housing and collective work to reimagine new uses of public spaces given the reconfigured geographies following the stormwater project. The paper presented here draws on interviews, surveys, and field observations conducted during the stormwater upgrading project in the years 2017-2018 complemented by interviews conducted virtually during the pandemic period and field research in June 2022. The research emerged from 14 years of community-engaged research and service learning pedagogy, which allowed for a longitudinal understanding of foundational narratives, deep insights into the impacts of the stormwater project on the lives of residents, and close proximity to the memory work conducted by residents.

Citations

- Crang, M. and P. Travlou. 2001. The city and topologies of memory. *Environment and Planning D: Society and Space* 19, 161–77.
- Jiusto, Scott and Macauley Kenney. 2016. Hard rain gonna fall: Strategies for sustainable urban drainage in informal settlements. *Urban Water Journal* 13(3), 253-269.
- Moore, Donald. 1998. Clear waters and muddied histories: environmental history and the politics of community in Zimbabwe’s Eastern Highlands. *Journal of Southern African Studies* 24, 377–404.
- Sandoval, Vicente and Juan Pablo Sarmiento. 2020. A neglected issue: informal settlements, urban development, and disaster risk reduction in Latin America and the Caribbean. *Disaster Prevention and Management: An International Journal* 29(5), 731-745.
- Weick, K. E., K.M. Sutcliffe, and D. Obstfeld. 2005. Organizing and the process of sensemaking. *Organization Science* 16(4), 409–421

Key Words: Project-induced displacement, Everyday urbanism, Sensemaking, Memory, Latin America

CONFRONTING EXCLUSION: EVERYDAY PRACTICES OF ROHINGYA REFUGEES IN BANGLADESH

Abstract ID: 1404

Abstract within Pre-Organized Session 71

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Refugee camps have emerged as places delineated by extraterritoriality, exception, and exclusion (Turner, 2016), where refugees are consigned to a state of protection and relief. At the same time, humanitarian agencies manage refugee camps through neoliberal imperatives associated with ‘resiliency humanitarianism’ (Ilcan and Rygiel, 2015). In order to reproduce spaces that are at once impermanent and resilient (Ramadan, 2013), refugees are expected to become participants in the building and maintenance of the refugee camps without demanding any structural changes to ensure their needs, rights, and dignity as both human beings and citizens.

This is the situation facing Rohingya refugees in Cox’s Bazar, Bangladesh, a peri-urban hilly forest area that has become a mega refugee settlement characterized by impermanent shelters and infrastructures. Since August 2017, over 700,000 Rohingya, a stateless ethnic Muslim minority group from the Rakhine state of Myanmar, have fled and joined 200,000 more Rohingya refugees already living in Bangladesh to escape Myanmar’s state-sponsored persecution and violence. I employ ethnographic research methods to explore how the notion of impermanence is materialized through the planning of Rohingya refugee settlements, how refugees negotiate these development and management approaches, and what implications their agency provide for planning with refugees. I argue that by keeping refugees isolated and excluded as a ‘matter out of place’ (Malkki, 1992), refugee camps constitute transient spaces designed to reproduce a sense of impermanence and to depoliticize the refugee population.

However, the case study of the Rohingya refugee camp in Cox’s Bazar shows that the meaning of impermanence in the built environment changes depending on the planning context. Once the rule of exclusion of refugees from the immediate surrounding areas has been established, the line between permanence and impermanence becomes blurred. While refugees are perceived as passive recipients of aid, refugees situate themselves as active negotiating actors. By capitalizing on their individual capacity and social connections, refugees take advantage of the porous spatiality of the camps to shape their built environment and develop innovative forms of emergency ‘composite governance’ (Simone, 2008). In doing so, Rohingya refugees are transforming the politics of impermanence and

exclusion in order to achieve their rights and dignity as human beings. Their strategies of negotiation, adaptation, and appropriation of socio-spatial spaces do not necessarily translate into acceptance and belonging to the host community, but for refugees, these strategies serve to develop a measure of control over their unsettled future. Thus the case of Cox's Bazar contributes to planning theory by initiating conversations about alternative ways of planning in places where all dimensions of a plan – people, place, and time – are subject to continuous change and in the process of becoming.

Citations

- Ilcan, S., & Rygiel, K. (2015). "Resiliency humanitarianism": responsabilizing refugees through humanitarian emergency governance in the camp. *International Political Sociology*, 9(4), 333-351.
- Malkki, L. (1992). National Geographic: The rooting of peoples and the territorialization of national identity among scholars and refugees. *Cultural anthropology*, 7(1), 24-44.
- Ramadan, A. (2013). From Tahrir to the world: The camp as a political public space. *European Urban and Regional Studies*, 20(1), 145-149.
- Simone, A. (2008). Emergency Democracy and the "Governing Composite". *Social Text*, 26(2 95), 13-33.
- Turner, S. (2016). What is a refugee camp? Explorations of the limits and effects of the camp. *Journal of Refugee Studies*, 29(2), 139-148.

Key Words: Refugee camps, Impermanence, Exclusion, Planning

Track 7 Roundtables

LEARNING FROM THE GLOBAL SOUTH: LESSONS FOR INCLUSIVE AND EQUITABLE PLANNING INTERVENTIONS

Abstract ID: 1141

Roundtable

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Communities and cities of the Global South are experiencing rapid changes that are further complicated by socio-economic inequalities and local political complexity. While urban and regional planning seeks to respond to these challenges, the blueprints on which policies and interventions are based have typically been disseminated from the Global North, often overlooking local political, economic, social contexts. Thus, the implementation of these policies and interventions is often inefficient and results in suboptimal outcomes. Given the urgent crises facing many cities of the Global South – including around access to housing, food, and infrastructure, it is vital to identify new and more appropriate planning and policy responses and it is into this space that this panel steps.

In this roundtable, we as planning researchers, will engage with three major questions:

- How can planners build truly democratic and equity-enhancing planning interventions and collaborations?
- How can planners ensure that interventions empower communities?
- How can planners work to decolonize knowledge?

Underpinning these questions is a recognition that it is important to prioritize and respond to communities of place while decolonizing planning interventions and knowledge in ways that ensure equity, inclusion, and a prosperous future for all.

The panellists' case-based research examines the complexity of planning in the Global South, with a focus on specific policies and interventions and the challenges that often arise in their implementation. The cases we examine include: the provision of financial tools in the context of the nationwide slum clearance in Morocco; participatory processes of social urbanism in Medellín, Colombia; disaster risk management and climate change adaptation in India; and participatory planning in indigenous communities in Malappuram, India. Drawing on these cases, we argue that despite these policies often having intentions that are presented as equitable and future-focused, in practice their impact is often deeply suboptimal due to a lack of engagement with local contexts.

Among other themes, the panel will discuss the importance of resisting reductionist and fabricated dichotomies between Global North and Global South. It will highlight the experimentation and innovations that have been active in communities of the Global South, as well as the importance of disseminating insights from these contexts. This approach builds on the empirical and theoretical work of Vanessa Watson (2014), AbdouMalik Simone (2017, 2019), and Arturo Escobar (2008, 2017), amongst others. In documenting and discussing a variety of diverse cases, the goal is to better understand and apply knowledge from communities in the Global South. Importantly, communities in the Global South can offer significant lessons as they are permeated by practices and rhythms of endurance which are organic and human-energy driven (Simone, 2019). As spaces of the South become more complex, they offer lessons that can support the development of inclusive cities worldwide. The cases we research, and which we will discuss, strongly suggest that success or failure depends on the degree of embeddedness in the organic, emergent realities of communities. Not only is this important in the Global South, but it is vital in the Global North as well.

Citations

- Escobar, A. (2008). *Territories of difference: Place, movements, life, redes*. Durham: Duke University Press.
- Escobar, A. (2017). *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham, North Carolina: Duke University Press.
- Watson, V. (2014). 'Learning planning from the south: ideas from the new urban frontiers'. In *The Routledge Handbook on Cities of the Global South* (eds) Parnell, S., & Oldfield, S. Essay, Routledge.
- Simone, A. M. (2019). Contests over value: From the informal to the popular. *Urban Studies*, 56(3), 616–619. <https://doi.org/10.1177/0042098018810604>
- Simone, AbdouMaliq. (2017). *Ensembles of the Uninhabitable*. in *The Uninhabitable: Afterlives of the Urban South*.

Key Words: Global South, community development, knowledge dissemination, decolonization of knowledge, participatory processes

AND FINANCING CLIMATE RESILIENT DEVELOPMENT IN DEVELOPING COUNTRIES: RECENT THINKING AND EXPERIENCE

Abstract ID: 1941

Roundtable

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The adoption of the Sustainable Development Goals (SDGs) and the Paris Climate Agreement among others, signal broad global commitment to sustainable development and coordinated/ supportive platforms for implementation. The SDGs cover a broad landscape of developmental issues, goals and actions, and individual countries must assess their own situation and determine priorities and the manner and sequence in which they will be addressed. Some SDGs, however, have particular global significance, even if their specific manifestations and required actions may differ across and within countries. Dealing with climate change (SDG 13) is certainly one of these areas of universal priority, and it has close linkages with multiple other SDGs and implications for inclusive development.

The latest assessment report of the Intergovernmental Panel on Climate Change (IPCC) highlights the urgency of pursuing climate resilient development (CRD). This is defined as the process of implementing greenhouse gas mitigation and adaptation measures to support inclusive sustainable development. The IPCC report frames climate action and sustainable development as highly interdependent and argues that effective CRD is most possible when this interdependence is leveraged. The implication is that that climate action should be more effectively incorporated into sustainable development planning. Equally important for action, development finance requirements and options are often considered separately and later rather than together and earlier in the process.

Infrastructure is a major priority for CRD, including in urban areas, and for dealing with other global challenges—poverty and inequality, energy shortages, food insecurity, and health crises, among others. Infrastructure deficiencies are particularly severe in lower- and middle-income countries. High-income countries tend to rely on cities to manage major public investments much more than middle- and lower-income countries. Subnational government investment averages 37% of total public investment, ranging from 43% in high-income countries to 13% in low-income countries. Infrastructure demands will intensify as global population growth—from around 7 to more than 9 billion people by 2050—will be largely absorbed by urban areas. Given the urgency of climate change, a significant share of urban infrastructure will need to be devoted to climate action, and even infrastructure not primarily targeted to mitigation and adaptation must be designed in a more climate friendly way.

How the required infrastructure can be financed is recognized as an essential consideration, but the role of urban governments and their options to secure and manage development finance has not received the level of attention it deserves, either generally (as highlighted in an ACSP roundtable in 2021) or specifically with respect to climate change response, the focus of this roundtable. Urban infrastructure, of course, must also be planned and financed in a way that promotes more inclusive decision-making and more equitable outcomes, which places additional demands on planners.

This roundtable will consider:

- What are the most promising options for increasing infrastructure development financing in urban areas and better linking these sources to sustainable development planning? What can cities do on their own and what assistance/cooperation is needed from higher levels of government and neighboring jurisdictions?

-Which options specifically target climate action investment or make general urban investment more climate friendly? Are there specific promising innovations being piloted—by international organizations, national governments and urban governments—to meet these goals?

-How can planning academics and practitioners better contribute to the research and action needed to improve development finance for more effective sustainable development planning and climate action? This panel brings together planning academics and practitioners from government and major development organizations who have been thinking about and working on these issues to share their ideas, findings and experiences. Brief comments from the panelists will be used to generate a robust discussion among the roundtable participants.

Citations

- Eugenie Birch and Susan Wachter, eds. 2011. *Global Urbanization*. Philadelphia, PA: University of Pennsylvania Press.
- James Alm, 2015. "Financing Urban Infrastructure: Knowns, Unknowns, and a Way Forward." *Journal of Economic Surveys* 29 (2).
- Paul Smoke. 2018. "Rediscovering Urban Finance: Strengthening an Overlooked Foundation of Urban Planning." In Gautam Bhan, Smita Srinivas and Vanessa Watson, eds. *The Routledge Companion to Planning in the Global South*. London: Routledge.
- Sarah Colenbrander, Michael Lindfield, Joseph Lufkin, and Natassya Quijano. 2018. *Financing Low-Carbon, Climate-Resilient Cities*. Coalition for Urban Transitions. London and Washington, DC.
- Weiping Wu and Deepa Mehta. 2020. "Urban Infrastructure." *Oxford Bibliographies*.

Key Words: sustainable urban development in developing countries, climate resilient development, urban infrastructure, urban finance

Track 7 Individual Paper Submissions

GLOBALIZED PERIPHERIES: SOCIAL URBANISM AND NORMATIVE NOTIONS OF URBAN PLANNING IN MEXICO CITY

Abstract ID: 1006

Individual Paper Submission

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Urban planning "best practices" focused on creating more sustainable cities are becoming increasingly popular in cities around the world, including in Latin America. Best practices are the policies, programs, and projects that spark policy change in different cities from where they originally emerged (Montero 2020). Within Latin American cities, best practices focused on fostering urban sustainability - such as bike share systems, pedestrian streets, pop up parks, and central city "revitalization" approaches - have become common within central neighbourhoods, including in Mexico City (Whitney et al., 2020). Some scholars have suggested that these best practices are perpetuating inequity and exclusion through their focus on economic development and tourism (Delgadillo 2014). Less, however, has been said about the impact of best practices on neighbourhoods outside of the central areas.

This research explores the opening of an escalator in El Pirú in Mexico City, an economically marginalized neighbourhood geographically removed from the city's central areas. The escalator was directly inspired by social urbanism in Medellín, designed to improve accessibility in the neighbourhood (i.e., the neighbourhood is full of hills making walking difficult). Its conceptualization in Mexico City resulted from a study tour to Medellín where Mexican

government decision-makers were convinced about its local applicability.

While much of the literature in Latin America has focused on the implementation of best practices within areas of the city that are ripe for tourism and economic development, less has been said about their implementation in peripheral areas (Brand and Dávila 2011). What does the implementation of best practices in peripheral areas say about the evolution of best practices, not only via south-south transfers (Roy 2011) but also periphery-to-periphery transfers? Indeed, in addition to the escalator, two cable car public transportation systems have been inaugurated on Mexico City's urban periphery inspired by social urbanism. Therefore, this research asks:

- 1) What does the implementation of best practices on the periphery of the city suggest about the evolving dynamics of best practices and urban planning?
- 2) What exactly "travelled" to Mexico City? Did the pro-poor policy context of social urbanism also travel, or was it a one-off infrastructure investment?
- 3) How and why were these escalators chosen as the most appropriate infrastructure for the local context?

Data for this research will be collected using semi-structured interviews and participant observation. The author will situate themselves within Mexico City's planning milieu to observe how decision makers drew upon translocal and transnational knowledge upheld by powerful knowledge networks and study tours. Semi-structured interviews with decision-makers will unpack the history of the escalator investment in El Pirú. Participant observation will uncover the daily realities of how the escalators have impacted neighbourhood life in El Pirú.

The areas of the city where best practices are being adopted is changing. Specifically, best practice uptake is increasingly occurring on the peripheries of Latin American cities. Therefore, the conversation of the impacts of best practices in Latin American cities must expand beyond central neighbourhood to those that have been historically ignored by planning scholarship. The contribution of this paper then will be a more comprehensive understanding of the role of best practices in urban planning, situating the urban peripheries of the Global South at the forefront of the conversation in both academic and practitioner circles.

Citations

- Brand, P. and J. Dávila (2011). Mobility innovations at the urban margins: Medellín's metrocables. *City* 15, 647–660.
- Delgadillo, V. (2014). Urbanismo a la carta: teorías, políticas, programas y otras recetas urbanas para ciudades latinoamericanas. *Cadernos Metrópole* 16, 89-111.
- Montero, S. (2020). "Leveraging Bogotá: sustainable development, global philanthropy and the rise of urban solutionism." *Urban Studies* 57(11), 2263–81.
- Roy, A. (2011). Urbanisms, worlding practices and the theory of planning. *Planning Theory* 10(1), 6-15
- Whitney, R.A., Hess, P. and Sarmiento-Casas, C. (2020). Livable streets and global competitiveness: a survey of Mexico City. *Journal of Planning Education and Research*, Online First.

Key Words: policy mobility, social urbanism, best practices, Latin America, Mexico City

THE POLICY STRUCTURE AND PRACTICE ON HOUSING AND INFRASTRUCTURE PROVISION IN INFORMAL SETTLEMENTS: A COMPARATIVE STUDY ON ACCRA, GHANA, AND BUENOS AIRES, ARGENTINA

Abstract ID: 1021
Individual Paper Submission

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Climate change has led to countless challenges to coastal cities globally and pushed city leaders to adopt better strategies in dealing with unprecedented threats. An uncertainty that challenges cities in the Global South is the prolonged pressure of informal settlement management to cities. It has been well-acknowledged that these vulnerable communities often sit on the locations facing more significant climate crises. In this vein, the task of building a robust policy structure and delivering successfully informal settlement interventions is complex yet crucial.

These notions say that we need more comparative studies to show how the southern cities are dealing with their shocks and pressures, believing that the south-south collaboration provides meaningful insights for cities to learn and evolve collaboratively. From an urban government perspective, some critical and relevant questions are: (I) how have cities perceived informal settlements? (II) what national and local policies have been introduced to address relevant issues? (III) how are the concurrent projects moving these challenging areas toward different urban futures?

Methodologically, this study compares the aforementioned dimensions between Accra, Ghana, and Buenos Aires, Argentina, which have similarly accommodated significant informal dwellers and faced increasingly disruptive events associated with floods. This research draws the literature of academic papers, adopted policies, and institutional reports to respond to the first two questions while collecting the relevant citywide projects touching on informal settlement interventions to address the third question. The identified projects include the Metropolitan Buenos Aires Urban Transformation Project and the Greater Accra Resilient and Integrated Development Project.

Addressing these questions is essential to know what planning knowledge is transferable and what is not. This research will provide insights articulating the philosophical similarities on informal settlement interventions and the cultural context that differentiates the uniqueness of cities.

Citations

- Alsayyad, N. (1993). Squatting, Culture, and Development: A Comparative Analysis of Informal Settlements in Latin America and the Middle East. *Journal of Developing Societies*, 9, 139–155.
- Gillespie, T. (2018). Collective Self-Help, Financial Inclusion, and the Commons: Searching for Solutions to Accra's Housing Crisis. *Housing Policy Debate*, 28(1), 64–78.
- Gonçalves, J. M., & Gama, J. M. R. F. (2020). A Systematisation of Policies and Programs focused on Informal Urban Settlements: Reviewing the Cases of São Paulo, Luanda, and Istanbul. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 13(4), 466–488. <https://doi.org/10.1080/17549175.2020.1753228>
- Owusu, G., Agyei-Mensah, S., & Lund, R. (2008). Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 62(3), 180–190. <https://doi.org/10.1080/00291950802335798>
- van Gelder, J.-L., Cravino, M. C., & Ostuni, F. (2016). Housing informality in Buenos Aires: Past, present and future? *Urban Studies*, 53(9), 1958–1975. <https://doi.org/10.1177/0042098015581801>

Key Words: Informal Settlement, Comparative Study, Housing, Accra, Buenos Aires

ENHANCING LAND READJUSTMENT PLANNING WITH ADDITIONAL PUBLIC FUNDS AND CREATING PUBLIC REALM VIA DENSITY BONUS, PRIVATELY OPEN PUBLIC SPACES (POPS), AND BUSINESS IMPROVEMENT DISTRICTS (BIDS)

Abstract ID: 1060

Individual Paper Submission

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The paper is a case study from Surat, India that presents the use of market-based land-use tools in developing a regional-scale infrastructure – a 41.5 mile long Outer Ring Road (ORR) corridor was planned. It included planning and development of over 6,000 acres of private land parcels in the peri-urban fringe area of Surat – all in a self-financing way. The ORR corridor on completion is planned to be equipped with quality urban infrastructure, easy access roads, quality public spaces, and rich amenities at a total cost of \$654 million in four phases. This ORR case study employed four sources of funds in its financial modeling and generated surplus funds (\$). These tools are land readjustments (LR), a land-based financing and planning tool, which allows levying betterment charges (\$187 million), creating a public land bank for auction later (\$580 million). Additionally, the ORR case also utilizes a charge-based floor area ratio (FAR) as a density bonus to induce high-density developments and generates estimated (\$240-\$295 mill) funds, and even expects to collect additional toll revenues ((\$103 million) on completion of the ring road. It is estimated that the Surat ORR corridor would generate (\$1.1 to 1.2 billion) over the next 15 years via these four sources of funds.

The paper presents the above case with explanation on the process, where LR tool allowed the planners in creating a brand new green, blue, and grey infrastructure for undeveloped, rural, fringe-area land parcels, by pooling the private lands first, and then carving new roads, streets, public spaces, and installing physical infrastructure and urban amenities. It also presents costs, and potential non-tax revenues sources. The process unlocks the hidden development potential resulting into enhanced property values for planned private parcels.

the ORR case presents how a LR tool that is traditionally used at a neighborhood-scale in India was first scaled up to create a major road infrastructure by strategically mosaicking 11 different LR plans, and in the process, created planned development corridor and provided serviced developed lands abutting the ring road with urban infrastructure services. The paper As a second step, highlights the strengths of the LR tool, and also presents limitations especially in creating a well managed, accessible, and connected public spaces -- A public space plan (PSP). It then proposes two additional market-based tools to enhance the LR planning process to include public space plan (PSP) to improve the public realm. These are Privately Owned Public Spaces (POPS), to generate an additional supply of connected public spaces in the corridor, and Business Improvement Districts (BIDs) for quality

maintenance and management of public spaces and public realm in the LR plan area using market forces. The paper concludes with the process

Citations

- Kayden, Jerold. S., The NY City Department of City Planning, The Municipal Art Society of NY. 2000. *Privately Owned Public Space: The New York City Experience*. Wiley, 1st ed.
- Mittal, Jay, L. Forson and S. Byahut 2019. "Creating Higher Density Property Development Opportunities in Fringe Areas of Surat – A Case of Surat Outer Ring-Road using Land Readjustment and Density Bonuses," in Das et al. eds., *Real Estate in South Asia*, Routledge, UK.
- Mittal, Jay and A. Kashyap. 2015. "Real Estate Market Led Land Management Strategies for Regional Economic Corridors – A Tale of Two Mega Projects," *Habitat International*, Vol. 47: 205-217
- Mittal, Jay. 2014. "Self-Financing Land and Urban Development via Land Readjustment and Value Capture," *Habitat International*, Vol. 44: 314-323

Key Words: Land Readjustment, Real Estate Development, Land Value Capture, Land based financing, POPS and BIDS

URBANIZATION THROUGH RESETTLEMENT AND THE PRODUCTION OF SPACE IN HANGZHOU'S CONCENTRATED RESETTLEMENT COMMUNITIES

Abstract ID: 1078

Individual Paper Submission

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In recent years, urbanization through resettlement in Asian countries especially in China has garnered increasing scholarly attention (Z. Qian, 2017; Shannon et al., 2018; Y. Yang et al., 2020). International development agencies like World Bank and Asian Development Bank have put heightened heed to achieving inclusive resettlement amid their funded development projects. However, post-resettlement adaptation still plagues the resettled, and governments who often lead the process are grappling with providing inclusive resettlement for the affected people (Arnall, 2019; Wilmsen & Webber, 2015; X. B. Xie et al., 2014). In China alone, 9.6 million farmers are resettled during the Thirteen Five-Year Plan (2016-2020) to alleviate poverty (Xinhua News Agency, 2020).

Building on Henri Lefebvre's conceptual triad of "the production of space", this research interrogates the production of CRCs in the "Orient" context (Lefebvre, 1991, p. 42). By investigating the interaction between resettled villagers' everyday activities and the planned space of state-led resettlement projects, this research further reveals how urbanization through resettlement unfolds in China and how resettled farmers are affected by the process. The creative destruction of rural space by resettlement inevitably carries Chinese characteristics. Rural-to-urban resettlement has become an important tool of the Chinese government to promote urbanization (Chan, 2012), and the notion of "resettlement with Chinese Characteristics" (C. Yang & Qian, 2021) points to a new chapter of resettlement as urbanization beyond the concept of "resettlement as development" (Rogers & Wilmsen, 2019) in China.

This research intends to contribute to the existing literature through the following aspects. First, it pinpoints an emerging development mode of urbanization through resettlement in China, which adds new knowledge to resettlement literature. Second, by focusing on post-resettlement communities, this paper expands the traditional application of space production theory to include a dynamic lens that contends the interaction between peoples' social relations and the imposed spatial planning is the main determinant of the space produced. This conceptualization can help address the longstanding issue of achieving inclusive adaptation for the resettled. Both the development mode and the deep understanding of inclusive post-resettlement adaptation can have positive implications on development policies and planning practices in China and the Asian context. This paper aims at the following research questions: 1) How has the production of CRCs evolved in the last decades and what are the key features of CRCs in different periods? 2) How have the resettled villagers adapted to the CRCs produced in different times and what are the primary hindrances for their adaptation process?

This research adopts a mixed-method approach to substantiate the arguments. The data were collected from various sources, including government statistical data, published papers, news articles, field visits, semi-structured interviews, and questionnaire surveys. Based on several months of fieldwork conducted in Hangzhou in 2021, this research offers an empirical lens on how have CRCs evolved and how have landless farmers adapted to the new living style over the last decade or so (2005-2017). This research first finds that CRCs in Hangzhou have three typologies. Secondly, resettled villagers in early CRCs are confronted with economic challenges but maintain well social relations. Their shared collectivism is conducive to their spatial adaptation. In recent CRCs, strict planning and community management have further limited resettled villagers' spontaneous attempts in reshaping space to support their

adaptation. These findings have important policy implications for achieving inclusive resettlement in China and the Asian context.

Citations

- Lefebvre, H. (1991). *The production of space* (Vol. 142). Oxford Blackwell.
- Brenner, N., & Schmid, C. (2015). Towards a new epistemology of the urban? *City*, 19(2–3), 151–182. <https://doi.org/10.1080/13604813.2015.1014712>
- Marcuse, P. (2009). From critical urban theory to the right to the city. *City*, 13(2–3), 185–197. <https://doi.org/10.1080/13604810902982177>
- Rogers, S., & Wilmsen, B. (2019). Towards a critical geography of resettlement. *Progress in Human Geography*, 030913251882465. <https://doi.org/10.1177/0309132518824659>
- Qian, Z. (2019). Displaced villagers' adaptation in concentrated resettlement community: A case study of Nanjing, China. *Land Use Policy*, 88, 104097. <https://doi.org/10.1016/j.landusepol.2019.104097>

Key Words: resettlement, concentrated resettlement community, space production, post-resettlement adaptation, Hangzhou

LESSONS FROM PLANNING SUPPORT SYSTEMS USED IN A GRADUATE-LEVEL PRACTICUM IN BOGOTÁ, COLOMBIA

Abstract ID: 1096

Individual Paper Submission

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There are currently emerging challenges in participatory planning of global south cities. Planning practitioners face contradictory interests, distrust, and lack of communication among stakeholders, such as policy makers, developers, community activists and environmentalists. Often, this unproductive dialogue has immobilized the debate and implementation of sustainable urban policies and projects. There are many examples of this stalled projects in our case study city, Bogotá, Colombia: a new BRT corridor that cut across the wealthier parts of the city or an urban expansion Master Plan that include affordable housing but part of it is planned close to environmentally sensitive areas.

Academic research has proven that the introduction of innovative technologies in planning support systems (PSS) may help to improve communication among stakeholders. Rapid data analysis brings new data to the table, ameliorating the quality of the dialogue and potentially helping to reach consensus. However, despite the technological advances there is still skepticism of the use of PSS by planning practitioners, much of it caused by the inexperience working with them.

To cope with this challenge, we used in our graduate-level planning practicum an open-source urban planning scenario builder software, Envision Tomorrow (ET) developed in the United States. The purpose of using ET was contributing to the local participatory planning process, rapidly presenting to authorities and the different stakeholders several planning scenarios for a new city expansion with on-the-fly indicators that allow their comparison. These indicators include topics such as mobility, urban form, real estate, and sustainability.

Students developed three different scenarios using ET for an 1800-hectare Master Plan in the northern outskirts of Bogotá. One presented a continuation of the growing trend of the city: a mix of unplanned formal and informal neighborhoods lacking infrastructure; another, a mega-dense development made of residential high-rise building compounds; and a low-density neighborhood with single family housing. The objective of envisioning these scenarios was to improve the dialogue among stakeholders and facilitating a consensus about the urban form in the new urban area.

Findings of this practicum point first to a rising interest about implementing PSS in real life cases, students were able to formulate a Master Plan much faster and with more detailed indicators that when using more traditional tools. Secondly, students with architecture backgrounds informed their proposals with indicators beyond aesthetics, and the use of PSS encourage them to explore more typological housing alternatives during their design process. Thirdly, in terms of the analysis of locally built landscapes, we found that sustainability indicators of settlements developed informally are in some topics better than those indicators found in formal developments of residential high-rises. This puts into question the long-established view that cities in Latin America should incentivize the development of large mono-functional compounds with low-cost housing in peri-urban areas, instead of exploring other less formal alternatives to cope with the affordable housing shortages.

Citations

- Fregonese, J., & Gabbe, C. (2009). Envision Tomorrow: Using prototype buildings and scenario modeling to measure carbon footprint. *Environmental Studies and Sciences*.
- Goodspeed, R. (2016). Sketching and learning: A planning support system field study. *Environment and Planning B: Planning and Design*, 43(3), 444–463. <https://doi.org/10.1177/0265813515614665>
- Holway, J., Gabbe, C. J., Hebbert, F., Lally, J., Mathews, R., & Quay, R. (2012). Opening Access to Scenario Planning Tools. *Lincoln Institute of Land Policy*.
- Johnson, M. L., Bell, K. P., & Teisl, M. F. (2016). Does reading scenarios of future land use changes affect willingness to participate in land use planning? *Land Use Policy*, 57, 44–52. <https://doi.org/10.1016/j.landusepol.2016.05.007>

Key Words: Planning Support Systems, Planning Education, Scenario Planning, Bogota

ARE “GLOBAL CITIES” REALLY MORE COSMOPOLITAN? EVIDENCE FROM THE WORLD VALUES SURVEY

Abstract ID: 1108

Individual Paper Submission

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The world’s most developed urban agglomerations are often labelled “global cities.” These are held to be capitals of the world economic system due to being financial, production, and telecommunications hubs (Encyclopedia Britannica 2022). While they compete with each other economically, they also are interconnected and interdependent, leading some to argue that in many ways they are more similar to each other than to their national hinterlands.

Many argue that global cities are socially, culturally, and psychologically “different.” The world “cosmopolitan” is often used to describe them, and larger urban agglomerations in general. Warf (2014) opines that residents of bigger cities are more tolerant and empathic, and exhibit more universal humanism. “[C]osmopolitanism,” he argues, “has a long history of being generated and embedded in large, internationally oriented urban centers.” Our paper tests these propositions.

Our data are drawn from the 2017 to 2021 waves of the World Values Survey and European Values Study, which, when pooled, offer a sample of over 120,000 respondents in over 70 countries. We explore whether the population of residents’ cities is related to their likelihood of exhibiting cosmopolitan values. We do this using simple regressions without control variables and also with multilevel models that control for country-level and individual-level characteristics. We examine results weighting all countries equally and weighting by country population. We also observe residents in the metropolitan areas of some, though not all, of the “top 20” global cities (Kearney 2021). These are identified as cities that lead “across five dimensions: business activity, human capital, information exchange, cultural experience, and political engagement.” They include New York, Los Angeles, Chicago, Washington DC, San Francisco, Hong Kong, Singapore, Tokyo, Berlin, and Moscow.

In models without control variables, we find that residence in a larger city is negatively associated with trust in the UN, which we take to be a sign of less cosmopolitanism. However, city size is associated with greater feelings of being “close to the world,” is negatively related to feeling proud of one’s country (we assume nationalism is in some ways the antithesis of cosmopolitanism), is positively associated with trusting those of other nationalities, and is positively associated with having positive feelings about immigrants.

In models with control variables, we do not find a relationship between city size and appreciation of immigrants. We do, however, find some evidence that city size is negatively associated with nationalism. Also, people living in larger places are more likely to feel “close to the world” and tend to have more trust in the UN. In some models we find a link between living in a larger city and being more willing to trust those of another nationality.

We also specifically examine the residents of the “global cities” listed above. For the same dependent variables, we compare these cities to their individual national hinterlands, pool them and compare them with their pooled national hinterlands, and pool them and compare them with our entire global population. Considering our results in concert, we find little if any evidence of greater global city cosmopolitanism.

In sum, our results do not suggest that “global cities” themselves are indeed more cosmopolitan. This is particularly noteworthy given our large sample size, which should be able to show statistical significance even for relatively small effect sizes. But we do uncover fairly strong evidence that cosmopolitanism is associated with larger city size more generally. This outcome that may stem from cities’ greater connectivity to the global economy, communal diversity,

and exposure to cultural products, ideas, and people from abroad. Planners should seek to promote these characteristics, and urban living in general, to foster global understanding and solidarity.

Citations

- Chamock, Greg. (2022). "Global city." In The Encyclopedia Britannica online. Available at <https://www.britannica.com/topic/global-city>
- EVS/WVS (2021). European Values Study and World Values Survey: Joint EVS/WVS 2017-2021 Dataset (Joint EVS/WVS). JD Systems Institute & WVSA. Dataset Version 1.1.0, doi:10.14281/18241.14.
- Kearney (2021). Global cities: divergent prospects and new imperatives in the global recovery 2021: Global cities report. Available at <https://www. Kearney.com/global-cities/2021>
- Sassen, Saskia. The global city. Princeton University Press, 2013.
- Warf, Barney. "Global cities, cosmopolitanism, and geographies of tolerance." Urban Geography 36.6 (2015): 927-946.

Key Words: Global Cities, Cosmopolitanism

EMERGING HOST CITIES REVEAL EMERGING ISSUES: A PRE-EVENT DISCUSSION OF SPACE EXCLUSION AND NEW CONFLICTS OF PUBLIC INTEREST IN FIFA WORLD CUP QATAR 2022™

Abstract ID: 1111

Individual Paper Submission

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Beginning with the Japan/South Korea 2002 FIFA World Cup and followed by 2010 South Africa and 2014 Brazil FIFA World Cups, legacies of such events have been the main reason emerging economies and developing countries bid to host the most-watched sporting events. Since December 2, 2010, when FIFA Executive Committee awarded Qatar the rights to host the World Cup, this small Arab Muslim country has been preparing to make history by hosting not only the first FIFA World Cup but the first sporting event of this magnitude to be staged in Western Asia and North Africa. While political rhetoric has predominately focused on realizing long-term benefits, there is no doubt that this Islamic state faces severe challenges in creating inclusive urban space for about two million foreign visitors. This has provided a unique research opportunity beyond traditional topics about mega-events' legacy.

While most studies tend to focus on the short- and long-term post-event legacy of sporting mega-events, this pre-event legacy research, from the right to the city theoretical standpoint, raises critical questions regarding the definition and conceptualization of public interest. A vital component of the right to the City theory is the appropriation of urban space by different social and cultural groups. Although hosting such a mega-event by a small Muslim country is a historical turning point, inclusion and diversity activists have heavily criticized how an Islamic state will regulate the public life of non-Muslim visitors and minorities. Questions on the use of alcohol in public spaces, the presence and activities of the LGBTQ community, women's right to the city and public spaces, along with the reports on migrant worker deaths in Qatar, have been the most reasons human rights and social justice activists and scholars have criticized the hosting of World Cup in Qatar. On the other hand, in terms of alcohol consumption as an example of spatial challenges, the use of alcohol is especially a troubling issue for Muslims, who may be deeply offended if they are in the vicinity of alcohol. For many Muslim fans, even being in the same space where alcohol is being consumed or near drunk fans is a serious affront to their religious identity. These spatial contradictions are the motivators of this research.

Through a qualitative case study, this exploratory research primarily focuses on the "public life legacy" represented in the function and appropriation of public spaces. It discusses why the 2022 FIFA World Cup would open a new critical window into the practical challenges of implementing social justice theories in real-world spaces. As Islamic countries such as the UAE, Saudi Arabia, Egypt, Morocco, etc., emerge as potential hosts of future cultural and sporting events, new theoretical and practical challenges to explore the various dimensions of social justice open up for urban planners. This research aims to raise the importance of these emerging challenges and to explain why urban planners need to carefully consider the issue of the appropriation of urban space during the 28 days of the World Cup in Qatar.

Citations

- Al Emadi, M., & Ben Yahia, I. (2017). Exploring the determinants of 2022 FIFA World Cup attendance in Qatar. International Journal of Sport Management and Marketing, 18(1/2), 116. <https://doi.org/10.1504/ijsmm.2017.10012378>
- Dun, S. (2014). No beer, no way! football fan identity enactment won't mix with Muslim beliefs in the Qatar 2022 World Cup. Journal of Policy Research in Tourism, Leisure and Events, 6(2), 186–199. <https://doi.org/10.1080/19407963.2014.925256>

- Jayne, M., & Valentine, G. (2016). Alcohol, drinking, drunkenness (dis)orderly spaces. Taylor and Francis.
- Valentine, G., Holloway, S. L., & Jayne, M. (2010). Contemporary cultures of abstinence and the nighttime economy: Muslim attitudes towards alcohol and the implications for social cohesion. *Environment and Planning A: Economy and Space*, 42(1), 8–22. <https://doi.org/10.1068/a41303>

Key Words: Spatial justice, public interest, mega-event legacy, Qatar

HOUSEHOLD PREFERENCES FOR WATER SUBSIDY PROGRAMS AND PERCEPTIONS OF “FAIR” WATER PRICES: INSIGHTS FROM TWO FIELD EXPERIMENTS IN NAIROBI, KENYA.

Abstract ID: 1135

Individual Paper Submission

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The effective pricing of municipal water and sanitation services plays an essential role in promoting efficient water use and enhancing utilities’ ability to deliver high-quality water and sanitation services.

Despite recent global attention to the affordability of water and sanitation services and subsidies in the sector, limited attention has been paid to household perceptions of affordability and their preferences regarding the design and delivery of subsidies. This paper examines customer perceptions of affordability, what constitutes “fair” water prices, and household preferences for different subsidy delivery mechanisms from two field experiments in Nairobi, Kenya. In particular, these studies test whether information on the capital intensity and cost of water infrastructure affects households’ perceptions of “fair” water prices. It also assesses household perceptions of affordability and reports their preferences for hypothetical subsidy delivery programs. We find that households preferred subsidy mechanisms that provided some form of autonomy over when and how to access and use subsidies. We also find that household perceptions of “fair” water prices are sensitive to elicitation mode (in-person vs. phone survey) and the content of the information treatments (verbal vs. verbal + images). To our knowledge, these are the first studies to examine household preferences for water and sanitation subsidy programs and test the impact of information treatments on customer perceptions of “fair” water prices. Overall, this paper contributes directly to the global discourse on the affordability of water and sanitation services, the design and delivery of smart(er) subsidies for basic infrastructure and services, and the challenge of getting water utilities on the path to financial sustainability.

Citations

- Beard, Victoria A. and Diana Mitlin. 2021. "Water access in global South cities: The challenges of intermittency and affordability" *World Development* 147, (2021), 1-15. <https://doi.org/10.1016/j.worlddev.2021.105625>
- Cook, Joseph, David Fuente, and Dale Whittington. “Choosing Among Pro-Poor Policy Options in the Delivery of Municipal Water Services.” *Water Economics and Policy*, November 15, 2019, 1950013. <https://doi.org/10.1142/S2382624X19500139>.
- Hasan, Syed M., Agha Ali Akram, and Marc Jeuland. “Awareness of Coping Costs and Willingness to Pay for Urban Drinking Water Service: Evidence from Lahore, Pakistan.” *Utilities Policy* 71 (August 1, 2021): 101246. <https://doi.org/10.1016/j.jup.2021.101246>.
- Suwal, Bhim Raj, Jane Zhao, Aditi Raina, Xun Wu, Namrata Chindarkar, KC Bal Kumar, and Dale Whittington. “Households’ Preferences for Water Tariff Structures in Kathmandu, Nepal.” *Water Policy*, 2019, 20.
- Thuy, Truong Dang, Pham Khanh Nam, and Dale Whittington. “Households’ Perceptions of ‘Reasonable’ Water Bills in Ho Chi Minh City, Vietnam.” *Water Economics and Policy* 06, no. 03 (July 2020): 2050006. <https://doi.org/10.1142/S2382624X2050006X>.

Key Words: Water, Sanitation, Equity, Africa, RCT

“ACROSS THAT ROAD BUT WE CAN’T GO”: HOW ETHNICIZATION AND ORIGIN STORIES SHAPE HEALTHCARE DECISIONS AMONG DISPLACED AFGHANS IN QUETTA, PAKISTAN

Abstract ID: 1195

Individual Paper Submission

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The improvement of physical and mental health for residents has always remained at the heart of planning practice. Planning and policy outcomes, like the built environment, placement and quality of health facilities, transportation and transit facilities, and even racialized zoning and gentrification, influence people’s health and their ability to access

and utilize healthcare resources. Inequitable distribution of social, spatial, and economic resources (and even outright exclusion) interacts with socialized markers of identity like race and gender to shape both people's access healthcare facilities and ability to afford treatment. These interactions assume even greater significance for tens of millions of displaced people around the world who face physical, social, economic, and political exclusion and uncertainty in their host cities.

In this paper, I investigate how politicized subnational identities (ethnicized identities) influence displaced people's choices and decisions to access healthcare facilities in an urban setting. I use qualitative data, including in-depth interviews with displaced Afghans and georeferenced ethnographic observations from Quetta, Pakistan, for this study. I show that displaced people's ethnicized identities are closely connected to their narratives and experiences of displacement (I call these narratives "origin stories"). These origin stories interact with ethnicization of the city's local population to produce unique urban outcomes for subnational and even subethnic groups within the larger population of displaced Afghans.

Using the qualitative technique of process tracing, I find that ethnicized identities and origin stories influence healthcare choices and decisions by placing a different set of sociospatial constraints on different groups of people. Afghan Pashtuns, who speak the language of the city's majority population and reported no spatial constraints in accessing different parts of the city, based their decisions on eligibility to get treatment at public healthcare facilities or affordability of private facilities. Pashtun respondents reported visiting healthcare facilities further from their homes if they could afford the trip on available modes of travel. On the other hand, Afghan Hazaras reported feeling very vulnerable in much of the city and spatially restricted themselves to one of the city's two Hazara neighborhoods. Their choices of healthcare facilities were driven by proximity to these safe zones and concurrent availability of *Farsi*- or *Hazargi*-speaking staff at those facilities. This often forced them to travel longer distances, from one Hazara settlement to the other, despite the presence of multiple free public facilities closer to their neighborhood.

My findings speak to the challenges of planning for equitable access to healthcare in a world reeling from a global pandemic, increasing climatic challenges, and a growing number of involuntarily displaced people who move from one vulnerable context in the Global South to another. I show that, especially for marginalized communities, the presence of a healthcare facility alone may not improve access even if it is in close physical proximity and free for visitors. Minor paperwork requirements may exclude displaced people from healthcare facilities due to want of documentation; similarly, identity-based prejudice dissuades displaced people from these facilities even if they can fulfil administrative and documentation requirements. In cities that host displaced populations, addressing the social and linguistic barriers to access to healthcare therefore involves understanding displaced people's ethnicized origin stories, studying their interactions with the local population, and coming to terms with perceived sociospatial and linguistic constraints on their mobility.

Citations

- Lopez, R. (2012). *Building American public health: urban planning, architecture, and the quest for better health in the United States* (1st ed.). New York, NY: Palgrave Macmillan.
- Gunst, M., Jarman, K., Yarwood, V., Rokadiya, S., Capsaskis, L., Orcutt, M., & Abbata, A. (2019). Healthcare access for refugees in Greece: Challenges and opportunities. *Health Policy*, 123(9), 818-824. doi:<https://doi.org/10.1016/j.healthpol.2019.06.003>
- Lim S, Chan PY, Walters S, Culp G, Huynh M, et al. (2017) Impact of residential displacement on healthcare access and mental health among original residents of gentrifying neighborhoods in New York City. *PLOS ONE* 12(12): e0190139. <https://doi.org/10.1371/journal.pone.0190139>
- Cheng I-Hao, Wahidi Sayed, Vasi Shiva, Samuel Sophia (2014) Importance of community engagement in primary health care: the case of Afghan refugees. *Australian Journal of Primary Health* 21, 262-267. <https://doi.org/10.1071/PY13137>
- Fiscella, Kevin MD, MPH; Williams, David R. PhD, MPH *Health Disparities Based on Socioeconomic Inequities: Implications for Urban Health Care*, *Academic Medicine*: December 2004 - Volume 79 - Issue 12 - p 1139-1147.

Key Words: Displacement, Healthcare access, Origin Stories, Identity, Ethnicization

URBAN REFUGEE HOUSING SPACES: AN ILLUSION OF SECURITY IN BEIRUT

Abstract ID: 1240

Individual Paper Submission

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By the end of 2021, over 84 million people worldwide had been forcibly displaced from their homes as a result of conflict, violence, and other major events that disturbed the public order. To date, the vast majority of refugees – an estimated 22 million people – are hosted in countries of the global South (UNHCR, 2022). From WWII until the early

2000s, the UN and host countries have viewed physical planning and camps as effective tools to both aid refugees and assuage fears of local populations. Typical camp structures such as plastic tents and metal containers were easily assembled, enabling international organizations to quickly shelter and aid refugees, while simultaneously the fragile materiality of the structures, and their confinement to specific locations, both affirmed that the precarious situation was under control and only temporary. However, as conditions of forced displacement became more protracted – sometimes lasting for generations – a growing trend of refugee movement from camps to urban areas has been recorded (Sanyal, 2015).

Today, only 15 percent of refugees worldwide reside in managed camps while the rest seek affordable housing in urban areas. However, host cities in the global South are struggling as such movements place considerable pressure on resources and services that are already unable to meet the needs of the urban poor. This paper narrows down on the approximate 1 million refugees that fled the Syrian war into neighboring Lebanon. For over 11 years, they remain displaced and account for a quarter of the host country's total population, representing the highest proportions of refugees anywhere in the world. With an absent state and a weak economy, a significant pressure appears to be on already scarce affordable housing, and the displaced have sought informal ways to access – even produce – inexpensive 'housing spaces' to survive. These spaces have a wide typological range and include makeshift shelters, rooftop and basement units, apartments of all conditions, and re-configured substandard buildings for larger groups. Although many of these spaces were produced by, or for, refugees, a pattern of continuous eviction is apparent. As such, my main research question is: Why are urban refugees at a constant risk of eviction from housing spaces that were created for, or by, them? And what are the necessary conditions to achieve tenure security in the city?

While there is a growing body of research on the various facets of urban refugee life in the global South, there is a gap in the literature on the spaces that urban refugees produce and inhabit, as well as how this relates to contemporary debates on urbanization. As several scholars have claimed, this is no longer a refugee crisis, rather an 'urban' crisis (Fawaz, 2017), and addressing this issue is an urgent political, socio-economic and spatial question. Through a qualitative analysis of reports produced by international and local organizations, in addition to in-depth interviews with over twenty refugee households residing in various parts of Beirut, this paper explores the complex and informal ways urban refugees attempt to create and access housing spaces in the city. The research traces the various channels that lead to these housing spaces and investigates the underlying reasons beneath the constant threats of eviction. The research concludes that urban refugee housing are a form of "gray spaces" (Yiftachel, 2009) and questions how this is fundamentally different from sheltering in camps. Finally, the paper provides the foundation for a new urban concept that I continue to explore and dub "displacement within displacement".

Citations

- Fawaz, Mona. "Planning and the refugee crisis: Informality as a framework of analysis and reflection." *Planning Theory* 16, no. 1 (2017): 99-115.
- Sanyal, Romola. "Refugees and the city: An urban discussion." *Geography Compass* 6, no. 11 (2012): 633-644.
- Yiftachel, Oren. "Theoretical notes on gray cities': The coming of urban apartheid? *Planning theory* 8, no. 1 (2009): 88-100.
- UNHCR. 2022. Accessed via <https://www.unhcr.org/refugee-statistics/> on April 2, 2022.

Key Words: Urban refugee, Forced displacement, Tenure security, Shelter, Global South

CULTURAL INFRASTRUCTURES: PERFORMING CITIZENSHIPS FROM THE PERIPHERIES OF LATIN AMERICAN CITIES

Abstract ID: 1256

Individual Paper Submission

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The last decades have staged a proliferation of cultural spaces and practices—from rap and funk, to dance, street art, theater, and literature—initiated and sustained by the youth in the peripheries of Latin American cities. Often raised amid long-lasting patterns of acute social exclusion, communities in these neighborhoods are no longer satisfied with simply seeking the fulfillment of their basic material needs—such a goal should be always taken for granted in any discussion on political, social, and cultural issues in the region. Nor are they just asking to be treated as equals within existing social systems and standards. Rather, these historically oppressed communities are demonstrating a growing appetite to thrive and flourish individually and collectively. Remarkably, they are performing their blossoming as a very real possibility. These communities are increasingly aware of their entitlement to cultural rights historically denied to them by political and social elites and are equally committed to inventing forms of citizenship beyond established understandings of civic, political, and social rights.

In this paper, I explore how this explosion of cultural production (Caldeira, 2015) in the peripheries of Latin

American cities has the potential to turn into a regionwide counter-hegemonic form of engaging in politics through the consolidation of what I call cultural infrastructures—a concept through which I conceptualize them as robust institutions comprised both by cultural spaces (physical infrastructure) and creative practices (social infrastructure (Simone, 2004)), which contribute to the collective capacity to pursue social and material change. Specifically, I discuss to what extent young cultural community leaders today aspire to build towards an ontological turn in formal politics that leads towards deeper systemic changes (Escobar, 2020). I equally reflect on what we can learn from grassroots cultural infrastructures in Latin America for other insurgent community planning practices (Miraftab, 2017) within and across other contexts of exclusion.

To undertake this analysis, first, I provide evidence of burgeoning art-based initiatives across Latin American urban peripheries, which constitute a widespread sociocultural phenomenon across the region. Second, I discuss the social and urban conditions that have sparked the cultural explosion in these urban peripheries. I argue that analogous conditions of inequality and diversity, exacerbated by massive migration processes, are behind the extended cultural response of the oppressed Latin American youth. Third, I introduce the concept cultural infrastructures in reference to youth-led pedagogic spaces and practices that mobilize the aspirations and claims set by peripheral communities. Fourth, through the idea of self-defined cultural rights, I suggest that such infrastructures both derive from and expand insurgent citizenships (Holston, 2008) that have taken shape over decades of urban exclusion (on top of centuries of social and racial oppression). I sustain that the culture-based nature of these infrastructures takes claims and aspirations a step further by enabling the performance of citizenships in creative and artistic ways. This performance not only challenges social stigmas and preconceptions over these communities, but also creates tangible opportunities for the youth to thrive. Lastly, I consider the relation between culture and politics through the lens of cultural infrastructures in Latin American urban peripheries, suggesting that the apparent apolitical nature of these initiatives is indeed a veiled form of resistance slowly reaching higher decision-making spheres. Methodologically, my paper brings together scholarly literature on political science, political anthropology, and southern planning theory seeking to provide a refreshing theoretical framework around this emergent sociocultural phenomenon in Latin American urban peripheries, which can inspire counter-hegemonic planning processes elsewhere. I conclude the essay reminding of the importance to attend to these everyday peripheral forms of performing cultures and politics as an endless source of creativity for the imagination of alternative social paradigms.

Citations

- Caldeira, T. P. R. (2015). Social Movements, Cultural Production, and Protests: São Paulo's Shifting Political Landscape. *Current Anthropology*, 56(S11), S126–S136
- Escobar, A. (2020). *Pluriversal politics: The real and the possible*. Duke University Press, Durham, NC
- Holston, J. (2008). *Insurgent citizenship: Disjunctions of democracy and modernity in Brazil*. Princeton University Press, Princeton, NJ
- Miraftab, F. (2017) *Insurgent Practices and Decolonization of Future(s)*. In *The Routledge Handbook of Planning Theory*. Routledge, London and New York, NY
- Simone, A. M. (2004). People as Infrastructure: Intersecting Fragments in Johannesburg. *Public Culture*, 24

Key Words: cultural spaces, creative practices, social infrastructure, insurgent citizenship, insurgent planning

LOCKED IN PLACE: PLANNING FOR INDIA'S HOME-BASED WORKERS IN THE POST-PANDEMIC CITY

Abstract ID: 1280

Individual Paper Submission

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When India went into its first pandemic lockdown in March 2020, media coverage exposed the plight of urban migrants returning to their home states, localities, and villages. The lockdowns exacerbated vulnerabilities already inherent in the migrant condition as workers struggled to make rent, access entitlement schemes, as well as recover back wages from employers. This paper, part of a larger project on migrant mobility injustices in India during the pandemic, shifts from the plight of migrants returning home in March 2020, to those who had no choice but to remain in cities. Based on interviews with migrant households, policymakers, and local activists, conducted in Gurugram, India between 2020 and 2022, this paper documents the survival strategies of home-based workers, in particular. It investigates the political possibilities and planning lessons for improving access to safe housing in the post-pandemic city. How did urban governments and planners acknowledge and address the crisis unfolding for migrant home-based workers who remained in informal settlements during lockdowns? What recourse have these households had during the pandemic? How have they negotiated with landlords and sought assistance, and from who have they received it?

Gurugram's outsized migrant labor force is often associated with construction, manufacturing, domestic service, or office work. Home-based workers, typically female, engage in small-scale textile and craft manufacturing--

multitasking domestic care and gig labor in one space (Chandrasekhar, 2014). Their contributions to the urban economy fundamentally challenge the notion of “working from home” as the domain of the privileged (Islam, 2022). Such workers receive limited attention, are less visible, but constitute some of the most precariously employed and housed urban migrants in Indian cities, “flexibly rooted” in place (Cowan, 2021). Already confined to the home for long hours, earning low wages without protections or evidence to demonstrate their employment status, home-based workers are subject to the exploitation of landlords and planning regimes that offer few protections from evictions and unsafe housing conditions (Chen and Sinha, 2016). The paper argues that policymakers and planners responding to the lessons of the pandemic must address this crisis of immobility among migrants locked down in places that serve the double burden as both home and place of work.

Citations

- Chandrasekhar S. (2014) Home-based Workers and Multiple Uses of Dwellings in Urban India. *Environment and Urbanization ASIA*. 5(2):303-318.
- Chen, MA, and Sinha S. (2016) Home-based workers, and cities. *Environment and Urbanization*;28(2):343-358.
- Cowan, T. (2021) Rooted flexibility: social reproduction, violence and gendered work in the Indian city, *Gender, Place & Culture*, 28:1, 66-87
- Islam, A. (2022) Work-from/at/for-home: CoVID-19 and the future of work – A critical review, *Geoforum*, Vol 128, 33-36

Key Words: India, Pandemic, Migrant workers, Housing, Informal Labor

URBANIZATION FROM WITHIN: PLANNING FOR URBAN TRANSFORMATIONS IN INDIA'S COUNTRYSIDE

Abstract ID: 1345

Individual Paper Submission

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Scholars generally imagine the urban transition as a massive population movement from rural areas to cities—a “depopulation of the countryside” (Davis & Golden, 1954). However, the Indian context complicates this simple model. Scholars have claimed that the country’s urbanization is primarily driven by “morphing places” (Mukhopadhyay et al., 2020) – that is, the transformation of villages into urban towns throughout India’s countryside, part of a surge in the number of small urban settlements throughout the Global South (Randolph & Deuskar, 2020). Research demonstrates that some agrarian regions in the country are reaching urban densities and experiencing structural transformation in their local economies despite witnessing negative net migration (Randolph, 2021). These urban transformations are fueled by the circulations of labor and capital that result from temporary out-migration to prosperous metropolitan areas; a changing climate that is compelling an exit from agriculture; and a shifting political economy in parts of rural India. Not only does this trend complicate the image of urbanization through permanent mass migration to cities; it also raises questions about what it means to plan for these nascent urban environments, whose underlying conditions of growth differ markedly from the metropolitan areas where planning research and practice are concentrated.

This paper studies this phenomenon of urbanization from within using a case study: the district of Begusarai in the northern state of Bihar. More than three-quarters of the district lives in dense agglomerations (greater than 1500 people/km²), the population of which grew by 1.4 million between 1990 and 2015. In the past two decades, Begusarai has witnessed a swift agrarian exit, with the share of workers in non-agricultural employment more than doubling to over 40 percent. These changes occurred even as the district attracted few in-migrants and saw roughly 3 percent of its population out-migrate—the demography of urbanization enabled entirely by natural population growth. I discuss the structural conditions that undergird Begusarai’s urbanization, using literature from development studies and economics; examine the temporary out-migration and other livelihood strategies that underpin its changing economy, using primary qualitative data; and unpack the implications of this form of urbanization for planning, using insights from a land use and built environment survey.

Citations

- Davis, K., & Golden, H. H. (1954). Urbanization and the Development of Pre-Industrial Areas. *Economic Development and Cultural Change*, 21. <https://doi.org/10.1086/449673>
- Mukhopadhyay, P., Zerah, M., & Denis, E. (2020). Subaltern Urbanization: Indian Insights for Urban Theory. *International Journal of Urban and Regional Research*, 44(4), 582–598. <https://doi.org/10.1111/1468-2427.12917>

- Randolph, G. F. (2021). Urbanization from within: “Morphing places” and “moving people” in India’s urban transition. Under review at *Environment and Planning A: Economy and Space*.
- Randolph, G. F., & Deuskar, C. (2020). Urbanization beyond the Metropolis: Planning for a Large Number of Small Places in the Global South. *Journal of Planning Education and Research*, 0739456X2097170. <https://doi.org/10.1177/0739456X20971705>

Key Words: Urbanization, Demography, Migration, Labor, Climate change

PLACES FOR THE DISPLACED: FORCIBLY DISPLACED PERSONS IN JUBA, SOUTH SUDAN

Abstract ID: 1370

Individual Paper Submission

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Around the world, the number of people displaced from their homes continues to increase due to political conflict and climate change. Historically, an encampment approach has been used to house displaced persons by UN agencies and hosting nations. However, approximately sixty percent live in urban areas, not camps. Thus, there is a mismatch between where humanitarian aid is being provided and where it is needed. One important reason this seems to occur is that little is known about how displaced persons manage urban life and how they establish various relations, and networks, and integrate with often impoverished hosting populations. Considering that 85 percent of forcibly displaced persons are in low-income countries, their arrival also offers development opportunities for under-resourced cities and governments through external inputs from various United Nations agencies, bilateral donors, and international NGOs. Without a better understanding of the dynamics within communities, it is difficult to effectively plan how urban programs and facilities can serve people’s needs.

Framed around migration economics this research compares displaced persons and existing residents living in two “neighborhoods” in Juba, South Sudan, with those living in a nearby, rural designated displacement site to 1) better understand the different assets (e.g., social networks) displaced persons rely on for livelihood opportunities (e.g., employment), and 2) the impact the arrival of displaced persons has on cities and host communities?

To answer these questions a mixed-methods approach was used. The quantitative aspects included a random selection of 80 households at each of the three locations, for a total of 240 households. The qualitative aspects included document reviews, participant observation in markets and neighborhoods, and semi-structured interviews with UN agency officials, district government officials, local authorities (chiefs, etc.), and other service providers working in and around the sites of observation.

The main findings highlight 1) that displaced persons living in urban centers were more likely to have larger social networks when compared to those residing in designated displacement settings 2) both long-term residents and displaced persons indicated the cost of transportation as a barrier to finding employment, and 3) hosting populations perceived displaced persons as having positive impacts on local economies (e.g., paying rents, consumers for business).

If current trends continue, the world will witness increasing numbers of displaced people due to climate change and conflict. Anticipating that cities will receive the majority of displaced persons, we must proactively consider how urban strategies can best meet the needs of established residents as well as new arrivals. Without understanding the dynamics within communities, planners and social service providers will struggle to effectively design urban programs and facilities to serve the people’s needs. My research is an effort to begin and identify the barriers and opportunities that displaced person experience in cities as a means for advancing future urban policies and research.

Citations

- Berke, T.; Larsen, L. Using Land to Promote Refugee Self-Reliance in Uganda. *Land* 2022, 11, 410. <https://doi.org/10.3390/land11030410>
- Betts, A.; Chaara, I.; Omata, N.; Sterck, O. Refugee Economies in Uganda: What Difference Does the Self-Reliance Model Make? RSC: Oxford, UK, 2019
- Bilgili, Ö.; Loschmann, C.; Fransen, S.; Siegel, M. Is the Education of Local Children Influenced by Living near a Refugee Camp? Evidence from Host Communities in Rwanda. *International Migration*. 2019, 57, 291–309

Key Words: Forcibly Displaced Persons, South Sudan, Host communities, Social networks

REDEFINING CLIMATE-INDUCED RETREAT IN THE GLOBAL SOUTH

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As urban areas face a notable rise in flood-related casualties and economic losses due to climate change, academics and practitioners increasingly advocate applying the strategy of managed retreat. In the Global North, retreat programs typically involve the relocation of structures to areas of lower flood risk, often through buyouts, land use and zoning changes, as well as design-based techniques. However, in the Global South, national governments, development banks, and other knowledge brokers overwhelmingly employ retreat to relocate people to ostensibly lower-risk areas, which disproportionately affect informal settlers lacking legal land tenure. These forms of planned relocations in anticipation of future climate impacts join the list of many other historical reasons that states relocate marginalized groups. These include: addressing concentrated poverty, crime, and disease in slums; constructing large-scale urban development projects; redistributing land for capitalist production; “modernizing” non-sedentary groups of people; and quelling political unrest. Since non-climate rationales heavily influence purportedly climate-driven retreat activities, my study investigates how to refine the conceptualization of retreat in the Global South by examining place-based decision-making logics and practices in the Philippines.

To uncover the dominant retreat-related beliefs and practices of stakeholders involved in key state-supported relocation and adaptation programs in the Philippines, I employ text analysis and multi-stakeholder interviews. I selected six retreat-related project sites situated in different Metro Manila locales as case studies for examining how the retreat process plays out on the ground. I conducted 20 semi-structured, virtual interviews between April and November 2021 to discuss considerations and challenges at selected project sites. Informants, selected through snowball sample, include: state and local planners, contracted consultants, public and private engineers and architects, community organizations, homeowner associations, and project financiers. I also analyzed text from official flood and housing project documents, land use plans, building code regulations, and media reports to inform my lines of inquiry.

My study’s results suggest that state-led relocation patterns in the Philippines more often align with economically-driven land use changes than disaster-driven or planned modes of retreat. Retreat-related case studies emphasized the role of temporariness and short-term relocation, which did not confine neatly to the current conception of retreat as defined and practiced in the Global North, applied to Global South contexts. By beginning to detail key place-based factors, logics, and practices driving government-led relocation in the name of flood protection, this study opens up new pathways for characterizing retreat in the Global South. Planning scholars and practitioners can use these results to identify and facilitate more diverse, place-based forms of retreat-related adaptation. Rather than approaching retreat as an exercise for relocating people, stakeholders throughout the Global South should consider incorporating more land use and livelihood considerations – when feasible – to ensure that residents can safely stay-in-place as long as possible while they plan future movements.

Citations

- Ajibade, I. (2019). Planned retreat in Global South megacities: disentangling policy, practice, and environmental justice. *Climatic Change*, 1-19.
- Balachandran, B., Olshansky, R. B., and Johnson, L. A. (2021). Planning for Disaster-Induced Relocation of Communities. *Journal of the American Planning Association*, 1-17.
- De Sherbinin, A., Castro, M., Gemenne, F., Cernea, M. M., Adamo, S., Fearnside, P. M., ... and Shi, G. (2011). Preparing for resettlement associated with climate change. *Science*, 334 (6055), 456-457.
- Doberstein, B., Tadgell, A., and Rutledge, A. (2020). Managed retreat for climate change adaptation in coastal megacities: A comparison of policy and practice in Manila and Vancouver. *Journal of environmental management*, 253, 109753.
- Elkin, R. S., and Keenan, J. M. (2018). Retreat or rebuild: exploring geographic retreat in humanitarian practices in coastal communities. In *Climate Change Impacts and Adaptation Strategies for Coastal Communities* (pp. 149-165). Springer, Cham.

Key Words: Managed Retreat, Relocation, Climate Adaptation, Philippines, Informal Settlements

CORPORATE LANDLORDS: HOUSING FINANCIALIZATION IN LATIN AMERICA

Abstract ID: 1413
Individual Paper Submission

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Recently, central districts in major Latin American cities have been rapidly increasing their density via high-rise projects. The case of Santiago is not different. This process partly occurred through financial capital increased via

private property buildings, focusing on small rental apartments (López-Morales, 2012). Through the last decades, the commodification of housing as well as the growing use of housing as an active integrated to the globalized financial market, has affected profoundly the way of understanding adequate housing as a right for everyone (Rolnik, 2015).

Indeed, after the financial crisis of 2008, the impacts on the housing market meant a general change in the financialization housing structure. Several countries in the Global South experienced rapid changes in tenure systems when real estate companies shifted their capital inflow to the rental market. For example, in Santiago, the population who rent increased from 20% to 28% (Casen, 2017) which also explains the homeownership fall since 2000 (Gilbert, 2015). In recent years, changes in the rental market have been tied to important transformations in property typology, leading to the emergence of dense high-rise housing developments. The difference from other high-rise buildings is that recent rental models have one private owner, one landlord, and more than 1,000 apartments for lease, a model namely "Corporate landlords". Thus, these buildings belong to international financial corporations, investment funds, insurance companies, real estate, and family firms.

Scholars have been studying these tenure models after the subprime crisis and their impacts on social and urban patterns in the US. However, in Latin America, the model's appearance is relatively new, and it is rapidly increasing. For instance, in Santiago, in 2020, they were 414 multi-family buildings under corporate landlords, and their construction rate is increasing every year; more than 70% of them are located in three communes of Santiago. Several reasons may be underlying the increment of this new rental typology. 1) The real estate business has, on average, augmented its capital gains between 50% to 100% in the last seven years (Ugarte, 2019); 2) an increase of two populations interested in living near the city center: young population and new immigrants; 3) the recently rental housing voucher policy; and 4) neoliberal governance in many of Latin America cities has generated a chronically underfunded situation for local governments, which have been forced to deregulate their urban normative as a way to attract new investments to their territories (Brenner et al., 2010; Harvey, 1989).

This paper analyzes these new renting trends, specifically under the corporate landlord models focusing on Santiago, Chile. The main questions of the research are centered on: What are the main characteristics of these new rental markets? Who invests, and how are these corporate landlords operating? What are their implications for the city? Who is the target population for these buildings? Is there any relationship between population income and housing typology? The methodology to address these questions is developed under qualitative analyses, specifically by in-depth interviews with key operations actors, such as developers, building workers, city planners, and administrators. I examine the role of the different actors involved in the operation, addressing the main character and social and urban impacts of this model. Moreover, I argue that the emergence of these trends in Latin American cities has increased housing financialization under a new model that promotes the financial market operation through a verticalization process of the city. This research will contribute to the urban planning and housing policy debate. Furthermore, it will contribute to the urban governance debate within developing cities in the Global South, where Corporate Landlords are a model increasingly rapidly as a new rental trend.

Citations

- Brenner, N. Peck, J & Theodore, N (2010) "Variegated neoliberalization: geographies, modalities, pathways". *Global Networks* 10, 2 (2010) 182–222. ISSN 1470–2266.
- Gilbert, A. (2015) "Rental housing: The international experience". *Habitat International* <http://dx.doi.org/10.1016/j.habitatint.2015.11.025>
- Harvey, D. (1989) "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism". *Geografiska Annaler: Series B, Human Geography*, 71:1, 3-17, DOI: 10.1080/04353684.1989.11879583.
- López-Morales E. Gasic, I. Meza, D. (2012) "Urbanismo pro- empresarial en Chile: políticas y planificación de la producción residencial en altura en el pericentro del Gran Santiago". Santiago: Revista INVI No76.
- Ugarte, J. Collier International, (July,2019). "Estudio revela las diferencias en las rentabilidades promedio del sector inmobiliario frente al mercado bursátil" CollierInternational: <https://www2.colliers.com/escl/news/santiago/rentabilidad>

Key Words: Housing financialization, Rental Trends, Corporate Landlords, Verticalization processes, Latin-America

COMMUNITY ENGAGEMENT, PARTICIPATORY PRACTICES AND CARE DURING THE PANDEMIC OF COVID-19 IN SLUMS OF RIO DE JANEIRO, BRAZIL

Abstract ID: 1431

Individual Paper Submission

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This paper aims to reflect upon the new challenges imposed during the COVID-19 pandemic in three selected squatter settlements in the city of Rio de Janeiro, Brazil. During the outbreak of the sanitary crisis, themes such as the quality of housing and the urban environment, as well as care as a public policy, gained a criticality in the debates about planning policies. The outburst of COVID-19 in 2020 had a significant impact on vulnerable low-income communities in many parts of the world. Not only did the precarious urban and housing conditions made community contagion widespread, but also other factors, such as the impossibility of staying at home, the need to go to work and cope with crowded public transportation, the sudden loss of jobs and the economic effect on local commerce, had substantial consequences on the lives of slums' dwellers. In the face of such an emergency, local community groups quickly organized themselves and established solidarity actions across their territories to help vulnerable residents to cope with the pandemic crisis. Different social solidarity practices emerged offering diverse types of services, from the distribution of staple food, protection and hygiene items to the distribution of explanatory leaflets about preventive measures to deal with COVID-19. The appearance of these groups can be partly explained by the difficulties of the State to meet the urgent needs of these communities and the growing sense of solidarity in the face of this unpredictable public health crisis. These local groups use the Internet, social networks and virtual media to organize volunteers and gather financial and material resources. Some solidarity initiatives emerged from existing local community groups and others were formed during the outbreak of the COVID-19 pandemic. Based on solidarity, empathy and the ethics of care, these groups are adding a new dimension to community engagement and local governance. In this context, this paper intends to investigate the practices of participatory planning and solidarity actions that have taken place from March 2020 to March 2022 in three slums in Rio de Janeiro, Brazil (Favela da Rocinha, Pavão-Pavãozinho/Cantagalo and Babilônia/Chapéu Mangueira). This paper uses empirical evidence from the three favelas and articulate it with theories about grassroots practices and engagement, approaching the issue of participatory planning from the perspective of the ethics of care and social justice, particularly from feminist studies (Fisher; Tronto, 1990; Forester, 2020; Jon, 2020; Lefebvre, 2014). Due to the pandemic situation, the research methodology used remote mapping and digital ethnography, including information gathered from social networks, community websites as well as different kinds of media and online platforms. Previous ethnographic data gathered in these communities before the COVID-19 outburst complemented the empirical research. The preliminary results show that most solidarity initiatives during the pandemic outgrew from existent local grassroots groups acting together or in network with outside groups from other squatter settlements or NGOs. The paper contributes to instruct planning theory, practices and public policies in issues concerned with grassroots participatory planning. It supports the argument that community groups and dwellers of favelas are socio-spatial groups that produce knowledge and are capable of solidarity action in emergency situations, when the State fails to act promptly. It also reinforces the importance of bottom-up collaborative planning in the struggle for social justice.

Citations

- Coutinho M. da Silva, Rachel. (2006) A radical strategy to deal with slum upgrading in the city of Rio de Janeiro In: *Translating the City. Interdisciplinarity in urban studies*.1 ed.Oxford : Routledge, 2015, v.1, p. 57-72.
- Fisher, B; Tronto, J. (1990) Toward a feminist theory of caring, In: Abel, E. E.; Nelson, M. (eds.) *Circles of Care*. Albany: SUNY Press.
- Forester, J. (2020) Kindness, Planners' Response to Vulnerability, and an Ethics of Care in the Time of Covid-19, *Planning Theory & Practice*, 21:2, 185-188,
- Jon, I. (2020). A manifesto for planning after the coronavirus: Towards planning of care. *Planning Theory*, 19(3), 329-345.
- Lefebvre, H. (2014). *Critique of everyday life*. The one-volume edition. London, England: Verso.

Key Words: Grassroots planning, Community engagement, COVID-19, Ethics of care, Rio de Janeiro's slums

TRANSACTION COSTS IN PLANNING FOR BASIC INFRASTRUCTURE SERVICES IN TRANSBORDER CITIES DESIGNATED FOR SEZs: A CASE OF BATAM CITY, INDONESIA

Abstract ID: 1492

Individual Paper Submission

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Since its first conception in the 1960s, special economic zone policy has found its home in many cities in developing economies. A recent UNCTAD report (United Nations, 2018, Table IV.2, p.138) shows that by 2019 the number of global SEZs reached 5,383 zones. Of those, 4,772 zones were in developing economies, and 374 were in developed countries. SEZ' planning strategy gains popularity as countries aim to increase their comparative advantage against neighboring countries (The World Bank, 2017; Farole and Akinci, 2011). Although scholarly publications argue that countries were motivated to build their own SEZs following success in Southern China (Nevelling, 2018), most SEZs developed in other countries could not emulate China's success. Alternatively, some countries joined in partnerships and clustered their SEZs around primary countries with higher economic capacity by forming a Regional Trade

Agreement (RTA) (Koyama Naoko in Farole and Akinci, 2011, p.80-83). In cities under RTA agreements, firms coming from higher-income countries benefited from relocating to SEZs in less developed subregions as they reduced production costs in the form of tax holidays, cheap labor, and land price discounts. Meanwhile, local firms and small business enterprises in less-developed subregions lacked the capital and skills and received the least benefit to relocate in SEZs (Farole and Akinci, 2011, p.130-135; Nadvi and Scmitz, 1994).

Taking the example from the city of Batam, this paper seeks to explain how RTA planning frameworks affect local planning institutions responsible for infrastructure development as planners select land for its highest and best use for foreign investments. Batam city has been a part of the SIJORI Growth Triangle RTA since the early 1990s. The SIJORI Growth Triangle framework was promoted by the Singaporean government to establish a regional economic marketplace in three transborder cities (Singapore-Johor-Batam) (Hutchinson and Chong, 2016; Bunnell, et.al., 2011). Over the years, Batam city has also become a hub of domestic markets and attracts mostly low-skilled local workers and firms seeking an opportunity to expand their businesses. As Batam city market institutions indicate a mixture of formal and a large proportion of informal market activities, the influence of exogenous planning such as the SIJORI Growth Triangle frameworks presents a question in planning for cities underhanded by RTA policy. How do planners in emerging economies resolve the infrastructure planning dilemma of inequitable growth in specially designated areas historically relying on discriminating land use policy to sustain its growth?

In answering this question, the study compares the original plan for water supply and street development with completed projects in SEZ areas and non-SEZ commercial centers in Batam city island from 2008-2014 and 2015-2019. The study also compares the planned and actual capital budget documents for Batam city outsourced from the National and local government agencies between 2008- 2019. Finally, this paper applies transaction cost economic theory to the study of SEZ areas and non-SEZs and measures ex-ante transaction costs at the design stage and ex-post expenses of monitoring and maladaptation such as the additional legal fees and adjustment to projects on-site, including the costs for informal adaptation to network systems (Alexander, 2001; Williamson, 1999). The analysis presented in this paper compares and contrasts the total transaction costs in areas designated as SEZs and non-SEZs and highlights the discrepancies of infrastructure costs affected by discriminatory land use practices.

Empirical findings clarify the impact of transborder policy on the patterns of infrastructure allocation and planning safeguards relating to equity. Findings in this study can provide inputs for planning instruments adaptation and weigh how planning can provide remedy by emphasizing ethical choices to plan for a more equitable distribution of infrastructure services.

Citations

- Alexander, E. R. (2001). A Transaction-Cost Theory of Land Use Planning and Development Control: Towards the Institutional Analysis of Public Planning. *The Town Planning Review*, 72(1), 45–75.
- North, D. C. (Douglass C. (1990). *Institutions, institutional change, and economic performance*. Cambridge; New York?: Cambridge University Press.
- Williamson, O. E. (1975). *Markets and hierarchies, analysis and antitrust implications: A study in the economics of internal organization*. New York: Free Press.
- Chong, T., Hutchinson, F. E., Chong, T., & Hutchinson, F. E. (2016). *The SIJORI cross-border region: Transnational politics, economics, and culture*. Singapore: ISEAS-Yusof Ishak Institute
- Bunnell, T., Grundy-Warr, C., Sidaway, J., & Sparke, M. (2011). *Geographies of Power in the Indonesia–Malaysia–Singapore Growth Triangle*. <https://doi.org/10.4337/9781781001011.00057>

Key Words: basic infrastructure, transaction costs economics, transborder planning, special economic zones

LOCAL GOVERNMENT LEADERSHIP AND CITY PLANNING: ANALYZING CONVERGENCE AND DIVERGENCE

Abstract ID: 1510

Individual Paper Submission

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What can city planners learn from a better understanding of the perspectives of local leaders? Local leaders set agendas, define policy directions, and allocate fiscal resources that affect the capacity of planners inside and outside local government. Their decisions also affect the actions planners can take to address issues such as climate change, access to affordable and secure housing, and the provision of core urban services (Acuto & Rayner, 2016; Einstein et al., 2020). Acuto (2013), refers to the power that local leaders exert on global governance as a “scholarly oversight” and the comparative literature about local leadership is limited (Davies & Msengana-Ndlela, 2015; Stren & Friendly, 2019). We argue that urban planners, planning scholars, and those interested in global governance would benefit from a better understanding of priorities, perspective, and experience of local leaders.

The paper seeks to address this “scholarly oversight” and draw implications for urban planning scholarship and practice. The paper analyzes the Global Survey of City Leaders (GSCL), the first ever globally representative sample of executive leaders of local governments. Depending on the national context, executive leaders can be either elected or appointed, and have different titles including, but not limited to, mayor, municipal commissioner, governor, town clerk, chief executive, or chairperson. We randomly selected 1000 municipalities from a list of 1,860 urban agglomerations with a population above 300,000 maintained by the United Nations.

We are still collecting responses to the survey, but to date, more than 100 local government executive leaders (mayors) have responded, and we aim to have a minimum of 200 cities in our sample. An international research team contacted city leaders by email, mail, phone, fax, WhatsApp, and social media from January to June 2022 to explain the project and encourage them to participate. The survey is divided into substantive sections including: (a) local economic development; (b) built environment, housing, and infrastructure; (c) the natural environment and climate change; (d) public health, social mobility, and migration; (e) governance and finance; and (g) COVID-19 recovery. The survey instrument is translated into 23 languages.

The paper will begin with some discussion of the variation of governance structures and the diverse powers of local leaders around the world. It will explore various theoretical perspectives on the power of local leaders, structure, agency, and the process of transformative urban change. The paper is the first comparative, descriptive analysis of the new dataset to address some of the following research questions: How do the perspectives of executive leaders about the local economy, housing, infrastructure, climate change, and social conditions differ by geographic region, city size, and national level of urbanization? Are there patterns that correspond to a city’s location in a developed versus developing country context? The paper will shed light on the perspective of local leaders while drawing connection to how this both supports and constrains planning practice.

Citations

- Acuto, M. (2013). City Leadership in Global Governance. *Global Governance*, 19(3), 481-498. <http://www.jstor.org/stable/24526208>
- Acuto, M., & Rayner, S. (2016). City networks: breaking gridlocks or forging (new) lock-ins? *International Affairs*, 92(5), 1147-1166. <https://doi.org/10.1111/1468-2346.12700>
- Davies, J. S., & Msengana-Ndlela, L. G. (2015). Urban power and political agency: Reflections on a study of local economic development in Johannesburg and Leeds. *Cities*, 44, 131-138. <https://doi.org/https://doi.org/10.1016/j.cities.2014.09.001>
- Einstein, K. L., Glick, D. M., & Palmer, M. (2020). Can Mayors Lead on Climate Change? Evidence from Six Years of Surveys. *The Forum*, 18(1), 71-86. <https://doi.org/doi:10.1515/for-2020-1004>
- Stren, R., & Friendly, A. (2019). Big city mayors: Still avatars of local politics? *Cities*, 84, 172-177. <https://doi.org/10.1016/j.cities.2018.08.005>

Key Words: Global governance, City planning, Local government, Urban politics

A COMPARATIVE STUDY ON THE RELATIONSHIP BETWEEN URBAN STREET CONNECTIVITY AND LIVABILITY: A FOCUS ON SPATIAL ANALYSES OF 30 CITIES IN THE WORLD

Abstract ID: 1552

Individual Paper Submission

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Street connectivity is one of the pivotal factors for sustainable urban development and mitigation of congestion in a city. Global city indices have been developed to evaluate competitiveness and livability of cities, including sub-indicators related to urban spatial features; sprawl, green space, natural assets, isolation, connectivity, public transportation and traffic congestion, etc. However, since these sub-indicators rarely include the street connectivity that is a fundamental element of a city, it is hard to figure out how urban spatial structures are relevant to livability of the cities. This study aims to find the relationship between the urban street connectivity and the livability by analyzing spatial patterns of 30 cities around the world. The street density and the intersection density represent the street connectivity. In this paper, Open Street Map (OSM) in QGIS was utilized to extract the road data of each city. With those data, the street density and the intersection density of the 30 cities were calculated. The result shows that the city where the street connectivity is high, the livability is also high. This paper has two implications; one is that it is based on empirical spatial analysis focusing on the relationship between the street connectivity and the livability of the cities, and another is that this work has set up the street data, which is the foundation of urban form, for the 30 cities. These data will be useful for further spatial analysis, in particular of those cities in developing countries.

Citations

- Bentina F, Kalashnikov V, and Tuncer B (2021) A Spatial Livability Index for dense urban centers. *Environment and Planning B* 48(7): 2006–2022.
- Kashef M. (2016) Urban Livability across disciplinary and professional boundaries. *Frontiers of Architectural Research* 5(2): 239–253.
- Mouratidis K. (2018) Is compact city livable? The impact of compact versus sprawled neighbourhoods on neighbourhood satisfaction. *Urban Studies* 55(11): 2408–2430.

Key Words: Street connectivity, Livability, Spatial Analysis, Developing Country, GIS

ACTIVATE, ARTICULATE, ADVOCATE: CO-PRODUCTION FOR THE RIGHT TO OCCUPY, HOLD GROUND, AND UPGRADE

Abstract ID: 1650

Individual Paper Submission

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This paper theorizes an alliance between universities, housing movements, advisory non-profits offices and informal dwellers' associations in Brazil in terms of co-production of knowledge and action. The network is part of a multi-year activist participatory action research¹ addressing one of Latin America's most pressing issues: the rapid, unequal and precarious informal urbanization of urban peripheries. With the goal of coalition building and housing advocacy, the Network of Favelas and Occupations, connects the experiences of young and consolidated informal areas in their struggle for adequate housing in São Paulo's Periphery. The Network raises awareness of land occupiers' rights, while advocating for transformational housing policy and universal access to public utilities, regardless of tenure status or age of the settlement.

The PAR approach emerged in the 1960s/70s, inspired by Paulo Freire² and the Latin American liberation theology movement, incorporating the participation of the poor in a pedagogical journey for self-emancipation and transformation of local and global structures of oppression.³ Building on this tradition, community participation and co-production of housing, popular urbanization plans, upgrading policies,⁴ serve to pressure the government to provide funds, while denouncing the structural causes of environmental injustices in informal and precarious settlements.⁵

We theorize three tactical components in the academic engagement: capacity building through service learning (extensão); knowledge exchange through the articulation of 14 younger and consolidated informal communities; and advocacy advancing funding and policy reform, for the right to occupy, hold ground, and upgrade through the celebration of popular symposia (Encontros de Favelas e Ocupações).

Informal dwellers are citizen-planners, creating secure shelter and resilient habitats. Universities must recognize their protagonism, joining their fight to defy inequalities. Occupying land and holding ground transforms the land occupiers' personal and positional identities. In raising awareness of one's position in the social relations of power, the role of the academic is to join forces, expanding the network of solidarity for social and housing justice.

Citations

- Chevalier, J. M., & Buckles, D. J. (2019). *Participatory action research: Theory and methods for engaged inquiry*. Routledge Press.
- Freire, P. (1987[1970]). *Pedagogia do oprimido*. 17^a. Ed. Rio de Janeiro: Paz e Terra.
- Hickey, S., & Mohan, G. (2005). Relocating participation within a radical politics of development. *Development and change*, 36(2), 237–262.
- Pimentel Walker, A. P., de Alarcón, M. A., Santo Amore, C., Lopes dos Reis, N., Rajkumar Nair, N., Yelk, J., & Liu, Y. (2021). Young Land Occupations and the Failure of Housing Policy in Brazil. *Housing Policy Debate*, 1–22.
- Sletto, B., Tabor, S., & Strickler, K. (2019). Sustainable urban water management and integrated development in informal settlements: The contested politics of co-production in Santo Domingo, Dominican Republic. *Global Environmental Change*, 54, 195–202.

Key Words: Participatory Action Research, Co-production, Informal and precarious settlements, Coalition building, Right to housing

HOW DO TRANSPORT WORKERS DO TRANSPORT PLANNING?

Abstract ID: 1673

Individual Paper Submission

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Urban mass transit in African cities, and around the world, relies on small-scale, privately owned and operated minibuses that operate with limited regulation and no subsidy or state support. These systems – often called “informal” transport, paratransit, or popular transport move hundreds of millions of people daily and provide a crucial mobility option for urban residents without access to private vehicles or formal, state managed, public transport.

Based on research in Lilongwe, Kampala and Nairobi, this project reveals the role that workers and organizations play in developing, organizing, and planning the route networks and operations of transport. With no support or protection, they must operate where profit is possible, often with little margin or room for error. Private transport operators must balance the competition between individual drivers for passengers, who often operate on exploitative daily contracts, with the needs of a particular terminal or the industry as a whole.

The comparative case study between three East African capitals with very different forms of organization in the transport sector reveals both structural differences and consistent patterns. Amalgamation into geographically delineated associations, based around origin and departure terminals or sub-metropolitan clusters of routes, creates careful management of competition in order to develop a fair division of work and profit between independent operators. This also means pro-active development and investment in new routes, motivated by passenger needs and perceived gaps in service. In city-wide networks, competition is instead balanced between existing routes, and the lack of localized organization, leads to forms of coordination failure and stymied route development and more caution in choices of destinations.

It is critical to recognize transport workers in such systems and cities – drivers, conductors, vehicle owners, mechanics, route managers and others in the urban labour ecosystem – as active agents of planning, urban growth and development, and public service providers. This is impossible to disentangle from the structural inequities and exploitation borne by this often-marginalized workforce. Workers and passengers are often pitched against one another in discourse and policy, with the labour rights and job quality of workers coming at the expense of the services available to passenger. Some writers and organizations (Attoh, 2019; ITF, 2018; Spooner & Mwanika, 2018) instead conceptualize an alliance.

This project, based on interviews with transport workers and managers in African cities, shows the relationship to passengers and the ‘reading’ of the city, power relations and unionization within the sector, use of data and measurement, and above all, coordination and cooperation that go into the development and expansion of “informal” route networks in African cities. Building on this, alliances with transport workers and passenger-worker solidarity can potentially be opened up as concrete planning practices, in which basic accessibility – routes, terminals, destinations – is co-developed between communities and operators.

Citations

- Attoh, K. A. (2019). *Rights in Transit: Public Transportation and the Right to the City in California’s East Bay*. University of Georgia Press.
- ITF. (2018). *Policy Priorities for Decarbonising Urban Passenger Transport*. https://www.itf-oecd.org/sites/default/files/docs/policy-priorities-decarbonising-urban-passenger-transport_o.pdf
- Spooner, D., & Mwanika, J. M. (2018). Transforming Transport Unions through Mass Organisation of Informal Workers: A Case Study of the ATGWU in Uganda. *Global Labour Journal*, 9(2). <https://doi.org/10.15173/glj.v9i2.3347>

Key Words: Informal transport, paratransit, African cities, labor

HOW TO TRAIN YOUR CAPITALISTS: STATE-PRIVATE SECTOR DISCIPLINE AND ECONOMIC DYNAMISM IN JALISCO AND QUERÉTARO, MEXICO, 1980-2020

Abstract ID: 1686

Individual Paper Submission

Increased state intervention and new forms of industrial policy are subjects of increasingly intense interest due to both the abandonment of “Washington Consensus” neoliberalism in the COVID-19 pandemic as well as growing calls for decisive government action in the face of climate crisis, challenges to local resilience in global supply chains, and increased geopolitical rivalry. Yet while social scientists and policymakers alike seem to widely agree that states need to further assert themselves in the economy, the question remains of how states can learn to effectively meet the challenging, complex and uncertain issues to which they are called to respond.

Leveraging subnational variation in Mexico, a large middle-income developing country, we examine divergent regional development trajectories to contribute to the discussion of building state capacity for effective structural interventions in the economy. We focus on two Mexican states – Querétaro and Jalisco – which entered the neoliberal era with widely differing prospects. Jalisco, one of the largest and wealthiest states in Mexico, was forming what would become known as “Mexico’s Silicon Valley.” Meanwhile, Querétaro, a much smaller and historically poorer state, was trying – without advantages such as the maquiladora tax regime that was enjoyed in states along Mexico’s northern border at the time – to make headway in an intense competition to build up its manufacturing sector. Nevertheless, from the initiation of Mexico’s liberalization era in the early 1980s to the present, it was Querétaro, and not Jalisco, that flourished, attaining some of the highest levels of GDP per capita in the country while expanding its skilled workforce and advanced industries. During the same time, Jalisco was a relative laggard, and its vaunted “Silicon Valley” dissipated into a series of stagnant contract manufacturers for foreign firms.

We analyze this divergence from the perspective of state-business relations, focusing on the role the two local governments had in “disciplining” their various sources of capital investment – local, from other regions of Mexico, and international. Early on, Jalisco supported its local capitalists with subsidies and few curtailments on their investments. Meanwhile, Querétaro’s government enlisted local capitalists in a series of often failed, but usually disciplining, development efforts, such as aqueducts, railroads, and industrial parks. These different disciplining approaches affected the developmental priorities and perspectives of local capital. They also shaped the ways in which local capitalists integrated external investors into their business associations and taught them norms and routines of local politics. Through a process-tracing analysis of state-business relations, we examine how actors in each state introduced measures that varied in the extent to which they “disciplined” local and external capital towards long-term investment in public goods and workforce productivity. These process-based analyses illustrate how these interactions cumulatively affected local value chain insertion, as well as upgrading of workforce skills and firm capabilities. Building on cross-sectional and longitudinal industry-level comparisons within and across the two states, we establish propositions for how governments can assemble a “disciplinary repertoire” for capital in response to challenging environments of globalized production and investment.

Citations

- Amsden, A. (2001). *The Rise of “The Rest”: Challenges to the West from Late-Industrializing Economies*. Oxford University Press.
- Chang, H.-J. (2010). How to ‘do’ a developmental state: Political, Organizational, and Human Resource Requirements for the Developmental State. In O. Edigheji (Ed.), *Constructing a Democratic Developmental State in South Africa; Potentials and Challenges*. HSRC Press.
- Hirschman, A. O. (1958). *The Strategy of Economic Development*. Yale University Press.
- Kahn, T. (2019). *Government-Business Relations and Regional Development in Post-Reform Mexico*. Palgrave Macmillan.

Key Words: Industrial policy, Developmental state, State-business relations

REVISITING BRASÍLIA: PLANNING AND INEQUALITY IN THE DEMOCRATIC CITY

Abstract ID: 1706

Individual Paper Submission

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Brasília is recognized in the North American planning literature as the quintessential modernist, planned city. The capital of Brazil, Brasília was established, ostensibly from scratch, in the remote center of the country in 1960, and it has since come to symbolize the failures of modernist planning: excessive separation of uses and dependence on private automobility; lack of vibrant streetscapes and authentic public spaces that support civil society; and failure to adapt to unplanned contingencies (corresponding with expansion of informal or unregulated activities and uses). Through important critiques of the city’s design (e.g., Scott 1998, Banerjee 2021), planners and social scientists have learned important lessons from Brasília about the dangers of high-modernist ideologies and top-down methods of planning and implementation. These critiques draw primarily on field research from the 1980s and earlier (Holston

1989), when the city was still relatively young and Brazil remained under a military dictatorship. To what extent is the critique of the modernist city still applicable to Brasília? How has democratization since 1985 shifted the dynamics of the city's urban development? Six decades after Brasília's creation, what is the legacy of its modernist design?

I address these questions through a "revisit" (Burawoy 2003) of James Holston's (1989) classic case study of Brasília in the early 1980s, asking a similar set of questions of an object and context that have transformed over time. Since the 1980s, Brasília and its context have changed significantly. Having transitioned to a democratic regime of planning and governance, the city now lies at the heart of Brazil's most rapidly growing metropolitan region, an amalgam of formal, informal, and regularized settlements. Following Holston, I will assess the framework and approach of the Federal District's planning efforts since the 1990s and their impact on society and the built environment in the planned core of the city as well as the region's outlying, poor and working-class administrative districts. The analysis is presented as a nested case study, assessing the region as a whole, as well as the dynamics of urban development in three administrative regions: the central "pilot plan" area, Cielândia (an older "satellite city") and Sol Nascente (a settlement regularized in 2019, formerly Brazil's largest favela). The case study draws on planning documents, secondary literature and news articles in Portuguese, and ethnographic-style fieldwork, including site visits and interviews with land use, housing, transportation and economic development planners, as well as residents and leaders of neighborhood associations. I find that in recent decades, politicians have regularly responded to democratic pressures with measures that extended recognition to informal settlements and upgrade poor residential districts, which residents vie. Also, during moments in the mid-1990s and 2000s, Brasília pioneered innovative social policies, slum upgrading programs, and expansions to the regional transit system -- which have rescaled and reshaped the dynamics of regional inequality.

Though today's Brasília is certainly not a city without inequalities or other urban problems, I argue that the established critiques of Brasília are incomplete and misleading in light of subsequent historical developments. Recognizing Brasília on the register of an ordinary city (Robinson 2006), and not simply as the exemplar of the modernist city, reveals a new set of practical lessons for the equitable development of cities in the Global South, especially those that inherit legacies of authoritarian political regimes or modernist "new town" designs (Wakeman 2016). I conclude with an appeal for a more active updating of case study scholarship in planning in order to accommodate the ongoing historical evolution of cities and offer up new lessons that may be of greater contemporary relevance.

Citations

- Banerjee, Tridib. *In the Images of Development: City Design in the Global South*. Cambridge, MA: MIT Press, 2021.
- Holston, James. *The Modernist City: An Anthropological Critique of Brasilia*. University of Chicago Press, 1989.
- Robinson, Jennifer. *Ordinary Cities: Between Modernity and Development*. 1st edition. London?; New York: Routledge, 2006.
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press, 1999.
- Wakeman, Rosemary. *Practicing utopia: an intellectual history of the new town movement*. University of Chicago Press, 2016.

Key Words: Brasília, democracy, informality, equity, housing

BEST MANAGEMENT PRACTICES IN WATER GOVERNANCE AND CLIMATE ADAPTATION IN SASKATCHEWAN, CANADA- VOICES FROM THE PRAIRIES

Abstract ID: 1713

Individual Paper Submission

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The "wicked problem" of climate change will create and increase risk for natural and human systems, risk that is spread unequally, making adaptation a critical challenge. The province of Saskatchewan contains 46% of Canada's farmland and is the breadbasket of Canada. This province faces intense climate variability, which will further exacerbate the already frequent droughts and floods.

The Canadian Disaster Database identifies "prairie drought" as the foremost costly disaster in Canada, the 2001/2002 drought years in Alberta and Saskatchewan caused a \$3.6 billion drop in Canadian agricultural production, a \$5.8 billion drop in Canada's gross domestic product, crop insurance payments in Saskatchewan were \$1.431 billion, SK farm income was negative in 2002, and there was a loss of 41,000 jobs.

To meet the challenges of water governance in Saskatchewan, Best Management Practices have been used to improve

water quality and control water pollution in various sectors such as agriculture, fisheries, aquaculture, forestry, and watershed management since the acceptance of the Clean Water Act 1972. Despite the fact that BMPs have been around for more than 50 years, Canada's water quality is at risk and is degrading. Even though toxic effluents are heavily regulated in Canada, release of nutrients into the watershed is common and elevated concentrations of these nutrients remain a critical water quality issue in Canada.

This poor water quality is possibly due to the fact that BMPs have been understood from the viewpoint of the disciplines of physical sciences and do not adequately reflect in governance and policy science. While exact correlation and causation may be difficult to establish between water governance and water quality, linkages now exist between the two in literature, globally and locally “the water crisis,” accentuated by climate change, is increasingly recognized as a crisis of water governance. It is implied as a crisis of decision-making processes between people, government, and business with respect to water. The water crisis cannot be solved simply through technical solutions.

To address the water governance and climate challenges, and when traditional and centralised systems of governance have proven inadequate many municipalities and communities in SK have developed a set of “best management practices” and adaptations to water and climate change challenges. These include drainage ditches for crop flooding, source water protection plans, waste-water treatment plants etc. These are important players as the 2001–2002 SK drought demonstrated the value of local and informal governance mechanisms as strong community spirit enforced compliance with water-saving strategies and the social cohesion of rural communities facilitated cooperative strategies to persuade senior water rights holders to share their allocations to maintain the viability of rural communities

However, not much is known about these community adaptive practices and they are not mainstreamed into policies and BMP literature. Policy (social) science are often treated as externalities in technical and scientific matters, and social scientists are called almost as an afterthought when scientific and/or technical work is completed.

It is important to know them as while Canadian municipalities build, own and maintain most of the infrastructure for the past 20 years, municipalities have been facing fiscal austerity due to increasing roles and responsibilities and decreasing revenues.

Using qualitative multiple case study method this research identifies and understands BMPs and their robustness as adaptive governance measures) in 13 Saskatchewan municipalities. This work is significant as adaptive institutions are much needed in the Prairies.

Citations

- Hurlbert Margot (2018). Adaptive Governance of Disaster-Drought and Flood in Rural Areas. Springer International Publishing
- IPCC AR 5 (2014). Climate Change 2014 Synthesis Report Summary for Policymakers. https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf
- Hurlbert and Gupta (2019). An institutional analysis method for identifying policy instruments facilitating the adaptive governance of drought. Environmental Science & Policy. Volume 93, March 2019, Pages 221-231.
- Sauchyn, Diaz, and Kulshrestha (2010) The New Normal: The Canadian Prairies in a Changing Climate. University of Regina Press; First Edition
- Yin, R.K. (2003) Case Study Research: Design and Methods. 3rd Edition, Sage, Thousand Oaks Water Security Agency (2021). Annual Report for 2019-2020 State of Drinking Water Quality in Saskatchewan. <https://www.wsask.ca/Global/About%20WSA/Publications/SDWS-Annual-Report-2019-2020-FINAL.pdf>

Key Words: Climate Adaptation, Water Governance, Saskatchewan, Canada, Municipalities

ENABLING LEGAL ENVIRONMENT FOR MEETING THE RATIONAL NEXUS PRINCIPLE: INSIGHTS FROM THE USE OF DEVELOPMENT CHARGES IN INDIA

Abstract ID: 1714

Individual Paper Submission

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Central theme or hypothesis

Governments at all levels—national to local—are fiscally constrained, especially in the developing countries of the Global South. The local and state governments in particular are in a fiscal bind in this region because, among others: a) a large proportion of tax and fee revenue typically accrues to national governments and b) local and state governments have very little authority to levy new taxes. In such a scenario, these countries urgently need additional

revenue sources to fund urban development, especially due to their rapid rate of urbanization. Development charges are a potential revenue source.

Among all the countries in the world, India is projected to increase its urban population the most—404 million between 2014 and 2050. In India, property developers typically pay development charges at the time of seeking government approval to change/institute the use of their land parcels and/or to improve them. The revenues from these charges are used to develop the infrastructure/services needed to service the proposed development. From a legal standpoint, these charges are considered a fee, not a tax. Accordingly, the courts in India, like those in the US, require these charges to meet the “nexus” and “rough proportionality” principles. The nexus principle stipulates that there should be a connection between the charges and the impacts caused by the charge-paying development. The rough proportionality principle calls for the charges to be in proportion to the cost of mitigating the impacts of the charge-paying development. Combined, these two principles constitute the “rational nexus” principle.

As local governments in India seek to increase development charges or to levy them, there is an urgent need to investigate how these charges can meet the rational nexus principle; otherwise, they can be successfully challenged in court. Indeed, the rational nexus principle was cited to legally challenge the state of Tamil Nadu’s Infrastructure and Amenity Fee. This paper seeks to begin to fill this research gap by reviewing several pieces of state-level enabling legislation to: a) show how the legislation hinders or promotes the rational nexus principle, and b) identify major insights that can help India and potentially other developing countries craft or amend legislation that can withstand legal challenges.

Approach and methodology

Using a recently published report by the Government of India, this study identifies development charge-related state-level legislation for 22 states. Next, using the strategies to promote the rational nexus principle identified in Mathur (2016), it examines whether/how these pieces of legislation hinder or support this principle. Finally, the study findings are synthesized to highlight how legislation can support or hinder the rational nexus principle.

Findings and relevance of work

Through a summary and synthesis of India’s development charge-enabling state legislation, this research advances the strand of applied research that seeks to examine ways to make development charges legally defensible by showing how they can be designed to meet the rational nexus principle. The extant research in this line of inquiry has been largely US-focused and calls for data-intensive studies as inputs for designing the charges. However, conducting such studies is often not feasible in many developing countries. Therefore, this study uses India as an example to examine whether: a) context-sensitive exemplars of how enabling legislation is promoting or could promote the rational nexus principle in a developing country already exist; and b) what are some of the ways these pieces of legislation hinder the rational nexus principle and how the hindrances can be removed. Finally, the study provides several key insights that jurisdictions in India and potentially in other Global South countries can use as they adopt/amend development charge-enabling legislation.

Citations

- Altshuler, A., Gómez-Ibáñez, J. (2000). *Regulation for Revenue: The Political Economy of Land Use Exactions*. Washington, DC: Brookings Institution and Lincoln Institute of Land Policy.
- Evans-Cowley, J. (2006). *Development exactions: Process and Planning Issues*. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.
- Mathur, S. (2016). Designing an Impact Fee Program to Meet Rational Nexus Principle and Reduce Vertical Inequity. *Public Works Management & Policy*, 21, 324–345.
- Nelson, A. (1995). *System Development Charges for Water, Wastewater, and Stormwater Facilities*. Boca Raton, FL: CRC Press.
- Nicholas, J. (1988). Calculating Proportionate Share Impact Fees. In R. Alterman (Ed), *The private finance of public services*. New York: New York University Press.

Key Words: India, Developing Countries, Development Charges, Infrastructure Finance, Municipal Finance

PLANNING CURRICULUM AND PROFESSIONAL PRACTICE IN MEXICO

Abstract ID: 1719

Individual Paper Submission

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The objective of the article is to analyze to what extent planning curriculum is offering to practitioners the knowledge, skills, and abilities (KSA) that are demanded in the job market. Thus, the main question address: Is there a match

between the planning curriculum and professional practice? Answering this question is critical not only for the academic institutions that offer planning degrees, but also for the planning profession and practice. The article relevance is based on the premise advanced by Alterman (2017) that the planning profession, in order to achieve a consolidated status and a social prestige, needs to meet some criteria: a) there needs to be a demand of the KSA that society values and perceived as critical to their wellbeing; b) a profession that enjoys certain autonomy to develop solutions judged as the best; and c) the existence of a professional organization with strong links between the academic community and the profession. So, the article focuses on analyzing and testing the premises discussed previously.

The paper uses a mixed methodology that combined a qualitative content analysis and a standardized survey. On the one hand, the planning curriculum was analyzed based on 12 graduate programs and a total of 253 syllabi. Atlas.ti was used to code and analyze the content. On the other hand, planning practice information was gathered through a standardized survey of 141 planning practitioners. The definition of KSA developed by the AICP to certify planner and the ACSP Planning Accreditation Board (PAB) criteria were used as a tool or common denominator to compare and analyzed the two instruments. The common thread are: 1) plan making and implementation, 2) functional areas of practice, 3) KSA, and 4) ethics and social justice. For each of the four dimension exist indicators and they were ranked from the most useful (emphasize) to the least and then the ranking are compared to see the distance between the curriculum and the professional practice.

Among the main findings are the following: The results show that it is more common that planning curriculum to teach KSA related to communicative and collaborative planning (post-modern planning). However, the planning practitioners emphasize that the KSA that used more often in their daily practice are those more associated with rational planning (data collection, information analysis, statistics, etc.). Another relevant finding is that ethics and social justice are issues that Mexican planner do not pay much attention while the planning curriculum addresses social justice, however, ethics still missing or very marginal.

Citations

- Alterman, Rachelle. (2017). From a Minor to a Major Profession: Can Planning and Planning Theory Meet the Challenges of Globalisation? *Transactions of the Association of European Schools of Planning* 1(1), 1–17.
- Andrea, Frank I & Silver, Christopher (2018). Introduction, En Frank, Andrea & Silver, Christopher (eds.) *Urban Planning Education: Beginnings, Global Movement and Future Prospects*. Cham, Switzerland, Springer
- Argyris, Chris & Schon, Donald. (1974). *Theory in Practice: Increasing professional effectiveness*. Jossey-Bass.
- Demerutis, Juan, A. (2018). Programas de urbanismo y planificación en Latinoamérica: ¿Quiénes Somos? Libro de Actas. XIV Congreso de la Asociación Latinoamericana de Escuelas de Urbanismo y Planificación. Santiago de Chile, 22-24 de Agosto, pp. 41-54.
- Perloff, Harvey. S. (1957). *Education for planning: city, state & regional*. The Johns Hopkins Press.

Key Words: Planning practice, planning demand, planning supply, Planning Mexico, Planning systems

MAPPING SCENARIOS OF URBAN EXPANSION OF INFORMAL SETTLEMENTS

Abstract ID: 1753

Individual Paper Submission

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It is well recognized that the urban growth motor is increasingly shifting to the Global South, where 98% of all future demographic growth is taking place. Considering resource consumption and particular land, this dominance is less visible, as cities in the Global North have a considerably higher per capita consumption. However, there is an agreement that the urban population increases at more significant rates in the Global South than in the North. Understanding the growth rate has profound implications for the future of cities, countries, regions, and the planet as a whole. However, there is significant uncertainty on how such change happens. A large share of the urban growth in the Global South is taking place informally and spatially manifests what the UN designates as "Slums."

This paper postulates two questions: First, looking at current trends and novel data, how much land would be occupied by informal settlements globally, and second and more importantly. How much land would be needed to achieve SDG Target 11.1 (access to adequate housing for all)? Data on informal urbanization is a great challenge as often it is of poor quality or just not available. While there are several initiatives to improve this situation, it will take years until data is collected and made available. In the perspective of the acute data shortage, we combine publicly

available data with novel research to carry out calculations with the following data sources and processes. We calculated housing needs for slum and non-slum population (1990, 2000, 2015, 2030). Projections for 2030 would be calculated by using linear projections of average growth rates.

These demographic numbers need to be related to space. Unfortunately, there is no global overview on spatial slum growth. The Atlas of Informality measure spatial expansion of informal settlements worldwide based on a growing sample that covers different slum types and their annual growth rate calculated. These individual case studies can only be meaningfully connected to the demographic numbers by relating them to city-wide slum inventories and by considering the relational share of different slum types. We have mapped twenty-four cities' informal settlements. The city-wide data and the global informal settlement neighborhood-level data permit extrapolating change trends and differences across regions. With this approach, it is possible to relate demographic to the spatial growth of slums and analyze the differences and similarities between world regions.

We found a deceleration of slum areas' urban growth from 2001 to 2015 concerning previous periods (5% vs. 0.5). However, we also found that urban boundaries do not capture a significant proportion of mapped slums, ranging from 52% to 1.2 %, depending on the world region. However, we found a negative correlation (-0.5) between % of slum area within municipal boundaries and the ratio of municipal area and urban center area. While more data points (particularly on the slum inventory level) will make the calculations more robust, these findings demonstrated growth patterns across regions and fundamental deficiencies in current methods for capturing periurban slum growth worldwide and which comprise current growth estimates.

The findings of the research are relevant for the following reasons:

1. It will provide data-based insights on a highly pertinent topic of contemporary urbanization (growth outside planning capacities). It allows differentiating growth dynamics in distinct world regions to identify similarities and differences.
2. Outlining different growth scenarios (based on housing space standards) provides a precise measure for decision-makers about the full spatial consequences of reducing socio-spatial inequality and exclusion.
3. The research findings provide proof of concept and support a call for a more comprehensive data collection of slums and informal settlements.

Citations

- Kuffer, Monika, Jiong Wang, Michael Nagenborg, Karin Pfeffer, Divyani Kohli, Richard Sliuzas, and Claudio Persello. 2018. "The Scope of Earth-Observation to Improve the Consistency of the SDG Slum Indicator." *ISPRS International Journal of Geo-Information* 7 (11): 428.
- Pesaresi, Martino, Guo Huadong, Xavier Blaes, Daniele Ehrlich, Stefano Ferri, Lionel Gueguen, Matina Halkia, Mayeul Kauffmann, Thomas Kemper, and Linlin Lu. 2013. "A Global Human Settlement Layer from Optical HR/VHR RS Data: Concept and First Results." *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 6 (5): 2102–31.
- Samper, Jota, Jennifer A. Shelby, and Dean Behary. 2020. "The Paradox of Informal Settlements Revealed in an ATLAS of Informality: Findings from Mapping Growth in the Most Common yet Unmapped Forms of Urbanization." *Sustainability* 12 (22): 9510.
- Thomson, Dana R., Monika Kuffer, Gianluca Boo, Beatrice Hati, Tais Grippa, Helen Elsey, Catherine Linard, Ron Mahabir, Catherine Kyobutungi, and Joshua Maviti. 2020. "Need for an Integrated Deprived Area 'Slum' Mapping System (IDEAMAPS) in Low-and Middle-Income Countries (LMICs)." *Social Sciences* 9 (5): 80.
- UN-Habitat. 2003. *The Challenge of Slums?: Global Report on Human Settlements, 2003*. London; Sterling, VA: Earthscan Publications.

Key Words: Informal Settlements, Slums, Urban Growth, Mapping, Peri urban

INFORMAL CAR SHARE (ICS) ADAPTATION STRATEGIES TO SERVICE DISRUPTIONS IN LATIN AMERICAN CITIES

Abstract ID: 1772

Individual Paper Submission

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Latin American cities are challenged by the effects of population growth, inequality, unstable political cycles, corruption, and the effects of climate change. As a consequence, the quality of life for Latin Americans is being compromised. One of the main challenges the region is facing is the lack of resilience in its cities and in its multiple infrastructure systems. However, many cities in the region do not understand how these systems function. Informal

Car Share (ICS) is an example of a part of many cities' complex transportation systems that is not well understood by local governments. ICS is a self-organized system of private vehicles that provide transportation for a fare. ICS is unregulated by any type of government. Just like other, more formal transportation systems, ICS is facing natural and political disruptions while it continues to grow. However, existing definitions of ICS are based on traditional effectiveness and performance indicators, and these are insufficient to describe how it functions and adapts to system disruptions. This research explores the characteristics of ICS that make it resilient. I used UN-Habitat's resiliency characteristics: persistency, adaptability and inclusiveness to explore ICS. I used the City of Quito, Ecuador, as an analytic case because of its similarity with many developing cities within the Andean region of South America. I focused on two peripheral communities and conducted 22 semi-structured interviews with drivers and users. Findings show that users and drivers within the ICS network use eight basic strategies to circumvent natural and political disruptions. These eight adaptation strategies align well with UN-Habitat's features of resilient urban systems. While ICS is an illegal, informal system, how it functions and adapts may provide insights useful for more formal transportation systems that operate in similar political and built environments.

Citations

- UN-HABITAT. (2018). City Resilience Profiling Tool. The United Nations Human Settlements Programme. <http://urbanresiliencehub.org/wp-content/uploads/2018/02/CRPT-Guide.pdf>
- Leitner, H., Sheppard, E., Webber, S., & Colven, E. (2018). Globalizing urban resilience. *Urban Geography*, 39(8), 1276–1284.
- Dovey, K. (2012). Informal urbanism and complex adaptive assemblage. *International Development Planning Review*, 34(4), 349–368.
- Cervero, R., & Golub, A. (2007). Informal transport: A global perspective. *Transport policy*, 14(6), 445-457.
- Ardila-Gomez, A. (2012). Public Transport in Latin America: A view from the World Bank. Presentation Retrieved from [Http://Www. Brt. Cl/Wpcontent/Uploads/2012/06/AAG-Public-Transport-in-Latin-America-a-View-From-the-World-Bank. Pdf](http://www.brt.cl/Wpcontent/Uploads/2012/06/AAG-Public-Transport-in-Latin-America-a-View-From-the-World-Bank.Pdf).

Key Words: Urban Informality, Informal Car Share, Urban Resilience, Resilient Transportation Systems, Self-Organized Systems

DISASTER RESPONSE - PLANNING ON THE FLY

Abstract ID: 1778

Individual Paper Submission

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The Covid 19 pandemic took most of the world by surprise. Even though there had been epidemics like Ebola and SARs in the last decade - the responses and protocols generated from those playbooks had seen limited takers. It was also clear that the pandemic-induced crisis, like most disasters (Solnit 2010), affected the vulnerable populations disproportionately, often skewing the state's response towards exacerbating their precarity (Joyce 2021). In India, during the first wave of the pandemic, the central government announced a comprehensive lockdown that effectively shut down the economic engines of the country. The urban poor, especially the poorer migrants, lost their livelihoods and therefore lost their only means of subsistence. They struggled to survive, either by venturing to return home or by attempting to stay in place. In most places, the grassroots organizations, and the local governments had to mount an effective response to this multi-faceted crisis (Pal, 2018; Ali, 2016). This response ranged from ensuring basic necessities in cordoned areas that were marked the “red zone”, advocating for and making provisions for migrant workers stranded across the country and world, to creating ways to help them return and ensure efficient quarantine facilities. This paper examines the efforts made by a state-civil society organization that rapidly formed in response in the State of Jharkhand, India, called the Jharkhand State Control Room (JSCR).

The JSCR registered and aided more than a million people who sought help during the first wave of the pandemic. Through interviews, content analysis, surveys, and embedded observation, I studied the evolution of various procedures that the JSCR developed to respond along with their contexts, impacts, and constraints. Without a guidebook for waging such a massive response, or how to operate through this unique, hybrid institution, I found that iterative procedure making, continued feedback loops (Thompson 2010) and street-level bureaucracy (Lipsky 1980) helped staff plan on the fly - building their disaster response as they went. I end by looking at related disaster response mechanisms, and lessons that can be drawn from other planning scenarios that rely on “creative discretion” and “context responsive improvising” (Forester et al., 2021), exploring how key parameters like accountability, feedback, impact assessment and flexibility are critical to the creation of successful response procedures.

Citations

- Lipsky, Michael. (1980). Street-level bureaucracy?: dilemmas of the individual in public services. Publications of Russell Sage Foundation. New York: Russell Sage Foundation.
- Solnit, Rebecca. (2010). A paradise built in hell?: the extraordinary communities that arise in disaster. New York: Penguin Books.
- Ali, Shahla F. (2016). Governing disasters?: engaging local populations in humanitarian relief. New York: Cambridge University Press.
- Thompson, Denise D. P. (2010). Building effectiveness in multi-state disaster management systems: The case of the Caribbean Disaster and Emergency Response Agency.
- Forester, John?; Verloo, Nanke?; Laws, David. (2021). Creative discretion and the structure of context-responsive improvising. Journal of urban affairs. Routledge.

Key Words: Disaster Response, Process Making, Context responsive improvising, Hybrid governance, Pandemic and Migrant Crisis

CLIMATE JUSTICE IS SOCIAL JUSTICE: ARTICULATING PEOPLES' RIGHTS TO THE CITY IN MUMBAI

Abstract ID: 1849

Individual Paper Submission

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The impacts of climate change on urban life are especially catastrophic for historically marginalised communities. Many cities and marginalised sections of their citizenry have already been grappling with diverse vulnerabilities including acute problems of access to basic urban services like housing, water, sanitation, and transport. Climate crises will further compound and aggravate the already existing and historical urban inequalities—social, political, and economic. In this context, the question we want to ask is how do we make urban climate justice measures incorporate the lived experiences of historically marginalized communities?

Often, the two challenges of urban inequality and climate change are thought of in isolation from one another. While one is considered baggage of the past, the other is the challenge of the future. We argue that the future city cannot be envisioned and its challenges cannot be addressed without looking at existing and historical inequalities and cleavages. This paper further argues that the agenda for urban climate justice should be elaborated and strengthened by learning from the ideas, actions, and demands made by urban social movements involved in the struggle for equitable access to basic urban services. It builds on the works of various scholars on two relevant themes of urban climate justice and right to city; and takes ahead the assertion that ‘urban climate justice is right to city’. To this end, the paper turns to the narratives, argumentations, and articulations of rights and claims pertaining to multidimensional urban inequalities made by social movements on behalf of marginalized urban communities.

The three pillars of urban climate justice, namely distributive, procedural, and recognitional, call for fair distribution of benefits and disadvantages, participation in decision-making, and recognizing existing and historical forms of inequalities. This paper develops grounded activist voices to argue that climate justice is best envisioned through the pursuit of two core elements of the concept of right to city — access to urban services, and the democratic right to exercise collective power to reshape the processes of urbanization.

We draw upon data from a broader research conducted in the city of Mumbai, India, that involved multi-round and extended semi-structured interviews, conducted over a period of ten months in 2019-20, of sixty-four respondents representing different key actor-groups: (a) academic and independent experts (b) elected and unelected politicians, (c) activists and leaders of social justice movements, and (d) municipal officials, technocrats, and bureaucrats. In this paper, we focus on our data on social justice movements in Mumbai, who are making powerful claims to the city by operationalizing the notion of a “right to the city.” We trace how the activist leaders of three social movements – The Ghar Bachao Ghar Banao Andolan (“Save a home, build a home” movement), Pani Haq Samiti (Right to Water Committee) and the Right to Pee movement – are articulating this as a collaborative movement for right to the city. What we could learn from these articulations is that the social justice movements in Mumbai have already formed latent yet powerful frameworks and on-ground, action-oriented models that speak both to the amelioration of the effects of historical and current inequalities, as well as the visions of a future just city. They have, in essence, been working to claim both the access to urban services and resources, as well as space and involvement in reshaping the process of urbanisation. We describe how these articulations can help us define the distributional, procedural, and recognitional justice requirements of the city’s climate justice agenda. We conclude that listening to such ‘voices from below’ will help us make urban climate justice an attainable goal.

Citations

- Bulkeley, Harriet, Gareth AS Edwards, and Sara Fuller (2014), "Contesting climate justice in the city: Examining politics and practice in urban climate change experiments." *Global Environmental Change*, Vol 25, pages 31-40.
- Chu, Eric, and Kavya Michael (2019) "Recognition in urban climate justice: Marginality and exclusion of migrants in Indian cities." *Environment and Urbanization*, Vol 31, no. 1, pages 139-156.
- Cohen, Daniel Aldana (2018), "Climate Justice and the Right to the City." *Penn: Current Research on Sustainable Urban Development*, The University of Pennsylvania
- Harvey, David (2008), "The right to the city" *New Left Review*, 53, 23-40.
- Lefebvre, Henri (1967), "Le droit à la ville." *L'Homme et la société* 6, no. 1 pages: 29-35.

Key Words: Urban Climate Justice, Right to City, Social Justice Movements, Urban Inequality, India

MECHANISMS OF INCLUSIVE URBANIZATION IN SUB-SAHARAN AFRICAN COUNTRIES

Abstract ID: 1850

Individual Paper Submission

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Sub-Saharan African (SSA) countries are undergoing urbanization at an unprecedentedly rapid rate. In 2019, among the top 20 countries with the fastest urbanization rates in the world, 17 are located in SSA (World Bank, 2020). It is projected that by 2050, the African urban population will triple, and 6 out of 10 people on that continent will live in urban areas (United Nations, 2018; UNICEF and UN Habitat, 2020). Increasingly, urbanization is seen as a development tool to promote economic development, reduce poverty, and improve individual wellbeing in SSA. Previous research has found that urban residents possess better economic status, living conditions, and health outcomes than their rural counterparts in SSA (Gollin et al, 2017; Parienté, 2017). Nevertheless, much is unknown about the underlying mechanisms of inclusive urbanization. Moreover, the urbanization discourse in international development often takes place at an aggregate level without reflecting the potential heterogeneous effects of secondary towns and large cities (Christiaensen and Kanbur, 2017). This obscurity hinders efficient investments and interventions for more inclusive urbanization in SSA. Researchers at UN-Habitat, World Bank, Brookings Institute, and other development organizations have called for more research and policy analysis into urbanization mechanisms and heterogeneity between secondary towns and large cities in SSA (Barofsky et al, 2016; Council on Foreign Relations, 2007; Christiaensen and Kanbur, 2017; Saghir and Santoro, 2017; UN-Habitat, 2020).

This study proposes to (1) investigate the causal relationship between urbanization and child nutritional outcomes – an important indicator for population health and human capital productivity in SSA; (2) study the underlying pathways linking urbanization and child nutritional outcomes, such as improved access to water and sanitation, housing, food diversity, medical care, and education; and (3) differentiate potentially heterogeneous effects of the development of secondary towns and large cities. The primary empirical strategy is to use difference-in-difference and matching to analyze a pseudo-panel dataset we built from Demographic and Health Surveys (DHS), satellite data, and population maps. The pseudo-panel is constructed from repeated cross-sectional data of DHS using spatial interpolation methods, which include information on child nutritional outcomes and many relevant variables, such as food intake (only recent rounds), housing quality, electricity, health service, water and sanitation, and parents' occupation and education, etc. Then we use provided household GPS coordinates to link them to urbanization indicators constructed from high-resolution satellite data and population maps. The urban indicators help us find places that did not experience urbanization, experienced urbanization with secondary towns, or experienced urbanization with large cities in the past three decades. We match similar villages from the three groups and conduct a difference-in-difference analysis.

While previous literature has demonstrated the association between more urbanized areas and better economic and health outcomes in SSA (Amare et al, 2020; Ru et al, 2022), very few studies have proved causality and underlying pathways. Neither is there robust evidence on the contribution of secondary towns versus big cities (Christiaensen and Kanbur, 2018). Thus, this paper aims to fill in the literature gap and leverage big data from remote sensing and large-scale household surveys to provide empirical evidence on causality, mechanisms, as well as heterogeneous effects of different-sized cities. The results will inform policy decisions on building more inclusive cities for the next generation in SSA.

Citations

- UNICEF and UN Habitat (2020). *Analysis of Multiple Deprivations in Secondary Cities in Sub-Saharan Africa*. New York: UNICEF. Retrieved from <https://www.unicef.org/esa/reports/analysis-multiple-deprivations-secondary-cities-sub-saharan-africa>

- Barofsky, J., Siba, E., and Grabinsky, J (2016). Can rapid urbanization in Africa reduce poverty? causes, opportunities, and policy recommendations. Brookings. Retrieved February 20, 2022, from <https://www.brookings.edu/blog/africa-in-focus/2016/09/07/can-rapid-urbanization-in-africa-reduce-poverty-causes-opportunities-and-policy-recommendations/>
- Christiaensen, L., & Kanbur, R. (2018). Secondary towns, jobs and poverty reduction: Introduction to world development special symposium. *World Development*, 108, 219–220. <https://doi.org/10.1016/j.worlddev.2018.04.010>
- Gollin, D., Kirchberger, M. and Lagakos, D. (2017). In Search of a Spatial Equilibrium in the Developing World. National Bureau of Economic Research Working Paper. <https://www.nber.org/papers/w23916>
- Ru, Y., Haile, B., and Carruthers, J. (2022). Urbanization and Child Growth Failure in Sub-Saharan Africa: A Geographical Analysis. *Journal of Geographical Systems*. Forthcoming.

Key Words: Sub-Saharan Africa, inclusive urbanization, child nutritional outcomes

OF INDIVIDUALS AND INSTITUTIONS: LEADERSHIP IN PARTICIPATORY UPGRADING IN INDONESIA

Abstract ID: 1856

Individual Paper Submission

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Critical investigations of pro-poor initiatives such as participatory upgrading have revealed that participation's success often hinges upon complex contextual nuances, often pertaining to the nature of institutions. Yet, in general, planning scholarship has scarcely explored why and how enabling factors may exist, to begin with, why certain individuals demonstrate exceptional leadership, and how institutions and institutional arrangements influence and are transformed by effective leadership, especially in the Global South. Understanding such nuances is useful for policymakers, planners, scholars, and activists, when inspired to emulate or prescribe successful policies, to appreciate potentials and caveats germane to context. This paper clarifies why and how the Indonesian city of Surabaya, a pioneer of urban upgrading, was able to catalyze community participation. It also argues that albeit developing a robust participatory ethos around the upgrading of kampung (poor settlements), the utilization and institutionalization of participation can yet grow in scale, scope, and inclusivity. Specifically, it attributes Surabaya's success with participation to pioneering leadership that introduced prudent planning innovations; political will; policy persistence; a permeating administrative structure; and productive partnerships that deepened trust with local universities and communities. In doing so, this institutional analysis with a historical perspective stresses the role of transformational leadership—something frequently acknowledged but insufficiently probed by planning scholarship. With planning research's focus privileging institutions, our understanding of how individuals can transform institutions is yet cursory. Rarely has planning literature discussed the influences, circumstances, and incentives of transformational leadership, conditions for which could be fostered by such understanding. This paper draws upon multiple sources of data: secondary literature; field notes and observations from numerous transect walks; conversations about local planning; news media reports; the author's prior primary research, spanning over a dozen years; and, in particular, from fieldwork for a larger project (2017) to understand how innovative upgrading policies proved transformative in Surabaya—for which the author conducted 18 in-depth, semi-structured interviews in English and Bahasa Indonesia.

Citations

- Das, A., & King, R. (2019). Surabaya: The Legacy of Participatory Upgrading of Informal Settlements (Towards a More Equal City). <https://www.wri.org/wri-citiesforall/publication/surabaya-legacy-participatory-upgrading-informal-settlements>
- Fahmi, F. Z., Prawira, M. I., Hudalah, D., & Firman, T. (2016). Leadership and collaborative planning: The case of Surakarta, Indonesia. *Planning Theory*, 15(3), 294–315. <https://doi.org/10.1177/1473095215584655>
- Haus, M., & Erling Klausen, J. (2011). Urban Leadership and Community Involvement: Ingredients for Good Governance? *Urban Affairs Review*, 47(2), 256–279. <https://doi.org/10.1177/1078087410388867>
- Kamath, L., & Joseph, M. (2015). How a Participatory Process Can Matter in Planning the City. *Economic & Political Weekly*, 50(39), 54–61.
- Krumholz, N., & Forester, J. (1990). Making equity planning work: Leadership in the public sector. Temple University Press.

Key Words: Leadership, Participation, Institutional collaboration, Surabaya, Indonesia, Global South

JABODETABEK: PLANNING AND GOVERNING A MEGACITY REGION

Abstract ID: 1878

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Jakarta, Indonesia anchors the largest megacity region in Southeast Asia, and purportedly the second most populous in the world. Plans prepared in the early years of the Indonesia Republic (1970s) called for creation of satellite cities utilizing lands along the edge of the capital city to accommodate anticipated population growth. Implementation of the plan turned out much differently than anticipated. Beginning in the 1980s and continuing through the 1990s, the original satellite settlements became twenty new town developments that haphazardly carved up over 16,000 hectares of agricultural lands for residential development and industrial parks throughout the region. Four new cities and their own growing peripheral settlements, plus the Dutch colonial city of Bogor, claimed over two-thirds of the more than 30 million residents by 2020 in the region now known as Jabodetabek.

Equally improved economic expansion in the peri-urban region complements the population growth. Government data tracking foreign direct investment in the Jakarta region between 1990 and 2012 showed that \$12.5 trillion fueled industrial expansion in the outlying region, particularly in Bekasi, with virtually no industrial investments added to Jakarta proper. Industrialization in Jakarta's the peri-urban region signaled the shift in a national economy traditionally led by oil and agriculture to one relying on more diverse exports. Indraprahasta and Derudder (2019) declared that peri-urban developments represented a step toward "world city formation," a longstanding goal of Jakarta's and Indonesia's leadership. Peri-urban development clearly challenged the longstanding urban primacy of Jakarta itself.

Transformation of the nation's capital city from the focal point of global stature to simply one among many urban partners in a vast regional complex point to the reduced primacy of Jakarta. The decision of the Indonesian government, announced in April 2019, to transfer the national government functions from Jakarta to a new green city, Nusantara, on the island of Kalimantan, confirmed the changing stature of Jakarta. With the region gaining legitimacy in its own right, and as Jakarta transitions from a national government center to a financial and service hub, the focus will shift to the city-region scale as the opportunities and challenges of urban life in Indonesia take new forms. This study will examine development, planning and governing in this megaurban region since it was first conceptualized during the New Order regime. It will focus on three critical questions. First, how has development of the new cities of in the megaurban region introduced new forms of urbanization and what have been the benefits and costs of this process? Second, what initiatives have been undertaken to address the problems identified in regional plans to serve the broader region and what problems persist? Finally, what governance structure(s) are necessary to ensure that the megapolitan region can effectively address critical needs of a population that is likely to continue growing well beyond the current 30 million mark.

Citations

- Cowherd, Robert (2002) "Planning or Cultural Construction: The Transformation of Jakarta in the Late Soeharto Period," in Peter J.M. Nas, ed. *The Indonesian Town Revisited*. Singapore: The Institute of Southeast Asian Studies, pp. 17-40
- Hudalah, Delik (2017) "Governing Industrial Estates on Jakarta's Periurban Area: From Shadow Government to Network Governance," *Singapore Journal of Tropical Geography* 38: 58-74.
- Coordinating Ministry for Economic Affairs (CMEA), Republic of Indonesia (2012) *Master Plan for Establishing Metropolitan Priority Area for Investment and Industry in Jabodetabek Area*, Final Report. Jakarta: Japan International Cooperation Agency and CMEA, November.
- Indraprahasta, Galuh Syahbana and Derudder, Ben (2019) "World City-ness in a Historical Perspective: Probing the Long-term Evolution of the Jakarta Metropolitan Area," *Habitat International* 89 (July).
- Silver, Christopher (2011) *Planning the Megacity: Jakarta in the Twentieth Century*. London: Routledge.

Key Words: megaregion, planning, governance, Jabodetabek, Jakarta

BETWEEN THE FORMAL AND THE INFORMAL: THE EVOLUTION OF A HYBRID BUILDING SYSTEM

Abstract ID: 1879

Individual Paper Submission

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The informal settlements of the developing world are often conceptualized as opposed to formality and are seen as an undesirable approach to planning (El-Masri and Kellett, 2001). By looking at interventions led under the scope of the Community Architect Program in La Habana Vieja and using notions of 'hybridity', a concept proposed by Latin American anthropologist García-Canclini (1989) to respond to changes in cultural patterns produced by globalization,

my research questions the validity of this widespread notion that there are only two oppositional approaches to the development of the built environment. The paper explores three questions: what are the characteristics and types of built environments in the area; what sets of logics and actors – or building systems – are producing them; and what lessons do we learn about hybridity, as contrasted with formality or informality, in urban development from the case of Old Havana?

Review of literature, reflection on the development of the built environment, and extensive fieldwork (i.e. semi-structured interviews with architects, planners and residents) led to the identification of five fundamental elements in the development of the built environment. These are: design decisions, building technologies and materials, labor, financing, and regulations. The process of identifying and conceptualizing these elements allowed for developing a more refined version of the concept of building systems as present by Alexander et al (2012). Building upon Alexander's definition of building systems, I argue that these are ways that organize these five fundamental elements during the development of a building, a neighborhood or a city and that the concept has the potential to link forces at the macro-levels of politics with architectural and planning outcomes. Using this multi-dimensional definition of a building system, the article examines the evolution of a 'hybrid' system in La Habana Vieja through the 'borrowing' and 'mixing' of elements from both 'informal' and 'formal' approaches to the production of the built environment. This 'hybrid' system, when functioning well, provides residents with choices throughout the design process, allowing them to have control over the configuration of their homes and apartments. Equally, this hybrid system assures that all construction is kept in line with existing urban regulations. The paper argues that, by adopting 'hybrid' approaches to the production and management of the built environment, planning departments can develop more sensitive responses to the management of settlements in the developing world. Also, this proposed multi-dimensional definition of building systems can help to better conceptualize the production of built environments and urban geographies.

Citations

- Alexander, C., Neis, H., & Moore Alexander, M. (2012). *The battle for the life and beauty of the Earth: A struggle between two world-systems*. Oxford University Press: New York.
- El-Masri, S., & Kellett, P. (2001). Post-war reconstruction. Participatory approaches to rebuilding the damaged villages of Lebanon: a case study of al-Burjain. *Habitat International*, 25(4), 535-557.
- García-Cañclini, N. (1989). *Hybrid cultures: Strategies for entering and leaving modernity*. Minneapolis: University of Minnesota Press.

Key Words: Hybridity, Informality, Building systems, Cuba

LEARNING FROM: KNOWLEDGE TRANSFER IN THE TRAJECTORIES OF INFORMAL AND PRECARIOUS INFORMAL SETTLEMENTS IN THE SOUTHERN PERIPHERY OF SÃO PAULO CITY

Abstract ID: 1907

Individual Paper Submission

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In the city of São Paulo, as in many countries of the Global South, the affordable housing crisis pushes low-income families to ever more distant urban peripheries (Caldeira, 2017; Maricatto, 2014) and drives the densification of consolidated informal and precarious settlements and irregular subdivisions, and the emergence of young land occupations (Pimentel Walker & Arquero de Alarcón, 2018). While some governments put in place comprehensive upgrading policies and funding, they tend to prioritize investments in areas with potential for real estate development and land value capture (Pimentel Walker et al 2021). As a result, informal dwellers occupying environmentally sensitive areas are left alone to provide for infrastructure and other incremental improvements.

This paper analyses the trajectory of three young land occupations and eleven consolidated informal and precarious settlements in the Southern periphery of São Paulo. Methods include in-depth interviews with fourteen community leaders documenting the trajectory of their occupations and settlements regarding the occurrence of land conflicts, the stage(s) of infrastructural improvements and urbanization, and history of eviction threats, evolving forms of community organizing, the gender roles, access to water, and covid-19 impacts. City-wide and community maps complete the portrait of each settlement in the Community Atlas. Last, six structured interviews with professionals working with social architecture non-profit firms, legal aid offices, the public defender office, and the housing movements offer additional insights into the entanglements in the long-term struggle for informal dwellers to attain the right to the city. These interviews took place virtually via video conference due to the pandemic between June and December 2020, as part of the Participatory Action Research (PAR) (Chevalier and Buckles, 2019).

The goal of the interviews has been to increase knowledge about the trajectories of young land occupations, informal and precarious settlements, and irregular subdivisions in the Southern periphery of São Paulo City, while fostering coalition building and co-producing strategies to advance tenure security and upgrading. The project aims to facilitate community organizing and coalition building and develop policy recommendations and advocacy tools that will change the long-lasting pattern of unequal urban development. Findings demonstrate that while young land occupations are the most vulnerable in the fight for acquiring tenure security, consolidated precarious settlements struggle to maintain it in the face of ever-expanding urban redevelopment projects and real estate pressures. Tenure insecurity can also affect communities that have been formally recognized under official land regularization programs.

Citations

- Caldeira, T. P. (2017). Peripheral urbanization: Autoconstruction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society and Space*, 35(1), 3-20.
- Chevalier, J. M., & Buckles, D. J. (2019). *Participatory action research: Theory and methods for engaged inquiry*. Routledge.
- Maricato, E. (2014). *O impasse da política urbana no Brasil (The impasse of the urban policy in Brazil)*. São Paulo: Vozes.
- Pimentel Walker, A. P., de Alarcón, M. A., Santo Amore, C., Lopes dos Reis, N., Rajkumar Nair, N., Yelk, J., & Liu, Y. (2021). Young Land Occupations and the Failure of Housing Policy in Brazil. *Housing Policy Debate*, 1-22.
- Pimentel Walker, A. P., & Arquero de Alarcón, M. (2018). The competing social and environmental functions of private urban land: The case of an informal land occupation in São Paulo's south periphery. *Sustainability*, 10(11), 4160.

Key Words: knowledge transfer, coalition building, advocacy tools, tenure [in]security, types of informal settlements

THE COST OF CENTRAL AMERICAN MIGRATION

Abstract ID: 1919

Individual Paper Submission

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The number of refugees and asylum-seekers from the northern countries in Central America has soared in the past 5 years, and studies show that food security, violence, and climate variability are factors for why people flee. With over 47,000 asylum-seekers from Central America worldwide, the phenomenon of migration out of destitution from Central America is likely to increase in 2021. This research explores the factors that drive people in El Salvador, Guatemala, and Honduras to consider and decide to migrate irregularly or regularly, as well as the cost and economic implications of migration for households and communities throughout the region. Using a survey administered by the WFP of 5,000 households in El Salvador, Guatemala, and Honduras in June 2021. Analysis of the data shows that migration from Central America costs close to 2.2 billion dollars in 2020. This cost is fundraised by the migrants through diverse means, everything from family and friends abroad to bank loans. The migrants' debt is compounded by the fact that only 57% of migrants reach their destination. Our research also shows the main reasons people migrate from this region are economics. Migrants cite not being able to provide basic needs for their families. Our analysis also shows that remittances only provide for basic needs, showing families depend on them to survive. Ultimately the work shows that the Economic cost of migration is shouldered by the migrant while both the US and the country of origin benefit from the economics involved.

Citations

- Andrew Selee and Ariel G. Ruiz Soto, "The Real Migration Crisis Is in Central America: To Stem the Flow, the United States Needs to Invest in the Region," *Foreign Affairs*, April 13, 2021; UN Economic Commission for Latin America and the Caribbean (ECLAC), "Diagnóstico, áreas de oportunidad y recomendaciones de la CEPAL," updated May 20, 2019.
- Peter J. Meyer, "Central American Migration: Root Causes and U.S. Policy" (In Focus brief, Congressional Review Service, Washington, DC, October 27, 2021).
- Andrew Selee and Ariel G. Ruiz Soto, *Building a New Regional Migration System: Redefining U.S. Cooperation with Mexico and Central America* (Washington, DC: Migration Policy Institute, 2020).
- Betilde Muñoz-Pogossian and Diego Chaves-González, *Environmental Explanations of Central American Migration: Challenges and Policy Recommendations* (Miami: Florida International University, Steven J.

Green School of International and Public Affairs, 2021), 39; Sarah Bermeo and David Leblang, "Climate, Violence, and Honduran Migration to the United States," Brookings Institution, April 1, 2021.

- Michael A. Clemens and Hannah M. Postel, "Deterring Emigration with Foreign Aid: An Overview of Evidence from Low-Income Countries" (policy paper 119, Center for Global Development, Washington, DC, February 2018).

Key Words: Migration, Cost, Central America, Migration Pathways, Remittances

THE GEOGRAPHY OF METROPOLITAN INEQUALITY: HOW DOES MUNICIPAL PUBLIC FINANCE INFLUENCE URBAN SERVICE AND INFRASTRUCTURE DISPARITIES?

Abstract ID: 1927

Individual Paper Submission

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The absence of metropolitan governance creates significant divergences in municipal finances, which manifests in unequal levels of service and infrastructure provision among neighboring municipalities. In the context of the United States, scholars have identified the problems that arise due to fragmented local governments, such as segregation and unequal access to public goods. However, no significant study has yet investigated how these dynamic manifests in metropolitan regions with larger municipal governments. Taking Mexico as a case study, this project analyzes how variations in revenue collection capacities at a municipal level influence inequality at a metropolitan scale. This analysis assesses the impact that varying revenue raising capacities have on urban service and infrastructure provision at a local level and tests the hypothesis that a lack of metropolitan governance leads to more unequal local urban environments. This research contributes to contemporary theory on the geography of public finances and metropolitan inequality in the Global South.

Citations

- Oates, Wallace E. "The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis." *Journal of Political Economy* 77, no. 6 (November 1, 1969): 957–71. <https://doi.org/10.1086/259584>
- Trejo-Nieto, Alejandra. "The Geography of Financial Condition in the Mexico City Metropolitan Area." *Local Economy* 36, no. 6 (September 1, 2021): 487–504. <https://doi.org/10.1177/02690942211060478>
- Flores-Macías, Gustavo A., ed. *The Political Economy of Taxation in Latin America*. Cambridge: Cambridge University Press, 2019. <https://doi.org/10.1017/9781108655934>.

Key Words: local public finances, inequality, metropolitan governance

REBUILDING SOCIAL LIFE POST-DISASTER: A CASE STUDY OF CARLES, PHILIPPINES AFTER TYPHOON YOLANDA

Abstract ID: 2001

Individual Paper Submission

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Community relocation post-disaster often focuses on rehousing disaster survivors. Scholars argue that government plans need to shift from "rehousing" to "rebuilding social life" post-disaster. This requires a holistic approach to rebuilding communities that includes infrastructure and services for housing, education, economic well-being, health care, and safety. There are not many studies that investigate the process of rebuilding social life especially in rural areas. In this paper, we examine four aspects of social life which include social capital (bonding, bridging, and linking), economic well-being, educational opportunities, and safety at an individual level in the Municipality of Carles, Province of Iloilo, Philippines to better understand how people are managing relocation and social life. In November 2013 one of the largest super-typhoons ever recorded hit landfall in the Philippines affecting over 16 million people in 596 municipalities. In Carles alone, over 65,000 people were affected, 10,000 homes were totally or partially destroyed, 430 hectares of fisheries were damaged, and nearly 3,000 fishing boats were totally or partially destroyed. After the disaster the government forbade development 40 meters from the shore and began the process of developing socialized housing in safe zones for disaster survivors. Carles was allotted 10,000 new homes. In 2019, a little over a year after people started moving into the new housing sites, we conducted semi-structured interviews with two municipal managers to understand the municipality's approach to community relocation and rebuilding social life. We then interviewed 14 relocated residents (8 residents from the island barangays, a small territorial and administrative local government district, and 6 residents from mainland barangays) at four housing sites on the

mainland to understand the process of relocation and rebuilding social life for each household. We found that the municipalities approach to relocating people from the same barangay to the same development site sustained bonding ties with extended family and neighbors. Bonding ties within a household became weaker because oftentimes seniors and head of household males stayed on the island to maintain their livelihoods. Bridging ties were being developed with people from other barangays that were relocated to the same housing development site. Most respondents who moved to a new barangay said that they would change their political local affiliation after the election cycle. The linking ties at the relocation site remain weak. In terms of economic well-being, all respondents went from being an informal settler to a formal settler with land and property. Housing stability helps people establish a new life in a new place over the long term. For islanders, it is more affordable to send their children to high school and college while living on the mainland because they do not have to pay for room and board. Islanders were living on the mainland during school months and returning to the island when school was out of session. Some people decided to find other job opportunities because subsistence fishing was too unstable. Most respondents were satisfied with the quality of the housing units and believed that the unit could withstand another super-typhoon. Respondents from the island barangays also said that their family members who remain on the islands can evacuate to their new homes before a storm hits landfall. This study demonstrates that relocation and rebuilding social life is a long-term process that can be sustained when government institutions support and facilitate the process. The availability of having two homes allows residents to gradually rebuild their lives in meaningful ways.

Citations

- Iuchi, K., & Mutter, J. (2020). Governing community relocation after major disasters: An analysis of three different approaches and its outcomes in Asia. *Progress in Disaster Science*, 6, 100071.
- Iuchi, K. (2014). Planning resettlement after disasters. *Journal of the American Planning Association*, 80(4), 413-425.
- Maly, E., Sakurai, A., Aure, F., Caintic, M. C. I., & Iuchi, K. (2021). Voices from communities relocated to Tacloban North after Typhoon Yolanda. In *IOP Conference Series: Earth and Environmental Science* (Vol. 630, No. 1, p. 012013). IOP Publishing.

Key Words: relocation, post-disaster recovery, social capital, community resilience

Track 7 Posters

THE INFLUENCE OF INDIVIDUAL PERCEPTIONS OF INCOME DISTRIBUTION AND SOCIAL CLASS ON LIFE SATISFACTION: CONSIDERING THE DEVELOPMENT LEVEL OF THE REGION

Abstract ID: 1483

Poster

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Purpose and Research Question

The purpose of this study is to empirically analyze the effects of perceptions of fairness in income distribution and individuals' subjective perceptions of social class on life satisfaction. In these days, one of Korea's main concerns is balance and distribution. Korea has achieved rapid economic development under the principle of growth first policy, but income inequality and polarization due to the unbalanced development of the country are being raised as chronic social and economic problems. In previous studies, it is known that social fairness and social class are related to an individual's life satisfaction (Ngamaba, 2017; Ngamaba et al., 2018; Martino&Prilleltensky, 2020; Tang&Tan, 2022). However, there is still little interest in differences in life satisfaction due to disparities at the regional level. Therefore, in this study, 1) we analyzed the effect of perception of fairness in income distribution and the subjective perception of social class of individuals on life satisfaction, and 2) show the pattern of these effects depending on the degree of development between regions.

Data and Methods

This study used the "2019 Gyeonggi-do Social Survey". Gyeonggi-do is considered to be the largest single region in Korea in terms of population and industry. Both the population and the regional gross domestic product have values of more than 25% of the national level (as of 2020). In addition, the northern and southern regions of Gyeonggi-do have a large imbalance in terms of population, economy, and system. This is because geographically, the northern

part was relatively alienated, unlike the case of the southern part, which was developed at the national level in connection with Seoul. Therefore, there is a large imbalance between the north and the south, which has been dealt with in various recent studies. It can be seen that these characteristics of Gyeonggi-do increase the external validity of the study and can be used as basic data for empirical analysis. As a research method, the dependent variable is life satisfaction, and the main explanatory variables are 1) perception of fairness of income distribution, 2) individual perception of subjective social class, and 3) degree of regional development. The analysis was performed using logistic regression analysis including several control variables.

Finding

As a result of the analysis, individuals who perceive that income distribution is fair have a higher probability of having a better level of life satisfaction. Also, it was found that the higher one's perception of subjective social class was, the higher the probability of having a better level of life satisfaction. This can be interpreted as having a positive effect on the fairness of income distribution and individual social class on life satisfaction. Likewise, it was found that individuals living in areas with a high degree of development had a higher level of life satisfaction, and also the influence of major explanatory variables on life satisfaction was low. These results show that in order to increase people's subjective life satisfaction, 1) it is necessary to create a social environment that can feel fair in terms of income distribution policies and wealth accumulation, and 2) diversified policies according to the degree of development that can alleviate regional imbalances. From the planner's point of view, considering that the Republic of Korea is economically and socially sufficiently developed, policies that can take care of individuals or regions who have been marginalized in the process so far are necessary. Considering that economic development is path-dependent and polarization is getting worse, planners should step in and think about these issues (Llerena & Lorentz, 2003).

Citations

- Di Martino, S., & Prilleltensky, I. (2020). Happiness as fairness: The relationship between national life satisfaction and social justice in EU countries. *Journal of community psychology*, 48(6), 1997-2012.
- Tang, B. W., & Tan, J. J. (2022). Subjective social class and life satisfaction: Role of class consistency and identity uncertainty. *Asian Journal of Social Psychology*, 25(1), 60-74.
- Ngamaba, K. H. (2017). Determinants of subjective well-being in representative samples of nations. *European journal of public health*, 27(2), 377-382.
- Ngamaba, K. H., Panagioti, M., & Armitage, C. J. (2018). Income inequality and subjective well-being: a systematic review and meta-analysis. *Quality of Life Research*, 27(3), 577-596.
- Argyrous, G. (1996). Cumulative causation and industrial evolution: Kaldor's four stages of industrialization as an evolutionary model. *Journal of Economic Issues*, 30(1), 97-119.

Key Words: Life Satisfaction, Fairness, Social Class, Regional Imbalance

IMMIGRANTS SHELTERS IN THE BORDER CITY OF CIUDAD JUÁREZ

Abstract ID: 2000

Poster

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In August 2018, the border city of Ciudad Juárez witnessed the abrupt and massive arrival of immigrants mainly from Cuba, Central and South America. The Casa del Migrante regularly housed those immigrants on their way to the United States, but the number of immigrants exceeded the shelter's capacity to house them. More than 5,000 people arrived at the end of 2018 and the beginning of 2019. At the beginning of 2021 and despite the Covid-19 pandemic, the number of migrants reported just in one month reached 17,445 (Inmigración, 2021). The government of Ciudad Juárez was overwhelmed, and the federal government intervened by opening one of the largest shelters for immigrants in the city, the Leona Vicario. In addition, informal community initiatives also emerged to house diverse communities. That was the case of the Casa de Colores, a shelter for immigrant trans women, located in the center of the city. These are some of the shelters for immigrants in the city, as little by little other sites opened while, because of COVID, others closed. This poster presents the location of the shelters for immigrants in Ciudad Juárez, a city that has always seen immigrants on their way to the neighboring country, but not in the numbers that abruptly filled the city with new accents and new colors, with people coming and going due to policy of Remain in Mexico. This immigration policy, implemented during the Trump administration, forces immigrants to remain in Mexico until they are given an appointment for their immigration interview. This context has put enormous pressure on planning for immigrants in Mexican border cities, such as Ciudad Juárez. Field research, interviews with planners, organizers, and residents of the shelters serve to document the planning of this temporary housing for immigrants. The poster also locates them spatially with the intention of sharing it online and of being a resource among the immigrants who arrive to the city (La Sección Amarilla, 2022). This is part of a work in progress to document these immigrant sites and

resources to make them available online for the immigrant community. It will further contribute to trace the influence of these sites and their populations on planning this border and industrial city.

Citations

- La Sección Amarilla de la Migración 2022.<https://migratory.network>
- Remain in Mexico: Overview and Resources. Human Rights Watch, 2022. <https://www.hrw.org/news/2022/02/07/remain-mexico-overview-and-resources#>
- EFE (17 de abril de 2021). Migrantes Trans comparten sueños y miedos en un refugio de Ciudad Juárez. <https://www.efe.com/efe/usa/inmigracion/migrantes-trans-comparten-suenos-y-miedos-en-un-refugio-de-ciudad-juarez/50000098-4514387>
- Candiz, G. y Bélanger, D. (2018). Del tránsito a la espera: El rol de las casas del migrante en México en las trayectorias de los migrantes centroamericanos. *Canadian Journal of Latin American and Caribbean Studies*, 43, 277–297. <https://doi.org/10.1080/08263663.2018.1467533>
- Musset, A. (2015). De los lugares de espera a los territorios de la espera. ¿Una nueva dimensión de la geografía social? *Documents D'anàlisi Geogràfica*, 61(2), 305–324. <https://doi.org/10.5565/rev/dag.31>

Key Words: Shelters for Immigrants, International migration, Ciudad Juárez, Remain in Mexico

Track 8 – Land Use Policy & Governance

Track 8 Pre-Organized Session Summaries and Abstracts for the Sessions

NEGOTIATING THE POLITICS OF LAND AND VALUE 1

Pre-Organized Session 16 - Summary

Session Includes 1161, 1162, 1163, 1164

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Amidst the globally widespread use of planning tools to facilitate land value extraction, there is growing contestation over valorizing land as an income-generating asset. In this organized session, we examine how the politics of land and value are negotiated through social practices by focusing on three major themes. First, we will discuss the plurality of land value and the conflicts between competing values. Session participants will examine how the conflicting types of land values come into focus as rapid urbanization and entrepreneurial governance have pushed large-scale land development to localities and regions that are usually environmentally precarious, socially marginal, and economically disadvantaged. Our second theme is valuation techniques and the ascribing of value to place. We will examine the ways in which valuation techniques and tools are employed in particular urban places as well as the resulting socioeconomic impacts on land and housing markets and people's everyday lives. Finally, we will examine the morality of land development and the place of the public in defining, negotiating, and anchoring captured value.

Objectives:

- To learn about the mechanisms, tools, practices, debates, and politics of land development and land value capture

NEGOTIATING INTENSIFICATION IN TORONTO: CONTESTED PRACTICES AND DISCRETIONARY APPROACHES

Abstract ID: 1161

Abstract within Pre-Organized Session 16

SORENSEN, Andre [University of Toronto] andre.sorensen@utoronto.ca, presenting author

Since 2000 Toronto has seen a surge of intensification and redevelopment within existing built up areas, prompted by 'smart growth' policies to reduce urban sprawl and shifting residential location preferences in favour of downtown locations. At the same time, the city enacted policies to increase land value capture (LVC) through development charges (DCs), density bonus agreements (s37), and park space requirements (s45), to finance and build infrastructure related to increased densities. Land value capture associated with intensification processes can be an important source of municipal finance, and varies greatly between jurisdictions, and research has shown that the details of practice matter greatly for outcomes (Shih and Shieh 2020, Weber 2021). In Ontario density bonus exactions have been contentious, are vigorously opposed by the development industry, and have recently been revised through major reforms to planning laws by the current Progressive Conservative government in 2020, 2021, and 2022 in response to development industry lobbying and an ongoing housing affordability crisis. In Toronto, density bonus and park space benefits are negotiated on a discretionary case by case basis, and are often appealed to planning administrative tribunals such as the Ontario Municipal Board (OMB). They have also been the focus of planning research. Moore (2013) argued that discretionary negotiated benefits tended to politicize development control in Toronto, while Biggar and Siemiatycki (2020) argue that discretionary negotiations over exactions tend to increase uncertainty, allow inconsistency in exactions, lengthen timelines for planning permissions, and create opportunities for corruption. It is unclear how much discretion exists in practice, however, in the value of exactions, as Toronto maintains relatively robust policy guidance regulating such negotiations. This paper examines the variability in time and space of LVC practice in Toronto, quantifying and mapping the amount of LVC for all developments with density bonus agreements. A key metric for evaluation will be the value of negotiated benefits standardized per square meter of built floorspace, mapped by address and date of planning permission. This will allow an analysis of the variation of exactions over time, by location, and comparing cases approved by city council with those that were appealed to the OMB. It is hypothesized that LVC rates have increased greatly over time, and vary with distance from the downtown, but vary little between nearby developments or through administrative appeal, and are dwarfed by payments for development charges.

Citations

- Biggar, J. and M. Siemiatycki (2020). "Tracing Discretion in Planning and Land-Use Outcomes: Perspectives from Toronto, Canada." *Journal of Planning Education and Research* 0(0): 0739456X20904427.
- Moore, A. A. (2013). *Trading Density for Benefits: Toronto and Vancouver Compared*, Institute for Municipal Finance and Governance.
- Shih, M. and L. Shieh (2020). "Negotiating Density and Financing Public Goods in Vancouver and New Taipei City: A Development Rights Perspective." *Planning Practice & Research* 35(4): 380-395.
- Bibliography Biggar, J. and M. Siemiatycki (2020). "Tracing Discretion in Planning and Land-Use Outcomes: Perspectives from Toronto, Canada." *Journal of Planning Education and Research* 0(0): 0739456X20904427. Moore, A. A. (2013). *Trading Density for Benefits: Toronto and Vancouver Compared*, Institute for Municipal Finance and Governance. Shih, M. and L. Shieh (2020). "Negotiating Density and Financing Public Goods in Vancouver and New Taipei City: A Development Rights Perspective." *Planning Practice & Research* 35(4): 380-395. Weber, R. (2021). "Embedding futurity in urban governance: redevelopment schemes and the time value of money." *Environment and Planning A* 53(3): 503-524.

Key Words: Land value capture, intensification, discretion, certainty, institutions

THE POST-NEOLIBERAL GOVERNANCE OF SANTIAGO'S VERTICAL DEVELOPMENT

Abstract ID: 1162

Abstract within Pre-Organized Session 16

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In rapidly verticalizing cities, urban land value depends on different variables. First, soil characteristics and the land site: its size, shape, and proportion. Second, location and the built environment around the land site: services, amenities, transport facilities (in Santiago, the Metro network decisively valorizes land; López-Morales et al., 2019), and green areas. These valorizing urban attributes are not inherent but inseparable from the land site. Third, urban regulations, which in Chile are defined by each borough's building codes, a set of norms that allow the air-volume that corporate developers later materialize, namely FAR-based potential ground rents (Hackworth, 2007), increased development rights (Shih et al., 2018) or air rights (Chen, 2019). Fourth, as under neoliberalism, corporate agents aim at maximizing profit, public and corporate agents struggle to set urban building codes. In Chile, every urban code is a monetary instrument, and every monetary instrument is political.

In Greater Santiago, a new wave of leftist, post-neoliberal mayors has seized different borough governments under the promise of redefining urban market rules and limiting the extreme exploitation of air rights in certain areas. They aim at a more livable, equally distributed, democratic (Vergara, 2021), and affordable city. This paper seeks to assess how this current post-neoliberal governance affects (or not) Santiago's corporate-led urban verticalization, its discourses and the tools it uses (e.g., land use, FARs, densities, etc.), and the social and environmental effects it creates (e.g., developers departing to other, unregulated areas, gentrification, etc.) We focus on the San Miguel borough, a former working-class industrial zone in south Santiago, as a study case. San Miguel has been under intensive privately-led high-rise redevelopment for three decades. The Metro network expansion and loose FARs have helped concentrate intensive housing vertical redevelopment along the Metro lines; still, San Miguel's long-term traditional residents have struggled to avoid verticalization exacerbating its adverse social and environmental effects – this borough's new government emerges from those struggles. We use a single-case study methodology with micro observations of San Miguel's local space and social narratives becoming instrumental in helping to reveal the social and urban implications of this new, post-neoliberal governance. We triangulate the data with official public and market information.

Citations

- Chen, HY (2020) Cashing in on the sky: Financialization and urban air rights in the Taipei Metropolitan Area. *Regional Studies*, 54(2): 198–208.
- Hackworth, J. (2007). *The neoliberal city: Governance, ideology, and development in American Urbanism*. Cornell University Press: Cornell, USA.
- López-Morales, E., Sanhueza, C., Espinoza, S., Órdenes, F. & Orozco, H. (2019) Rent gap formation due to public infrastructure and planning policies: an analysis of Greater Santiago, Chile, 2008- 2011. *Environment and Planning A*.
- Shih, M., Chang, H. & Popper, F. (2018): Development Rights: Regulating Vertical Urbanism in Taiwan. *Planning Theory & Practice*, DOI: 10.1080/14649357.2018.1535085
- Vergara-Perucich, JF. (2021). Urban design as a form of agonistic democratic expression. *Space and Culture*, 24(4), 456-472.

Key Words: Post-neoliberal governance, San Miguel, Planning codes, Air rights, Land value

REMAKING COMMUNITY: CREATING AND RECREATING NEWARK'S CENTRAL WARD

Abstract ID: 1163

Abstract within Pre-Organized Session 16

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Newark's Central Ward has been re-created multiple times in the past 100 years. Using archival materials and existing literature, this paper explores three especially significant transformations and the processes that shaped them: 1) the creation of a racially segregated community, 2) the demolition of that neighborhood and the production of dense highrise public housing, and 3) the demolition of most of the highrise public housing and the production of low-density housing. The paper explores the assemblage of multiscalar processes and human and nonhuman actors that came together to reshape this community. Of special interest is the interplay between policy, market, politics, race, income, and land/property and especially the justifications for and enabling of demolition and reconstruction. Highrise public housing production and demolition are often told through narrow narratives focused on policy objectives. Though those are critical, this paper grounds the way those policy objectives played out in the context of the everyday life of the city.

Citations

- DeFilippis, James. 1999. "Alternatives to the "New Urban Politics": finding locality and autonomy in local economic development." *Political Geography* 18 8:973-990.
- McFarlane, Colin and Anderson, Ben. 2011. "Thinking with assemblage." *Area* 43 2: 162-165.
- Woods, Clyde. 2017. *Development Arrested*. New York: Verso.
- Wyly, Elvin and Hammel, Dan. 1999. "Islands of decay in seas of renewal: Housing policy and the resurgence of gentrification." *Housing Policy Debate* 10 4: 711-771.

Key Words: Political Economy, Urban Redevelopment, Segregation

LIQUID ASSETS: RIVERFRONT DEVELOPMENT AND THE CASE OF LINCOLN YARDS

Abstract ID: 1164

Abstract within Pre-Organized Session 16

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The Lincoln Yards project is possibly the largest redevelopment projects in Chicago's history. Developer Sterling Bay purchased 55 acres of land within the North Branch Industrial Corridor flanking the Chicago River that previously had been protected by a zoning designation restricting non-industrial uses. Sterling Bay has planned an ambitious mixed residential, retail, and entertainment development that includes thousands of on-site jobs and housing units.

As is the case with water features across the world, the Chicago River was one of the main attractions for Sterling Bay. Industrial land in the area had not fully capitalized the river's amenity value. The area had been zoned for manufacturing, a kind that turned its back on the River (the tanneries and small fabricators previously inhabiting the area did use the river, but as a dumping ground). Knowing that land values would increase if they lifted industrial zoning, the City designated a Tax Increment Financing (TIF) district there and agreed to allocate \$1.2 billion to Sterling Bay – the largest TIF subsidy in the City's history.

Land values already were rising rapidly in anticipation of the project and fearing this appreciation would undermine its status as "blighted," Mayor Rahm Emanuel pushed the TIF designation decision through City Council in early 2019. In effect, the city was racing to get out ahead of the speculation that Sterling Bay's purchase and its own policies induced - in order to pay for the subsidy it had already committed. TIF can turn municipalities into a co-speculator with the developer, relying on value uplift to pay back costs for infrastructure and subsidies (Weber 2021).

At the same time, there is a strong need for major ecological investments along the Chicago River, a fragile ecosystem that absorbs run-off and risks flooding due to extreme weather events. The current plan for Lincoln Yards lacks an integrative approach for the corridor and instead develops impervious surfaces for the new thousands of workers, residents, and visitors that may worsen the effects of climate change. Advocates have been pushing the city and developer to consider new models of riparian development that include natural edges, wetlands, and passive landscaping. Climate adaptations could include special ordinances, overlay zoning, and a complex matrix of setback tools to shape the planning process of large-scale sites.

Our case study analyzes how the city balances its role as co-speculator with demands to attend to the river's ecological

role. We document the planning and construction process for Lincoln Yards from 2017 through 2023, when the city made decisions about boundaries, environmental requirements, and financing. We create financial and ecological histories of the project, piecing together interview data (with municipal planners, elected officials, the development team, and advocacy and advisory organizations), newspaper articles, and property value information to gain a fuller understanding how its environmental features evolved. We develop a detailed timeline of key events that maps onto charts identifying changes in property values over time.

We hypothesize that the financial relationships embodied by TIF create a disincentive to use public revenues to pay for ecological restoration, which likely will not cause property values to increase as much or as visibly as other infrastructures and amenities. Our work has implication for other cities as property speculation around rivers has increased, as has conflict between those seeking to capture the incremental increases in land values from that speculation.

Citations

- Joshua Cousins and Dustin T. Hill. "Green infrastructure, stormwater, and the financialization of municipal environmental governance." *Journal of Environmental Policy & Planning* 23.5 (2021)
- Morgan M. Robertson, "The neoliberalization of ecosystem services: wetland mitigation banking and problems in environmental governance." *Geoforum*. Volume 35, Issue 3. (2004):361-373
- Rachel Weber. "Embedding futurity in urban governance: Redevelopment schemes and the time value of money." *Environment and Planning A: Economy and Space* 53.3 (2021): 503-524.

Key Words: land value capture, tax increment financing, river ecologies, riparian development, urban redevelopment

VERTICAL URBANISATION AND THE IMPLICATIONS OF PLANNING FOR AND WITH HIGH-RISE NEIGHBOURHOODS (WITH PERSPECTIVES FROM ACSP AND AESOP SCHOLARS)

Pre-Organized Session 24 - Summary

Session Includes 1132, 1133, 1134, 1202, 1203

WHITE, James [University of Glasgow] jamest.white@glasgow.ac.uk, organizer

‘Vertical urbanisation’ is a global phenomenon that has manifested itself in the development of high-rise neighbourhoods in cities around the world. The planning, design and development of these vertical neighbourhoods is the result of numerous forces, including demographic change, migration, global flows of finance, sustainable policies that favour density and urban intensification, and changing real estate markets. Urban planners play a key role not only in facilitating the design and development of these vertical neighbourhoods but also in addressing and managing the variegated impacts of these developments on the built environment and the residents that live in and around them. This session seeks to advance a more local understanding of ‘vertical urbanisation’ through a series of papers focused on Toronto, Canada, to explore the high-rise social relations that stem from the spatial, aesthetic, and socio-economic planning outcomes present in high-rise neighbourhoods.

Objectives:

- Understanding how high-rise building and neighbourhoods are planned
- Understanding the design implications of high-rise buildings and neighbourhoods
- Understanding the social and physical impacts of high-rise buildings and neighbourhoods

CONDO LAND: THE PLANNING, URBAN DESIGN AND ARCHITECTURE OF VERTICAL URBANISATION ON TORONTO’S RAILWAY LANDS

Abstract ID: 1132

Abstract within Pre-Organized Session 24

WHITE, James [The University of Glasgow] jamest.white@glasgow.ac.uk, presenting author

Over the past twenty years many global cities have experienced ‘vertical urbanisation’ (Nethercote, 2018) fuelled by inward urban migration, global flows of real estate capital (Rogers et al., 2015), and planning policies that favour intensification (Searle and Filion, 2011). The form of vertical urbanisation differs from place to place, but one clear trend is the development of tall condominium communities that offer luxurious amenities alongside new community facilities.

Toronto, Canada, has been a hotbed of vertical urbanisation since the early 2000s. The city’s downtown and inner-

city neighbourhoods have rapidly densified as a result of favourable planning policies and a buoyant real estate market. Rosen and Walks (2015) have coined the term 'condo-ism' to describe this phenomenon, casting Toronto's experience as a form of urban neoliberalism that has distorted the social fabric of the city and profoundly re-shaped its physical form.

What is missing from the literature on Toronto's condo-ism is an understanding of how the new places and spaces of condo-ism have been created and what role the City of Toronto has played in regulating the form and function of vertical urbanisation. To address this, this research focuses on CityPlace, a mega-project of some 30 residential high-rises and associated community facilities built between 1997 and 2022 on a former rail marshalling yard called the Railway Lands. The research casts CityPlace as a microcosm of Toronto's condo-ism and one that is emblematic of the new vertical building typologies that are reshaping Toronto and other global cities.

Through a longitudinal case study conducted over eight years and encompassing key informant interviews, archival research and field observations, the research unpacks the design and masterplanning of condo-ism. It illustrates the ways in which the tools of 'design governance' (Carmona, 2017) have regulated the delivery of CityPlace and describes how the principal developer produced an altogether new scale of high-rise condominium development in Toronto.

While design excellence has not been achieved, the planners who sought to facilitate the creation of a mixed-use neighbourhood can argue that a new, largely residential, urban district has emerged. Yet, this achievement is overshadowed by the developer's ruthless exploitation of the gaps in Toronto's planning processes to maximise their profits – and the planners' submission to their demands. All told, the developer managed to secure density increases that more than doubled the number of private condominiums built on the Railway Lands, yet over the same period, the number of affordable houses was halved and many of the promised community facilities took years to materialise.

Stepping back from the case, the research argues that the pressure to satisfy the demands of a rapacious residential real estate industry operating in a booming property market should not come at the expense of creating places where communities can thrive. The case demonstrates how these pressures can precipitate the creation of a vertical neighbourhood that is less diverse in terms of tenure, unit size, and mixed use than it might otherwise have been. Drawing comparisons with other large developments in Toronto and further afield, the paper argues that the story of CityPlace is emblematic of an alarmingly flexible approach to planning and design that is acquiescent to the demands of a rapacious development industry – what the paper terms "planning by concession" – and which raises critical questions about the long-term resilience of Canadian city-making in the 21st century.

Citations

- Nethercote, M. (2018). Theorising vertical urbanisation. *City*, 22 (5-6), pp. 657-684.
- Rogers, D., Lee, C.L. and Yan, D. (2015). The Politics of Foreign Investment in Australian Housing: Chinese Investors, Translocal Sales Agents and Local Resistance. *Housing Studies*, 30 (5), pp. 730-748.
- Searle, G. and Filion, P. (2011). Planning Context and Urban Intensification Outcomes in Sydney versus Toronto. *Urban Studies*, 48 (7), pp. 1419-1438.
- Rosen, G. and Walks A. (2015). Castles in Toronto's Sky: Condo-ism as Urban Transformation. *Journal of Urban Affairs*, 37 (3), pp. 289-310.
- Carmona, M. (2017). The formal and informal tools of design governance. *Journal of Urban Design*, 22 (1), pp. 1-36.

Key Words: Condominiums, Masterplanning, High-rise Buildings, Toronto, Canada

CONDOMINIUM NEIGHBOURHOOD CHANGE: TRACING THE IMPACT OF TORONTO'S HIGH-RISE BOOM

Abstract ID: 1133

Abstract within Pre-Organized Session 24

WEBB, Brian [Cardiff University] webbb1@cardiff.ac.uk, presenting author

To meet demand for housing, high-rise neighbourhood development has been utilised as a means of providing housing ownership options while also stimulating investment in urban areas. In their early incarnations the development of high-end apartment neighbourhoods typically act as a driver of urban gentrification and neighbourhood renewal due to the increase in middle-class residents. More recent high-end residential urban development has been marketed towards younger and more mobile populations as well as for investment rental purposes. There are also concerns that the new high-rise developments in urban cores are not being built so as to accommodate a range of demographics and also causes displacement of existing socio-demographic groups.

This paper seeks to understand socio-demographic neighbourhood level change resulting from high-rise condominium development in Toronto, Canada over the past 20 years. City data on registered condominium

developments is first used to classify condominium neighbourhoods as well as distinguish them from less developed neighbourhoods in the city. Key socio-demographic census variables are then used to develop an understanding of how different condominium neighbourhoods have changed in relation to other parts of the city. A typology of condominium neighbourhood change is developed to understand how high-rise development has altered the socio-economic characteristics of neighbourhoods in Toronto and what ramifications this has more widely for other cities pursuing similar high-rise condominium intensification strategies. Finally, wider reflections on the long-term impacts of high-rise condominium neighbourhoods as a form of vertical urbanisation are discussed.

Citations

- Webb, B. and Webber, S. (2017). The Implications of Condominium Neighbourhoods for Long-Term Urban Revitalisation. *Cities*, 61, pp. 48–57.
- Graham, S. (2015). Luxified skies: How vertical urban housing became an elite preserve. *City*, 19, pp. 618–645.
- Rosen, G., and Walks, A. (2015). Castles in Toronto's Sky: Condo-Ism as Urban Transformation. *Journal of Urban Affairs*, 37, pp. 289–310.
- Nethercote, M. (2019). Melbourne's vertical expansion and the political economies of high-rise residential development. *Urban Studies*, 56, pp. 3394–3414.
- Lehrer, U., Wieditz, T. (2009). Condominium Development and Gentrification: The Relationship Between Policies, Building Activities and Socio-economic Development in Toronto. *Canadian Journal of Urban Research*, 18, pp. 82–103.

Key Words: high-rise, condominium, neighbourhood

FROM THE GENTRIFICATION OF THE CITY TO THE CONDOIZATION OF GENTRIFICATION? ASSESSING VERTICAL URBANIZATION IN CANADIAN METROPOLI

Abstract ID: 1134

Abstract within Pre-Organized Session 24

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In expensive global cities like Toronto, processes of displacement and gentrification are increasingly associated with a major turn towards high-rise condominium development as the primary mode of new home building (Walks, Hawes and Simone, 2021). In many Canadian cities, a greater percentage of not only owner-occupied but also rental housing stock in the city's core is made up of these new-build, high-rise, "luxury" condo units (Rosen and Walks, 2015). In turn, these units tend to be much more expensive than existing rental stock and can only be afforded by certain demographics of people. As gentrification is traditionally understood to be a process associated with conversion of rental housing to owner-occupied housing that results in the direct displacement of existing, working-class residents (Glass, 1964), some contend that new-build gentrification cannot be considered as such because it does not result in direct displacement (Boddy 2007, Buzar, Hall and Ogden 2007). However, as Marcuse (1985) notes, indirect, exclusionary displacement can be seen even in neighborhoods that maintain or are even expanding their rental stock, insofar as rents are increasing such that when one household moves out, that another similar house would not be able to afford the same unit. Furthermore, many scholars of gentrification define it as the production of space for ever-more privileged residents. Acknowledging these expanded understandings of gentrification, and drawing on preliminary analysis of custom census data, this paper adds to more recent research in gentrification studies looking at how high density, market condominium development may be driving and continuing processes of gentrification in Toronto, Montreal and Vancouver (Walks and Maaranen, 2008) not only through displacement of renters by owners, but also by the turnover of renters within existing units, as well as the demand for vacant units that can be let on short-term rental markets. In this paper we test for three changes within the inner cities of Toronto, Montreal and Vancouver: a) disproportionate changes in income and social status, tenure, real (relative) rents and land values/house prices in neighbourhoods within the vicinity of new condominium development (ie "spillover effects"); b) changes in the incomes, social status, and real rents within existing condominium buildings (ie rental upward filtering), and c) changes in the price of inner-city condominium units relative to the metropolitan average change, as well as relative to the average change in the non-condominium sector (the relative re-positioning the value of the condo within inner-city space). Drawing on this three-part analysis, we demonstrate how the condominium – a key articulation of the verticalization of the inner city – has affected gentrification patterns in large Canadian cities, as well as the extent to which the condo sector itself has gentrified relative to other part of the larger housing system in each study city.

Citations

- Walks, Alan, Hawes, Emily, and Simone, Dylan (2021) Gentrification in large Canadian cities: tenure, age, and exclusionary displacement 1991-2011. *Urban Geography*. 42(5): 603-633
- Rosen, G. and Walks, Alan (2013) Rising Cities: Condominium Development and the Private Transformation of the Metropolis. *Geoforum*. 49:160-172
- Grisdale, S. (2021). Displacement by disruption: Short-term rentals and the political economy of “belonging anywhere” in Toronto. *Urban Geography*. 42(5), 654-680

Key Words: condoization, condoism, neoliberalism, gentrification, intensification

HIGH-RISE LIVING, PUBLIC SPACE AND SOCIAL SUSTAINABILITY

Abstract ID: 1202

Abstract within Pre-Organized Session 24

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Central theme and research question: High-rise buildings have long been a significant form in urban development. But this vertical form of living comes with its own challenges and the COVID-19 pandemic of the last two years has magnified some of the problems for life in close proximity. The high-rise is not just as a built form; it is also a place where unique configurations of shared spaces and spatial practices exist. While a large body of work has emerged that seeks to understand the implications of verticality for urban living, very little has been said about the role of shared amenity spaces. In this paper, we will focus on the role of common spaces in high-rise buildings. How might these common areas destabilize or transgress the vertical form? Conceptually, following Henri Lefebvre's fertile theorization of the social production of space, we will argue that shared spaces, as a multidimensional phenomenon, have the potential to become public space.

Approach and methodology: The role of public space in high-rise apartments will be deliberated by using examples from two different time periods: from the 1950 to the 1980s and from the 2000 to today, research that builds on earlier and more recent work. We observe revisitations of past imaginaries and built forms in high-rise development, whose emergent hybrid and contradictory forms of public space now pose new possibilities for everyday life and spatial practice in these buildings. Within verticality's built and social environments, there is great potential for the fostering of transformative capacity around what John Friedmann describes as the “Good society”. If social sustainability in urban design is understood as infrastructure supporting social and cultural life, then these common spaces are sites of precisely that: creating opportunities for social sustainability. The paper will draw from both theoretical work in the context of public space and high-rise living, as well as original field research which will be conducted over the summer months. We will conduct interview with inhabitants of selected high-rise neighborhoods in Toronto and how they make use of amenities. We will address experiences before, during and after the of the pandemic with these and other shared spaces (such as lobbies and elevators).

Meaningful findings: Since the analysis of shared spaces in condominiums is something that is seldomly done, we hope to contribute to a better understanding of these spaces in the social wellbeing of its inhabitants.

Relevance and implications of your work to planning scholarship, practice, and/or education: This research can guide planning for future high-rise neighborhoods, focusing not only on its economic viability but also its social sustainability.

Citations

- Baxter, R (2017) The High-Rise Home: Verticality as Practice in London. *International journal of urban and regional research*, 41(2), 334-352.
- Lehrer, U (2016) “Room for the Good Society? Public space, amenities and the condominium” In: Haripriya Rangan, Mee Kam NG, Libby Porter and Jacquelyn Chase (eds), *Insurgencies and Revolutions: Reflections on John Friedmann's contributions to planning theory and practice*. Boston: Routledge RTPI Library Series, pp. 141-150.
- March, L and Lehrer, U (2019) Verticality, Public Space and the Role of Resident Participation in Revitalizing Suburban High-rise Buildings. *Canadian journal of urban research*, 28(1), 65-85.

Key Words: condominium, amenities, shared spaces, public space, social sustainability

LIVING WITH INEQUALITIES: EXPLORING THE SOCIAL AMONG RACIALIZED NEW IMMIGRANTS RESIDING IN A 'MIXED' SUBURBAN NEIGHBOURHOOD OF TORONTO

Abstract ID: 1203

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Within the past two decades, neighbourhood has remerged as an appropriate analytical scale for socio-spatial analysis. In this context, Canadian urban geographers have been particularly captivated by suburbanisms. While debates have centred around the universality of the processes and outcomes of suburbanisms, concerns have been raised regarding the fast pace in which Canadian cities are becoming more socially and spatially polarized. Although smaller in scale, qualitative research studies have advanced this discussion by not only questioning previously taken-for-granted conceptions and borders of neighbourhoods, but also demonstrating that, like homeowners, renters in high-rise apartments engage in neighbouring practices to form “vertical neighbourhoods”. These studies have also shown that the borders of such neighbourhoods as identified by participants do not match with those defined by the city.

Using intersectionality as an interpretive framework, this paper documents and analyzes the experiences of racialized minorities within a structurally and socially mixed neighbourhood - Rexdale. The study analyses information collected from census data (2001 to 2016), field observations, 10 key informant interviews, 8 focus group discussions, and 40 follow-up in-depth interviews with current residents. The focus group and interview participants were selected with maximal variation sampling in mind, and therefore included both long and short-term residents, renters and homeowners, and immigrants from a variety of countries (e.g., the Caribbean, India, Pakistan, Colombia, and Iraq). The study found that the changing infrastructural and socio-demographic context of Rexdale not only differentially affected the everyday lives of residents, but also their individual and social resilience to overcome increasing inequalities.

Citations

- Grant, Jill, Alan Walks, and Howard Ramos, eds. *Changing neighbourhoods: Social and spatial polarization in Canadian cities*. UBC Press, 2020.
- Keil, Roger. "Extended urbanization, “disjunct fragments” and global suburbanisms." *Environment and Planning D: Society and Space* 36.3 (2018): 494-511.
- Hulchanski, David J., et al. *The three cities within Toronto: Income polarization among Toronto's neighbourhoods, 1970-2005*. Cities Centre Press, University of Toronto, 2011.
- Ghosh, Sutama. "Everyday lives in vertical neighbourhoods: Exploring Bangladeshi residential spaces in Toronto's inner suburbs." *International Journal of Urban and Regional Research* 38.6 (2014): 2008-2024.

Key Words: mixed neighbourhoods, Racialized Minorities, Toronto, Neighbouring Practices

NEGOTIATING THE POLITICS OF LAND AND VALUE 2

Pre-Organized Session 26 - Summary

Session Includes 1166, 1167, 1168, 1263

SHIH, Mi [Rutgers, The State University of New Jersey, mi.shih@ejb.rutgers.edu, organizer

Amidst the globally widespread use of planning tools to facilitate land value extraction, there is growing contestation over valorizing land as an income-generating asset. In this organized session, we examine how the politics of land and value are negotiated through social practices by focusing on three major themes. First, we will discuss the plurality of land value and the conflicts between competing values. Session participants will examine how the conflicting types of land values come into focus as rapid urbanization and entrepreneurial governance have pushed large-scale land development to localities and regions that are usually environmentally precarious, socially marginal, and economically disadvantaged. Our second theme is valuation techniques and the ascribing of value to place. We will examine the ways in which valuation techniques and tools are employed in particular urban places as well as the resulting socioeconomic impacts on land and housing markets and people's everyday lives. Finally, we will examine the morality of land development and the place of the public in defining, negotiating, and anchoring captured value.

Objectives:

- To learn about the mechanisms, tools, practices, debates, and politics of land development and land value capture

FULFILLMENT PROPHECY: THE POLITICS OF AMAZON'S EXPANSION IN GREATER CHICAGOLAND

Abstract ID: 1166

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This paper considers the politics and processes surrounding Amazon's development of multiple large-scale fulfillment centers in Chicago's south suburbs. The geography of goods movement has changed appreciably over the past decade, and decentralization and consolidation in supply chain management and warehousing (Giuliano et al., 2013) has placed strategically-situated communities like Chicago's south suburbs at the center of debates over the benefits of such facilities, the environmental and other costs they impose, and how planning decisions should be made. This paper examines these debates through a case study drawn from document and public record analysis of local planning processes. It examines three facets of Amazon's expansion. First are the tools municipalities have used to usher in the development of these fulfillment centers. Tax breaks and other economic development tools remain controversial (Bartik, 2020), and this case documents how these tools have been deployed in the local context. Second, it illuminates the political processes and power structures governing the placement of these facilities—processes that unfold amid structural conditions impacting investment and disinvestment, land valuation, and equity concerns. Chicago's south suburbs, still reeling from the foreclosure crisis with declining tax revenues that drive property tax rates to double that of Chicago's northern and western suburbs, are eager to attract jobs and tax ratables. However, warehousing distribution facilities produce significant negative environmental externalities (Dablanc et al., 2013), and minoritized communities, which characterizes much of Chicago's south suburbs, are already home to a disproportionate share of warehousing facilities (Yuan, 2021). Third, this paper explores the role of the public in the development process, narratives various actors use to characterize these developments, and what they mean for the futures of these communities. Nondisclosure agreements, secrecy, and intermediaries steering mobile capital (Wood & Phelps, 2020) undermine the role of the public in the decision-making process. This paper furthers our understanding of how these political processes and mechanisms unfold in the warehouse development context, and the tensions and tradeoffs they produce. Specifically, it illuminates questions of who benefits from such development, who bears the cost, and who gets to make these planning decisions.

Citations

- Bartik, T.J. (2020). Introduction to Special Issue: Learning More About Incentives. *Economic Development Quarterly*, 34(2), 95-100.
- Dablanc, L., Giuliano, G., Holliday, K., & O'Brien, T. (2013). Best Practices in Urban Freight Management: Lessons from an International Survey. *Transportation Research Record*, 2379(1), 29–38.
- Giuliano, G., O'Brien, T., Dablanc, L. & Holliday, K. (2013). Synthesis of Freight Research in Urban Transportation Planning. (NCFRP Report 23). Washington, DC: Transportation Research Board.
- Wood, A.M. & Phelps, N.A. (2020). Mediating Local Economic Development: The Place of Site Selection Consultants in Industrial Recruitment. *Economic Development Quarterly*. 34(1), 78-84.
- Yuan, Q. (2021). Location of Warehouses and Environmental Justice. *Journal of Planning Education & Research*. 41(3). 282-293.

Key Words: economic development, goods movement, value capture, public participation, environmental justice

CIVIC MOBILIZATION AND PUBLIC LAND IN WEST PHILADELPHIA'S MANTUA NEIGHBORHOOD 2013-2022

Abstract ID: 1167

Abstract within Pre-Organized Session 26

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This paper considers the land-related actions of civil society organizations in the West Philadelphia neighborhood of Mantua in the 2010s, a time during which Drexel University's assembly of land and capital for innovation-themed real estate projects was exerting extreme upward pressure on property prices in that neighborhood and other nearby low-income areas. It explores the terms on which resident-controlled groups mobilized to gain title to city-owned land so as to initiate new development they saw as compatible with the character of their neighborhood: namely, renter- and owner-occupied units affordable to people with stable but relatively low incomes. As market-driven appreciation of real estate close to Drexel's uCity Square and Schuylkill Yards developments proceeded, leaders in Mantua identified publicly owned vacant land as a potential resource and moved to enable mission-driven organizations to acquire it. At the same time, they engaged in what many members of the larger policy community regarded as a misguided effort to change neighborhood zoning to disallow as-of-right development of multi-unit buildings.

Mantua organizations' modestly successful efforts during this period illustrate the profound obstacles that face community actors attempting to valorize land as a source of social, cultural, and ecological value separate from its worth as a fungible financial asset. As they negotiated the byzantine politics of economic development policy, land use

regulation, and public land disposition in the City of Philadelphia, the groups found themselves in a variety of governmental arenas where land-related social practices were distorted both by perceived fiscal imperatives and by constructions of value wedded to the interests of distant financial investors. The paper speculates on the potential for grassroots organizations and progressive legislators to create institutions and norms that disrupt these dynamics going forward.

Citations

- August, M (2014) Challenging the Rhetoric of Stigmatization: The Benefits of Concentrated Poverty in Toronto's Regent Park. *Environment and Planning A: Economy and Space* 46(6): 1317–33.
- Becher, DL (2014) *Private Property and Public Power: Eminent Domain in Philadelphia* (Oxford: Oxford University Press).
- Foster, S (2006) The City as an Ecological Space: Social Capital and Urban Land Use. *Notre Dame Law Review* 82(2): 527–83.
- Weber, R (2021) Embedding futurity in urban governance: redevelopment schemes and the time value of money. *Environment and Planning A: Economy and Space* 53(3): 503-524.

Key Words: public land, civic mobilization, land value politics

CONSTRUCTING VALUE THROUGH ACTION: NEGOTIATING THE POLITICS OF INFORMAL HOUSING AND PUBLIC LAND

Abstract ID: 1168

Abstract within Pre-Organized Session 26

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The neglect, exclusion, and demolition faced by residents in informal settlements, a form and way of life particularly salient in cities in the Global South, suggest that the value of autoconstructed housing, while existential to the urban poor and widely accepted by urban scholars, has yet to be politically recognized by the formal governance and property regime (Caldeira, 2017; Simone, 2019; Turner, 1972). In this article, our empirical entry point is a case study based on ethnographic fieldwork of an informal settlement called Treasure Hill in Taipei, Taiwan. We interrogate the years-long and highly contested process of participatory, action-based planning through which community planners and residents negotiated the politics of occupation of public land in order to give value to self-built housing, community networks, and the material landscape of urban autoconstruction.

The history of Treasure Hill exemplifies how zoning practice often sidesteps and obscures difficult political-economic questions of systemic disinvestment in housing that are the structural roots of autoconstruction and informality. Straddling the Japanese ruling (1895-1945) and the KMT regime after WWII, a no-build zone was legally in place to protect the water of the Xindian River that skirted along Treasure Hill. It was also during this period marked by supposedly military-style land-use control, however, that Treasure Hill grew into a bustling settlement built by low-ranking veterans, rural migrants, and the urban poor—the segments of the urban population most often cast outside of state-sponsored housing schemes in postwar Taiwan. In 1980, the Taipei City Government rezoned the land on which more than 300 households had already lived for decades as an urban park, officially declaring residents' self-help homes illegal constructions and foreshadowing threats of demolition. This snapshot of Treasure Hill's decades-long encounter with demolition-inflected exclusionary zoning echoes AbdouMaliq Simone's statement that informality embodies "the sanctioned dis-attention to particular realities" (ibid, p. 617).

Drawing insights from scholarship on the social construction of value and ethnographic work on value making, conflicting values, and value transformation (McAuliffe and Rogers, 2019; Starecheski, 2016), we show that to give value to Treasure Hill, planners and residents have undertaken three main actions: 1) making informal housing politically visible; 2) leveraging beyond-local, non-zoning legal frameworks to legitimize autoconstructed spaces; and 3) using local knowledge to negotiate regulatory standards. In the article, we detail how in each action planners and residents insert agency into gaps in bureaucratic inertia, regulatory rigidity, technical depoliticization, dominant discourses, and habitual practices. We will also show that these actions create conditions for a political space where the legitimate uses and users of public land are no longer predetermined by land-use zoning and building codes but are negotiated through a social process of participation and engagement. The value that is given to Treasure Hill through actions of participatory planning and social negotiation is, then, not assigned in a narrowly economic sense but instead is constructed to include moral, social, and political values. Our work echoes what Simone argues: that to think about informality is to "constantly re-open the question of value—what is to be valued, by whom, and how?" (ibid, p. 618).

Citations

- Caldeira, T. PR. 2017. Peripheral urbanization: Autoconstruction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society and Space*, 35(1), pp. 3-20.
- McAuliffe, C. and D. Rogers. 2019. The politics of value in urban development: Valuing conflict in agonistic pluralism. *Planning Theory*, 18(3), pp. 300-318.
- Simone, A. 2019. Contests over value: From the informal to the popular. *Urban Studies*, 56(3), pp. 616–619.
- Starecheski, A. 2016. *Ours to Lose: When Squatters Became Homeowners in New York City*. The University of Chicago Press.
- Turner, J. FC and R. Fichter. 1972. *Freedom to Build: Dweller Control of the Housing Process*. New York: Collier Macmillan.

Key Words: Informal Settlement, Autoconstruction, Value, Public Land, Action-Based Planning

THE VIRTUOUS CIRCUIT: HONG KONG'S TAUTOLOGIES OF VALUE

Abstract ID: 1263

Abstract within Pre-Organized Session 26

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This paper investigates the relationship between popular understandings and ideologies of value and the politics of urban redevelopment in Hong Kong, drawing on iterative case study research focusing on neighborhood change conducted over two years in three distinct areas of the city. Across a host of political-economic transformations of the former British colony and Chinese Special Administrative Region, many scholars have argued that particular ways of conceiving of and perceiving the relationship between land, property, and value in Hong Kong have inhered among residents, which remain remarkably robust. In this paper, I argue that these discursive frames can and do shape the processes and outcomes of urban redevelopment in a variety of ways, from everyday parlance and the behaviors of individual residents to dynamic machinations of public policy. I theorize this relationship as a kind of feedback loop, which I refer to as the “virtuous circuit”, whereby policymakers and urban residents alike make and justify decisions based on shared understandings of value. Through several empirical examples, I outline some of the salient operational junctures in this circuit as well as its implications for the geographies of contemporary Hong Kong.

Citations

- La Grange A * Pretorius F (2016) State-led gentrification in Hong Kong. *Urban Studies* 53(3): 506-523.
- Ley D * Teo SY (2014) Gentrification in Hong Kong? Epistemology vs. ontology. *International Journal of Urban and Regional Research* 38(4): 1286-1303.
- Yip M (2022) Policing territory: the yet-to-be unsettled space of the property-sovereignty nexus. In W. Liu et al. (eds) *Reorienting Hong Kong's Resistance*, pp. 103-117.
- Tang WS (2017) Beyond gentrification: Hegemonic redevelopment in Hong Kong. *International Journal of Urban and Regional Research* 41(3): 487-499.
- Haila A (2017) Institutionalization of 'the property mind'. *International Journal of Urban and Regional Research* 41(3): 500-507.

Key Words: gentrification, value, redevelopment, policy, theory

GOVERNING URBAN DEVELOPMENT: BETWEEN REGULATION AND COLLABORATION (ACSP-AESOP)

Pre-Organized Session 42 - Summary

Session Includes 1222, 1223, 1225, 1226, 1432

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Global real estate pressures and urbanization trends are pushing cities to expand and diversify their interactions with the property development industry. Cities complement their traditional planning roles with mechanisms ranging from multi-sectoral collaborations to entrepreneurial ventures that position cities as explicit market actors. Drawing on cases from diverse local contexts, this session will explore the implications of planning-development entanglements: Is an entrepreneurial mindset required to navigate the current commodified urban landscape, and does this shift come at the expense of other policy objectives? How do local actors employ development-oriented tools (i.e., negotiations) to fulfill objectives such as sustainability, intensification, social equity, and racial justice? To what

extent do development actors (planners and local groups) understand the variance within the private development sector in terms of local networks and specialization, and how do these actors leverage it to get the outcomes they want?

Objectives:

- Present empirical evidence on the current state of planning-development entanglements in varying local contexts.
- Understand how different local actors influence decision making processes in development and secure benefits from development projects
- Foster an interdisciplinary network of development-focused scholars.

COLLABORATIVE DEVELOPMENT OF SOCIAL INFRASTRUCTURE: LEARNING FROM TORONTO'S CREATIVE MIXED-USE MODEL

Abstract ID: 1222

Abstract within Pre-Organized Session 42

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Finding space for social infrastructure is becoming increasingly difficult in cities experiencing densification and market pressures. Integrating social infrastructure into mixed-use real estate developments is a solution to these challenges that is also beneficial from an urban design standpoint (Mualam et al., 2019). Yet this approach faces notable obstacles: multi-sectoral collaborations are inherently complex and deter risk-averse partners (Huxham & Vangen, 2005); spatial exactions and other negotiation mechanisms are prone to manipulation by developers and politicians alike (Biggar, 2021); and the social benefit of mixing has been called into question in the face of exclusionary practices such as “poor doors”.

This study explores a potential solution to these issues found in an emergent form of development dubbed “Creative Mixed-Use”. The term refers to projects developed through ad-hoc partnerships between public, private, and nonprofit organizations, offering site-specific mixes of for-profit and social uses (Shipman & Siemiatycki, 2022). In the rapidly-densifying city of Toronto, such developments have introduced affordable housing, homeless shelters, and various community, health and education facilities. To conceptualize this model and assess its transferability to other setting, we ask: What processes and conditions that contribute to successful mixed-use social infrastructure development? How can mixed-use design achieve synergy at the building and urban scale? And what are the limitations of this model as a vehicle for social equity?

Our research builds on a census of 55 projects that were examined through interviews with stakeholders involved in development, and through a dataset of planning reports, media articles, professional case studies, and publicity materials. We draw on two main approaches to thematically analyze the data: the Theory of Collaborative Advantage (Huxham & Vangen, 2005), which identifies pathways to overcome tensions in collaborative efforts; and the literature on real estate governance, which explores the co-evolution of agendas and practices among planners and real estate market actors (Geva & Rosen, 2022).

Findings show that parties in all sectors seek collaboration when impasses (such as planning restrictions or community objections) prohibit them from achieving their goals alone. “Champion” individuals and high-capacity organizations supported the process by lending their reputation to risky projects and facilitating replication in other locations. A range of mixing patterns, from complete separation to full integration of uses, is utilized to accommodate the unique needs of each form of social infrastructure. The model is limited by the capability of social actors to engage in market actions, maximize the return on their investments and assets, and secure sustainable ownership and management agreements.

Citations

- Biggar, J. (2021). Approaching Negotiations in Urban Redevelopment Projects: A Multiple Case Analysis of Stakeholder Involvement in Community Benefit Agreements. *Planning Theory & Practice*, 22(5), 725–746. <https://doi.org/10.1080/14649357.2021.1972129>
- Geva, Y., & Rosen, G. (2022). In search of social equity in entrepreneurialism: The case of Israel's municipal regeneration agencies. *European Urban and Regional Studies*, 096977642210763. <https://doi.org/10.1177/09697764221076343>
- Huxham, C., & Vangen, S. (2005). *Managing to collaborate: the theory and practice of collaborative advantage*. London: Routledge.

- Mualam, N., Salinger, E., & Max, D. (2019). Increasing the urban mix through vertical allocations: Public floorspace in mixed use development. *Cities*, 87, 131–141. <https://doi.org/10.1016/j.cities.2018.12.027>
- Shipman, C., & Siemiatycki, M. (2022). Building in common: (re)integrating social services and community space in church redevelopment projects. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 00(00), 1–20. <https://doi.org/10.1080/17549175.2022.2054852>

Key Words: Mixed-use, Collaboration, Social infrastructure, Toronto, Developers

BARRIERS TO INTENSIFICATION IN THE MID-SIZED CANADIAN CITY: A CASE STUDY OF REGINA, SK

Abstract ID: 1223

Abstract within Pre-Organized Session 42

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Regina, Saskatchewan, comparable to many of Canada’s mid-sized cities, has established a policy agenda that aims to curb sprawl and encourage intensification. However, relative to Canada’s largest cities, mid-sized cities have faced challenges in altering growth patterns and are less likely to see a significant shift towards intensification. Mid-sized cities are typically characterized as being dispersed, decentralized, and highly auto-dependent (Filion et al., 2004). Moreover, previous research found that residents prefer the convenience, privacy, and space that mid-sized cities offer (Bunting et al., 2007). Perhaps unsurprisingly, Regina has struggled to implement its 30% annual intensification target and is lagging well behind on the target to attract 10,000 new residents to the city centre – despite a policy shift nearly a decade ago. This research seeks to better understand why both targets have not been successfully implemented and why the ‘say-do-gap’ perpetuates. Specifically, this research addresses two central questions:

-What are the barriers impeding Regina’s intensification targets?

-How can the City mitigate these barriers and stimulate market-led intensification?

To address these questions, a series of semi-structured interviews were conducted with experts involved with Regina’s planning and development industry. Our findings uncover the most significant barriers impeding the implementation of the City’s intensification targets. Moreover, based on informant insight, we identify the tools, actions, and programs that the municipality might enact to overcome the barriers identified and “prime the pump” to stimulate developer-led intensification. These findings offer an important contribution in understanding growth patterns in small and mid-sized Canadian cities, an understudied cohort of cities (Hartt & Hollander, 2018; Seasons, 2003).

Citations

- Bunting, T., Filion, P., Seasons, M., & Lederer, J. (2007). Density, Size, Dispersion: Towards Understanding the Structural Dynamics of Mid-Size Cities. *Canadian Journal of Urban Research*, 16(2).
- Filion, P., Hoernig, H., Bunting, T., & Sands, G. (2004). The Successful Few: Healthy Downtowns of Small Metropolitan Regions. *Journal of the American Planning Association*, 70(3), 328–343. <https://doi.org/10.1080/01944360408976382>
- Hartt, M., & Hollander, J. (2018). City Size and Academic Focus: Exploring Trends in Canadian Urban Geography, Planning and Policy Literature. *Canadian Journal of Urban Research*, 13.
- Seasons, M. (2003). Monitoring and Evaluation in Municipal Planning: Considering the Realities. *Journal of the American Planning Association*, 69(4), 430–440. <https://doi.org/10.1080/01944360308976329>

Key Words: Intensification, Development, Canada

URBAN REGENERATION IN CHINA: RECENT POLICY SHIFT FROM PROPERTY-LED REDEVELOPMENT TO MICRO-REGENERATION

Abstract ID: 1225

Abstract within Pre-Organized Session 42

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An extensive literature documents the incentives, practices, and social impacts of large-scale property-led redevelopment in China (He and Wu, 2005). However, in 2015, the municipal government of Guangzhou drafted a new redevelopment policy called “micro-regeneration” (weigaizao), aiming to promote a new round of urban

redevelopment without large-scale demolition. Although some recent research discusses the new redevelopment policy from the perspective of governance (Wang et al., 2022; Wu et al., 2022), a few questions remain unanswered. Why does the redevelopment policy shift from large-scale property-led to micro-regeneration? Who are the key actors in micro-regeneration? How has the micro-regeneration process been influenced, co-produced, and implemented by different actors? What are the new features of this new type of redevelopment?

A mixed-method research design (semi-structured interviews, non-participant observations, and desk research) is incorporated for conducting this research, and we select a single case to have an in-depth understanding of the policy shift. The Yongqingfang case is a pilot project of Guangzhou, the provincial capital of Guangdong Province in southern China. We find that the policy shift from large-scale demolition to small-scale and incremental micro-regeneration is attributed to political, cultural, economic, and financial reasons (Wu, 2016). Politically, micro-regeneration is a tactic adopted by the local state to tackle the issue of increasing social contestations generated by large-scale redevelopment. Culturally, historical and cultural elements are selectively preserved to facilitate creative industry and increase land value. Economically, the policy helps the local state improve land-use efficiency by replacing the traditional neighborhood with a commercial and tourist hub. Financially, it is a new strategy for the local state to mobilize market investment to facilitate a new round of urban redevelopment.

In sum, the practices of this new type of redevelopment can be better captured as a performance of “state entrepreneurialism” that combines “planning centrality” and “market instruments” in local development agendas (Wu, 2018). The local state uses various market instruments such as real estate development and commercialization of local culture and heritage to achieve its specific economic, political, and social objectives at different times. The various performances of the local state are due to the changing strategies of the central government. This policy transformation also indicates “state sovereignty” here is to achieve the objectives of the state, which is not necessarily confined to revenue maximization (Wu et al., 2021). In terms of social impacts, though grassroots have changed the pace and direction of the redevelopment, most of the local residents in the neighborhood are displaced. To fully understand the policy shift from large-scale property-led redevelopment to micro-regeneration and its practices in urban China, more in-depth case studies and causality analysis are needed for future research.

Citations

- He, S., & Wu, F. (2005). Property-led redevelopment in post-reform China: A case study of Xintiandi redevelopment project in Shanghai. *Journal of Urban Affairs*, 27(1), 1-23.
- Wang, M., Zhang, F., & Wu, F. (2022). Governing urban redevelopment: A case study of Yongqingfang in Guangzhou, China. *Cities*, 120, 103420.
- Wu, F. (2016). State dominance in urban redevelopment: Beyond gentrification in urban China. *Urban Affairs Review*, 52(5), 631-658.
- Wu, F. (2018). Planning centrality, market instruments: Governing Chinese urban transformation under state entrepreneurialism. *Urban Studies*, 55(7), 1383-1399.
- Wu, F., Zhang, F., & Liu, Y. (2022). Beyond growth machine politics: Understanding state politics and national political mandates in China's urban redevelopment. *Antipode*, 54(2), 608-628.

Key Words: urban redevelopment, urban governance, neighborhood changes, state entrepreneurialism, China

GOVERNING URBAN DEVELOPMENT FUTURES IN LATIN AMERICA

Abstract ID: 1226

Abstract within Pre-Organized Session 42

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Spatial governance and planning systems (SGPSs) are intended as the heterogeneous institutional frameworks allowing the management and the regulation of spatial organization within a certain society. The state-market relationship has been historically acknowledged as the main driver of spatial development, with recent contributions reckoning the complementary role of the necessity and the necessity-market in steering spatial development in the global South, and specifically in Latin American countries (Abramo, 2012). As reckoned by a number of scholars, spatial planning frequently occurs as the final stage of the urban development process when the land occupation and the building activities have already taken place. This happens in several countries from the global South, where the state seems not able to steer the urban development and consequently acts through an ‘ex-post regularization activity’ (Blanc et al., 2022), by acknowledging the land-use development rights already taken on the ground. However, when looking at the non-bureaucratized practices, it is possible to reckon ‘[an]other institutional’ (Ibid., 2022), i.e. the existence of alternative planning practices emerging from outside the official SGPSs. This paper compares the empirical research previously developed by the author in six Latin American countries –namely Argentina, Bolivia, Chile, Ecuador, Peru, and Uruguay– in so doing adopting ‘a posteriori comparison’ methodological approach (Montero & Baiocchi, 2021), which means looking through the cases after the research has been done. The heterogeneity of the cases and their peculiarities allow to reflect on the existing frictions

between the official SGPSs and the current planning practices. Even if spatial planning tools exist, they are often outdated or do not respond to the current societal needs, and the lack of participatory instances in planning processes stands out as a common feature. This situation has forced the civil society to produce alternative forms of ‘institutionality’, by leading to informal land-use management practices or to the mobilization of legal expertise to solve urban conflicts through the courts (Sotomayor et al., forthcoming). As a consequence, the same definition of SGPS as an ‘institutional technology’ (Janin Rivolin, 2012) is here questioned. What perspectives does the ‘other institutionality’ open to? The research findings suggest that the emerging ‘other institutionality’ is the one that better seems to face the dynamic and changing societal needs bypassing the existing rigid and outdated planning tools as well as the lack of participatory planning instances. Governing urban development futures in Latin America and beyond necessarily goes through a more fluid and broader understanding of SGPSs themselves, which could benefit the actions of both the policymakers and the practitioners involved in planning processes, as well as it opens to interesting research avenues both in the global South and in the global North.

Citations

- Abramo, P. (2012). La ciudad com-fusa: Mercado y producción de la estructura urbana en las grandes metrópolis latinoamericanas. *Revista EURE - Revista de Estudios Urbano Regionales*, 38(114), 35-69. <http://dx.doi.org/10.4067/S0250-71612012000200002>
- Blanc, F., Cabrera, J.E., Cotella, G., García, A., Sandoval, J.C. (2022). Does planning keep its promises? Latin American spatial governance and planning as an ex-post regularisation activity. *Planning Practice & Research*, 1-15. <https://doi.org/10.1080/02697459.2022.2042921>
- Janin Rivolin, U. (2012). Planning Systems as Institutional Technologies: a Proposed Conceptualization and the Implications for Comparison. *Planning Practice and Research*, 27(1), 63-85. <https://doi.org/10.1080/02697459.2012.661181>
- Montero, S., & Baiocchi, G. (2021). A posteriori comparisons, repeated instances and urban policy mobilities: What ‘best practices’ leave behind. *Urban Studies*, 1-20. <https://doi.org/10.1177%2F00420980211041460>
- Sotomayor, L., Montero, S., & Angel-Cabo, N. (forthcoming). Mobilizing Legal Expertise in and against Cities: Urban Planning amidst Increased Legal Action in Bogotá, *Urban Geography*.

Key Words: spatial governance and planning systems, urban development, comparative analysis, Latin America, other institutionality

PROGRESSIVE CITY IN A NEOLIBERAL STATE: EXPLORING RENTAL HOUSING POLICY IN TEL AVIV-JAFFA

Abstract ID: 1432

Abstract within Pre-Organized Session 42

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Housing policy has been in the firm grip of Israel’s central government agencies, which traditionally favored homeownership. However, the rapidly growing cost of living and housing unaffordability nationwide has brought the government to reconsider its housing policy. As a result, it has introduced policies that support increasing housing supply and developing long-term rental projects. Recently, long-term rentals in the form of Built-to-Rent have been a fast growing sector in housing markets across the globe (August, 2020; Nethercote, 2020; Brill & Durrant, 2021). This research focuses on the entrepreneurial and inclusive housing path the city of Tel-Aviv-Jaffa has adopted. Tel Aviv is the country’s most influential and innovative municipality, often metaphorically addressed as a separate entity within Israel – the “State of Tel Aviv”. We examine the motivations and the mechanisms that Tel Aviv applies towards securing a more social-sensitive rental housing policy which does not yield to the exclusivity of the neoliberal agenda. For this purpose we use a mixed-method approach based chiefly on semi-structured interviews conducted with key players in the local and national housing industry, and analysis of municipal reports, plans, and planning committees protocols. Theoretically our work engages with current debates on equity planning and financialization of rental housing (Biggar & Friendly, 2022; Geva & Rosen, 2022). The ability of Tel Aviv to pursue a more progressive housing policy than dictated by the state builds on its institutional capacities: visionary leadership, professional planning staff, land and financial resources. As a forerunner, Tel Aviv promotes several intervention paths. First, it forms ad-hoc collaborations with the state-owned rental housing corporation. Second, it acts as a developer on municipal-owned land to promote long-term rental housing. Third, the municipality advances urban regeneration and residential intensification, and negotiates with developers to increase the number of rental apartments in these projects.

Citations

- August, M. (2020). The financialization of Canadian multi-family rental housing: From trailer to tower. *Journal of Urban Affairs*, 42(7), 975-997.
- Biggar, J., & Friendly, A. (2022). Balancing equity-based goals with market-driven forces in land development: The case of density bonusing in Toronto. *Environment and Planning A*, 0308518X221087243.
- Brill, F., & Durrant, D. (2021). The emergence of a Build to Rent model: The role of narratives and discourses. *Environment and Planning A*, 53(5), 1140-1157.
- Geva, Y., & Rosen, G. (2022). In search of social equity in entrepreneurialism: The case of Israel's municipal regeneration agencies. *European Urban and Regional Studies*, 09697764221076343.
- Nethercote, M. (2020). Build-to-Rent and the financialization of rental housing: future research directions. *Housing Studies*, 35(5), 839-874.

Key Words: municipal entrepreneurialism, equity planning, inclusionary zoning, rental housing, Israel

CLIMATE CHANGE IN FLORIDA: FISCAL, GOVERNANCE, COMMUNITY AND LAND USE PERSPECTIVES

Pre-Organized Session 57 - Summary

Session Includes 1115, 1362, 1363, 1364

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Florida is often considered ground zero for climate change impacts in the U.S. However, the policy response in Florida has been limited and incremental, all while population growth and coastal real estate development continue with few signs of slowdown. This session brings together a group of Florida-based scholars to highlight the breadth of climate change-related issues facing Florida. Papers in this session address issues of climate displacement, fiscal vulnerability, institutional capacity, and land use planning policy. Collectively, this session explores how policy responses for Florida's coastal areas will impact economic, environmental, and community resiliency in the Sunshine State.

Objectives:

- Present and assess Florida local government policies that respond to climate change
- Highlight the impacts of climate change on Florida communities
- Examine opportunities, challenges, and barriers to enhancing coastal area planning in Florida

DENSITY INCREASES IN THE COASTAL HIGH HAZARD AREA: HOW FLORIDA LOCAL GOVERNMENTS REGULATE NEW RESIDENTIAL DEVELOPMENT IN FLOOD ZONES

Abstract ID: 1115

Abstract within Pre-Organized Session 57

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This research examines Florida local government policies that address development in the places where people, property, and infrastructure are most at risk from storm surges. Under Florida Statutes, Coastal High Hazard Areas (CHHA) are defined as the area below the elevation of a Category 1 storm surge line and are those places most likely to be significantly damaged or submerged by sea water. Florida requires that local governments designate CHHA areas within the local comprehensive plan and limit CHHA development in accordance with the hurricane evacuation capacities supported by local transportation infrastructure. Although Florida's CHHA rules have changed over time since first adopted as part of the 1985 Growth Management Act, the overall intent has been to limit development in the CHHA for the purpose of maintaining evacuation capacity and minimizing loss related to public infrastructure and other public expenditures (Puszkin-Chevlin and Esnard, 2009).

Many Florida communities have long-established policies prohibiting additional residential density in the CHHA, resulting in zoning codes that are "frozen in time" (Puszkin-Chevlin and Esnard, 2009, 36). This led to concerns about the abilities of some communities to accommodate projected population growth, support economic development, and provide affordable housing. These concerns were amplified following a 2016 update to the Florida Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model used to identify the CHHA. In many communities, the update resulted in a significant expansion of the CHHA. For example, the City of St. Petersburg faced a 41% increase in the CHHA following the 2016 model update; this in turn resulted in text amendments to their Comprehensive Plan in

2020 that shifted from a strict prohibition of new development in the CHHA to a criteria-based project evaluation approach.

This research provides a survey of Florida local government policies for accommodating residential density in the CHHA. Specifically, it addresses three research questions:

- What are the local government's baseline rules for addressing new density in the CHHA?
- How have requests for additional density in the CHHA been decided over the last decade?
- What changes to the CHHA density rules have been considered or adopted since the 2016 update?

The research includes two phases. In phase one, a survey of local government comprehensive plans that include Coastal Management Elements was conducted to identify policies for addressing new density in the CHHA. Policies were analyzed to identify major approaches, such as those that strictly limit new density, those that incorporate incentives such as transferable development rights that direct density to specific areas, and those that use criteria such as building code or hurricane evacuation standards to permit density increases. For this phase, data collection is complete and analysis is underway.

In phase two, case studies of at least four Florida communities will be conducted (Summer and Fall 2022) to examine how requests for additional density in the CHHA have been decided over the last decade and to identify CHHA density rule changes that have been proposed or adopted. The case study research will include interviews with key stakeholders, a review of relevant planning decision meeting minutes, and analysis of local media coverage.

The research will provide information about best practices in addressing density in flood prone areas. Florida's experiences provide instructive lessons on the balancing act involved between protecting human lives and public assets, preventing climate gentrification, and accommodating demand for housing and redevelopment near existing urban infrastructure.

Citations

- Butler, W., Deyle, R., and Mutnansky, C. (2016). Low-regrets incrementalism: Land use planning adaptation to accelerating sea level rise in Florida's coastal communities. *Journal of Planning Education and Research*, 36(3): 319-332.
- Holmes, T. and Butler, W. (2021). Implementing a mandate to plan for sea level rise: top-down, bottom-up, and middle-out actions in the Tampa Bay region. *Journal of Environmental Planning and Management*, DOI: 10.1080/09640568.2020.1865885
- Markell, D. 2016. Emerging Legal and Institutional Responses to Sea-Level Rise in Florida and Beyond. *Columbia Journal of Environmental Law*, 42, 1-58.
- Murley, J., Puszkin-Chevlin, A., Esnard, E., Kalin, R., Matthews, M., and Grooms, A. (2008). Assessment of Redefining Florida's Coastal High Hazard Area. Florida Atlantic University Center for Urban and Environmental Solutions.
- Puszkin-Chevlin, A. and Esnard, E. (2009). Incremental evolution and devolution of Florida's Coastal High Hazard Area policy. *Journal of Environmental Planning and Management*, 52(3), 297-313.

Key Words: Density, Sea level rise adaptation, climate change, hurricane evacuation, Florida

ADVOCACY PERSPECTIVES ON CLIMATE GENTRIFICATION IN FLORIDA: CASES STUDIES FROM DUVAL, PINELLAS AND MIAMI-DADE COUNTIES

Abstract ID: 1362

Abstract within Pre-Organized Session 57

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Encroaching sea levels may lead to eventual mass migration away from Florida's densely populated coast. Lower income communities of color located inland on higher ground may become prime relocation sites for investment and climate upgrading to create new safe havens for climate migrants. These inland communities are often marginalized in planning and decision-making process and receive little of the technical assistance, funding or economic benefits associated with climate adaptations (Morrow et al. 2019). Scholars have begun to speculate about where coastal residents might move (Hauer et al. 2020) and the impact it will have on existing inland residents which has given rise to increasing interest in the potential and process of "climate gentrification" (Keenan et al. 2018). However, planners and policymakers have yet to focus much attention on these converging dynamics of displacement (Butler et al. 2021).

While public sector actors have been slow to adopt policies and practices to get ahead of the sea level rise problem (Fu, 2020), non-profit and community organizations involved in affordable housing, community development and environmental justice have taken the lead in bringing attention to the potential impacts and desired policy directs to address climate gentrification. In this paper, we ask: What are advocacy planning organizations doing to address climate gentrification concerns and what impacts are they having on public discourse, projects, plans, and policies? The paper presents comparisons across key advocacy organizations in large coastal metro regions of Miami, Tampa Bay, and Jacksonville and their approaches to promote more climate equitable and resilient decision-making processes and outcomes for inland lower income communities of color.

Catalyst Miami is a vocal grassroots organization operating across different spheres related to environmental and social justice. Groundworks JAX in Jacksonville seeks to advance an integrated incorporation of economic, environment, education, and equity principles to empower residents through environmental planning processes. United Way Suncoast in Tampa Bay Region is a multi-jurisdictional spanning organization focused on breaking the cycle of poverty by establishing local programs to help increase individual and household incomes and build financial assets. These organizations and others like them are working to call attention to climate equity issues in their respective regions and push the public sector to develop more robust responses. They are working to identify community needs, conduct visioning activities, developing plans, and building capacity to implement programs and projects in at-risk neighborhoods.

The pathways in which these organizations operate to advocate for their constituents vary. Catalyst Miami is highly engaged in political dialogue with city officials and policy makers and also working to empower residents to spearhead organizing campaigns that challenge city actions. Groundworks JAX seeks to develop more collaborative relationships with government but access to and inclusion in decision making processes continue to lag. United Way is well recognized with a wide range of partnerships to support community and neighborhood development. However, these connections do not extend to climate and resilience planning efforts. These cases indicate a growing concern about the pace of gentrification related displacement in many lower income neighborhoods and often frustrated by the lack of attention to affordable housing and the compounding impacts climate change will have on these trends. Coalitions and collaborations developed by these community advocacy organizations are helping to fill gaps left by city-county agencies.

This research highlights the important role advocacy planning organizations play in promoting more locally applicable and integrated approaches to bring together resilience programs, affordable housing programs, and neighborhood stabilization programs into a more coordinated effort to address climate impacts, manage externalities of climate adaptations and chart an equitable and climate resilient Florida.

Citations

- Butler, W., Holmes, T., Jackson, A. Lange, Z., Melix, B., Milordis, A. 2021. Addressing climate driven displacement: Planning for sea level rise in Florida's coastal communities and affordable housing in inland communities in the face of climate gentrification. Leroy Collins Institute, Florida State University: Tallahassee, FL.
- Hauer, M. E., Fussell, E., Mueller, V., Burkett, M., Call, M., Abel, K., & Wrathall, D. (2020). Sea-level rise and human migration. *Nature Reviews Earth & Environment*, 1(1), 28-39.
- Fu, X. (2020). Measuring local sea-level rise adaptation and adaptive capacity: A national survey in the United States. *Cities*, 102, 102717.
- Keenan, J. M., Hill, T., & Gumber, A. (2018). Climate gentrification: from theory to empiricism in Miami-Dade County, Florida. *Environmental Research Letters*, 13(5), 054001.
- Meerow, S., Pajouhesh, P., & Miller, T. R. (2019). Social equity in urban resilience planning. *Local Environment*, 24(9), 793-808.

Key Words: Climate gentrification, Advocacy planning organizations, Resilience, Equity, Sea level rise

CAN FLORIDA'S COAST SURVIVE ITS RELIANCE ON DEVELOPMENT? FISCAL VULNERABILITY AND FUNDING WOES UNDER SEA LEVEL RISE

Abstract ID: 1363

Abstract within Pre-Organized Session 57

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Built on sea, sunshine, and sand, Florida relies on in-migration and coastal development for retirees, snowbirds, second homeowners, and vacationers (Chapin, 2017; Grunwald, 2006). Reliance on and support for growth permeates the state's land governance system, from its tax structure, to zoning and land use regulations, to infrastructure policies. In this context, climate change not only physically threatens the built environment, but also an entire urban governance framework that depends on the stationarity of land. While state and local climate adaptation efforts are advancing, major disconnects remain between advocacy for physical infrastructure resilience on one hand and contending with fiscal and governance realities of climate impacts on the other (Shi & Varuzzo, 2020).

In this paper, we ask, what are the impacts of sea level rise (SLR) for Florida's municipal fiscal stress? We conduct a spatial analysis of municipal own source revenues at risk of chronic inundation in coastal Florida due to 6.4 feet of SLR, which may take place by 2100. To our knowledge, this is the first statewide, municipal assessment of fiscal impact for Florida, though other studies have estimated the risks to businesses, infrastructure, property values, and fiscal risks at aggregated levels (such as census county divisions or the state) (see e.g., Fu et al., 2016). We complement this with a statewide survey of local coastal planners and managers to assess how they are attempting to fund SLR adaptation responses and what barriers they face.

We find that 209 or 51% of Florida's 411 municipalities are impacted by 6.4 feet of SLR, with 106 municipalities having over 25% of their current total revenues deriving from sources that may be chronically inundated by 2100. An estimated \$1.35 billion property taxes and \$1.82 billion in user fees and charges (as of 2015) are at risk given projected SLR, equaling 50% of the total property taxes, fees, and charges currently collected from these locales. The most fiscally exposed municipalities are disproportionately whiter, wealthier, denser, and more land constrained compared to those with lower exposure. Coastal planners and managers identify the costs of planning and implementing SLR adaptation projects as the top barriers to making progress on SLR adaptation in the state (Butler et al., 2021). Moreover, survey respondents noted that they depend heavily on current staffing and local budget allocations to address SLR adaptation. This poses a fiscal conundrum as they struggle to protect sources of tax revenue. Yet, we find no relationship between the level to which municipalities are fiscally exposed and their prioritization of climate adaptation.

These findings affect the feasibility, equity, and scale of future adaptation. First, local officials are underestimating the fiscal impacts of climate change. They are relying on revenue sources for adaptation that will become increasingly eroded by climate change, market internalization of climate risks, and property devaluation following flood insurance premium hikes, thereby undermining local adaptive capacity. Second, the comparative privilege of affected communities raises questions about the level of priority such communities should receive, as well as concerns of regional gentrification and displacement if these communities move to less affected inland communities. Finally, both these concerns raise the issue of the appropriate scale of land governance and tax redistribution to overcome the current constraints facing coastal and near-coast communities. Below, we discuss the context and drivers behind Florida's fiscal vulnerability, present the findings from each dataset followed by their cross-cutting implications, and conclude with implications for state and local policy.

Citations

- Butler, W., Holmes, T. T., Jackson, A., Lange, Z., Melix, B., & Milordis, A. (2021). Butler, W. H., Holmes, T. T., Jackson, A., Lange, Z., Melix, B., & Milordis, A. (2021). Addressing Climate Driven Displacement: Planning for Sea Level Rise in Florida's Coastal Communities and Affordable Housing in Inland Communities in the Face of Climate Gentrification (p. 156pp.) [Research report]. Leroy Collins Institute, Florida State University.
- Chapin, T. (2017). Growth Management in Florida: Planning for Paradise. Routledge. <https://www.routledge.com/Growth-Management-in-Florida-Planning-for-Paradise/SChapin/p/book/9780815389354>
- Fu, X., Song, J., Sun, B., & Peng, Z.-R. (2016). "Living on the edge": Estimating the economic cost of sea level rise on coastal real estate in the Tampa Bay region, Florida. *Ocean & Coastal Management*, 133, 11–17. <https://doi.org/10.1016/j.ocecoaman.2016.09.009>
- Grunwald, M. (2006). *The Swamp: The Everglades, Florida, and the Politics of Paradise*. Simon & Schuster, Inc.
- Shi, L., & Varuzzo, A. M. (2020). Surging seas, rising fiscal stress: Exploring municipal fiscal vulnerability to climate change. *Cities*, 100, 102658. <https://doi.org/10.1016/j.cities.2020.102658>

Key Words: fiscal stress, property tax, climate adaptation, flooding, regionalism

BUILDING CLIMATE CAPACITY AT THE REGIONAL SCALE: DIVERSE PATHWAYS OF CLIMATE COLLABORATIVES IN FLORIDA

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Regional climate collaboratives (RCCs) have emerged since the mid-to-late 2000s to build local capacity, exchange knowledge, and work collaboratively to address climate impacts across sectors and jurisdictions. Drawing from a lineage of regional planning and collaborative governance approaches, RCCs are largely voluntary, ad-hoc networks with no legal authority. One of the earliest groups, the Southeast Florida Regional Climate Change Compact, established in 2009 (Vella et al., 2016), has motivated other regions in Florida to follow suit. The regions of Tampa Bay, East Central Florida, and Northeast Florida each have formalized collaboratives, with discussions underway in other regions. While RCCs appear to be the chosen vehicle to catalyze climate action in Florida, the challenges of voluntary, regional collaboration loom large. These groups must contend with lack of funding, institutional constraints, lack of authority, respecting local authority and autonomy, and defining shared goals (Adams & French, 2019, Bennett & Grannis, 2017, Shi, 2017).

Even with these hurdles, RCCs in Florida are gaining momentum, attracting members, and building legitimacy. In this research, we used a comparative case study method to examine the origins of four Florida's RCCs, their approaches to network building, and the early outcomes of their collaborative efforts. We applied Innes and Booher's (1999) Consensus Building and Complex Adaptive Systems framework to our analysis of RCCs as a way to evaluate the extent to which these groups build the foundations of effective regional climate action. In particular, we examine the intangible outcomes (products) developed as foundational first-order effects, which include social, intellectual, and political capital. This research is based on a long-term data collection effort on regional planning for climate change adaptation in Florida. Since 2012, the authors have independently and collectively been involved in various aspects of this work from studying specific RCCs to participating directly in them. Primary data sources include documents, interviews, and participant observations.

Our comparative cases highlight how different approaches to regional collaboration build intangible products (social, intellectual, and political capital), which are foundation for facilitating tangible outcomes later. As network entities, RCCs develop the structure that allows individuals and groups to connect, build trust, and share resources. We found that RCCs convened stakeholders through steering committee meetings, workshops, and summits, which provided opportunities to build social capital and deepen relationships. We also find that RCCs have helped local governments navigate the complexity and uncertainty of climate change planning by positioning themselves as the hubs for knowledge and information exchange. Florida RCCs have been effective at sharing information, training stakeholders on tools and adaptation strategies, and pooling resources to develop technical information, such as unified sea level rise (SLR) projections. These activities have built intellectual capital, helping to shape mutual understanding and problem frames while using agreed upon data and information to define, refine, and inform planning efforts. Finally, we find that RCCs are building political legitimacy and buy-in at multiple scales. The elected bodies of numerous local governments have voted to adopt MOUs, which commit to collaboration with the RCCs. At the state level, the Compact influenced state level policy with establishment of Adaptation Action Areas to address areas at risk from SLR. RCCs also gained statewide legitimacy during the 2021 legislative session when they were singled out for funding to support SLR adaptation efforts.

Our cases show the diverse ways in which RCCs in Florida are developing intangible products, which lay the groundwork for future work and results on the ground. As cities and counties continue to invest in RCCs, more scholarship is needed to determine the limits of these collaborative vehicles and how early outcomes might translate into long-term outcomes for addressing climate change impacts.

Citations

- Adams, S., & French, K. (2019). Regional Collaboratives for Climate Change – A State of the Art – U.S. Local Solutions. Institute for Sustainable Communities. <http://us.sustain.org/resource/regional-collaboratives-for-climate-change-a-state-of-the-art/>
- Bennett, A., & Grannis, J. (2017). Lessons in Regional Resilience: Case Studies on Regional Climate Collaboratives. Georgetown Climate Center. https://www.georgetownclimate.org/files/report/GCC-Lessons-in-Regional-Resilience-Synthesis-Jan_2017.pdf
- Innes, J.E., & Booher, D.E. (1999) Consensus Building and Complex Adaptive Systems, *Journal of the American Planning Association*, 65:4, 412-423, DOI: 10.1080/01944369908976071
- Shi, L. (2017). A new climate for regionalism: metropolitan experiments in climate change adaptation. Massachusetts Institute of Technology. <https://dspace.mit.edu/handle/1721.1/111370>

- Vella, K., Butler, W. H., Sipe, N., Chapin, T., & Murley, J. (2016). Voluntary Collaboration for Adaptive Governance: The Southeast Florida Regional Climate Change Compact. *Journal of Planning Education and Research*, 36(3), 363–376. <https://doi.org/10.1177/0739456X16659700>

Key Words: regionalism, climate, collaboration

PLANNING FOR INCLUSIVE CITIES: OVERCOMING CONSTRAINTS TO FAIR HOUSING IN CALIFORNIA AND BEYOND

Pre-Organized Session 121 - Summary
Session Includes 1867, 1868, 1869, 1870

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The papers in this session focus on efforts to regulate local land use planning, and details of the challenges in forcing local governments to change land use planning practice in a way that is necessary to create inclusive cities. California's incorporation of an Affirmatively Furthering Fair Housing (AFFH) mandate into its existing statewide planning process raises questions about how higher levels of government can most effectively encourage local governments to change and the conflation of race and income in the analysis and implementation of fair housing. Papers in the panel focus on these new questions and challenges, as well as a longstanding component of California's statewide housing planning process, the analysis (and removal) of constraints to housing production, and the measurement of opportunity.

Objectives:

- How and whether local governments are affirmatively furthering fair housing, and how this can be assessed
- Tensions in the use of income as a proxy for race in fair housing analysis and implementation
- Analysis of constraints to housing production

ARE CALIFORNIA CITIES AFFIRMATIVELY FURTHERING FAIR HOUSING?

Abstract ID: 1867

Abstract within Pre-Organized Session 121

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The Affirmatively Furthering Fair Housing (AFFH) component of the 1968 federal Fair Housing Act required local governments to take actions to reverse the legacy of racial segregation in cities. Federal AFFH rules were never aggressively implemented. In 2017, California began requiring local governments to AFFH in periodic updates to housing plans, with detailed lists of sites apt for affordable housing development. A state level AFFH rule creates a greater potential for change because unlike federal leverage over municipalities, which is limited to funding, state governments can and do insert themselves directly into land use planning. Yet, measurement and expectations are major challenges to progress on AFFH. Current approaches to fair housing analysis are often copious but do not measure plans in a manner that can assess potential for change. In this study, we ask, are Southern California cities promoting segregation or inclusion across neighborhoods through their housing plans? We answer this question by analyzing the neighborhood characteristics of multi-family zoning in roughly 200 cities as well as the parcels these cities are making available for affordable housing development in their housing plans. We assess whether any of these plans will change the status quo connection between zoning and opportunity. The findings raise a core challenge for the AFFH mandate, without clear expectations will cities make the necessary changes to “replace segregated living patterns with truly integrated and balanced living patterns”?

Citations

- Steil & Kelly, The Fairest of Them All: Analyzing Affirmatively Furthering Fair Housing Compliance, *Housing Policy Debate* 29:1 (2018)
- O'Neill-Hutson, Moira, Eric Biber, Raine Robichaud, Giulia Gualco-Nelson, Nick Marantz. 2021. Examining Entitlement in California to Inform Policy and Process: Advancing Social Equity in Housing Development Patterns 3900-19STC005
- Monkkonen, Paavo, and Spike Friedman. 2019. Not Nearly Enough: California Lacks Capacity to Meet Lofty Housing Goals. UCLA Lewis Center for Regional Policy Studies Policy Brief.
- Kapur, Sidharth, Salim Damerdji, Chris Elmendorf, and Paavo Monkkonen. 2021. What gets built on sites that cities “make available” for housing? UCLA Lewis Center for Regional Policy Studies.

- Baer, 2008. California's Fair-Share Housing 1967–2004: The Planning Approach. *Journal of Planning History*, 7(1) 48-71.

Key Words: Affirmatively Furthering Fair Housing, Land Use Planning, Housing Planning, Segregation, California

THE CONFLATION OF RACE AND SOCIOECONOMIC STATUS IN FAIR HOUSING PLANNING EFFORTS

Abstract ID: 1868

Abstract within Pre-Organized Session 121

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The federal Fair Housing Act's affirmatively furthering fair housing (AFFH) mandate requires that federal agencies that administer housing and community developments funds, as well as their state and local government grantees, explicitly consider race and patterns of residential racial segregation when designing and implementing housing and community development programs. See *Shannon v. U.S. Dep't of Hous. & Urb. Dev.*, 436 F.2d 809, 821-22 (3d Cir. 1970) (listing factors that the federal government should take into account when making housing investments); see also *Otero v. New York City Hous. Auth.*, 484 F.2d 1122, 1133-34 (2d Cir. 1973) (holding that the federal government's AFFH obligation extended to a local housing authority administering federal funds). Moreover, claims that focusing on housing needs by income level, without also considering race, is sufficient to fulfill AFFH obligations have not been successful. *U.S. ex rel. Anti-Discrimination Center of Metro New York, Inc. v. Westchester County*, 668 F. Supp. 2d 548, 564-65 (S.D.N.Y. 2009) (holding that use of income as a proxy for race in a municipal fair housing plan did not comply with the AFFH obligation). When the State of California created a state law AFFH obligation through the passage of A.B. 686 in 2018, the Legislature decided to embed the requirement to produce local fair housing plans in the existing Housing Element law, which requires municipalities to engage in planning that facilitates the development of sufficient housing at various income levels to satisfy their Regional Housing Needs Allocations (RHNA's). In other words, although A.B. 686 itself both directly and indirectly requires that local governments consider race, the law seeks to leverage existing structures that focus on socioeconomic status. As California local governments begin to comply with A.B. 686 by producing fair housing plans as components of their Housing Elements, this structure invites the questions of (1) whether local Housing Elements include policies and programs that reflect explicit consideration of race and patterns of residential racial segregation rather than relying on race-neutral, predominantly income-based proxies and (2) whether administration by the California Department of Housing and Community Development (HCD) and regional councils of governments of the overarching structure for Housing Elements and their AFFH component likewise avoid the conflation of race and socioeconomic status. To begin to gain a partial understanding of the answers of these two questions, I will assess (1) the extent to which Housing Elements submitted to HCD by local governments in Southern California that include both high-income predominantly, white census tracts and high-income census tracts where people of color comprise larger shares of people of color differentiate between those areas in prioritizing zoning changes and identifying sites for future development; (2) the extent to which Housing Elements submitted to HCD by local governments in Southern California with higher concentrations of white residents than the region as a whole analyze the impact of local preferences for admission to affordable housing and call for the elimination or modification of such preferences; and (3) the extent to which RHNA allocations for high-income local governments differ based on the racial demographics of those communities. To the extent that this research reveals systemic failures to race, rather than socioeconomic status, in AFFH efforts, it could inform recommendations for future HCD guidance and for changes to the RHNA process to create better alignment with the AFFH mandate of A.B. 686.

Citations

- Thomas Silverstein, *Overcoming Land Use Localism: How HUD's New Fair Housing Regulation Can Push States to Eradicate Exclusionary Zoning*, 5 J. LAND & DEV. 25 (2015).
- Stephen Hayes, *Enforcing Civil Rights Obligations through the False Claims Act*, 1 COLUM. J. RACE & L. 29 (2011).
- Zachary C. Freund, *Perpetuating Segregation or Turning Discrimination on Its Head? Affordable Housing Residency Preferences As Anti-Displacement Measures*, 118 COLUM. L. REV. 833 (2018).
- Robert M. Silverman Et Al., *Siting Affordable Housing in Opportunity Neighborhoods: An Assessment of HUD's Affirmatively Furthering Fair Housing Mapping Tool*, 25 J. OF CMTY. PRACTICE 143 (2017).

Key Words: Affirmatively Furthering Fair Housing, Land Use Planning, Housing Planning, Segregation, California

MEASURING LOCAL POLICY TO ADVANCE FAIR HOUSING

Abstract ID: 1869

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California's enactment of AB 686 in 2017 to Affirmatively Further Fair Housing requires all cities and counties to take "meaningful action" to affirmatively further fair housing (AFFH) (Housing Discrimination: affirmatively furthering fair housing, AB-686 Chapter 958 "Bill Analysis" and "Text," 2017-2018 Reg. Ses.; Bill Analysis, Housing Discrimination: affirmatively furthering fair housing, AB-686 Chapter 958, 2017-2018 Reg. Ses.; Housing Discrimination: affirmatively furthering fair housing, AB-686 Chapter 958, 2017-2018 Reg. Ses.). AB 686 requires that local governments use local, state, and federal data in this process. This requirement builds on California's signature fair share Housing Element law.

Housing Element law requires jurisdictions to plan and zone for density to accommodate their regional housing need (Cal. Gov't. Code § 65583 et seq.). The law requires (among other things) that cities and counties identify and correct for regulatory constraints on housing production that would support meeting production targets set by a Regional Housing Need Allocation (Cal. Gov. Code Sections 65580 to 65889.11). Although Housing Element law uses density as a proxy for affordability of housing for low-income residents, the law considers that regulatory obstacles to production, particularly affordable development, can include more than inadequate land zoned for density. Development review processes can operate to burden, limit, or block multi-family and affordable housing. Thus Housing Element law also demands cities identify process constraints to production within the planning process, propose corrections, and annually report out on development approvals and denials. Recent amendments to this law increase local level reporting requirements, theoretically providing even more local level data to inform and correct for regulatory constraints to fair housing goals.

Are cities identifying regulatory constraints on production? Are the annual reports accurate? This paper examines whether 24 California have identified any regulatory constraints in recent planning processes and proposed policy corrections. The research draws on granular local-level data on how land use regulation (state and local) impacts multi-family development. This allows us to compare each cities' self-assessment of its own regulation in the planning process, and the quality of its annual reporting, against independently verified and cleaned housing approval data. The analysis offers insight into whether California's AFFH and Housing Element law is on track to produce quality local level data to identify and correct for regulatory constraints on housing production—particularly affordable housing production—to support fair housing policy.

Citations

- O'Neill-Hutson, Moira, Eric Biber, Raine Robichaud, Giulia Gualco-Nelson, Nick Marantz. 2021. Examining Entitlement in California to Inform Policy and Process: Advancing Social Equity in Housing Development Patterns 3900-19STC005 (2022)
- Paul G. Lewis, Can State Review of Local Planning Increase Housing Production? 16 Housing Pol. Debate 173 (2005)
- Darrel Ramsey-Musolf, Evaluating California's Housing Element Law, Housing Equity, and Housing Production (1990-2007), 26 Housing Pol. Debate 488 (2016)
- Elmendorf, C., Monkkonen, P., Biber, E., O'Neill, M. Making It Work: Legal Foundations for Administrative Reform of California's Housing Framework, 47.4 Ecology Law Quarterly 973 (2020)

Key Words: Affirmatively Furthering Fair Housing, Land Use Regulation, Transparency, Fair Housing Policy

HAVE CALIFORNIA'S ACCESSORY DWELLING UNIT REFORMS LEVELED THE PLAYING FIELD AMONG CITIES?

Abstract ID: 1870

Abstract within Pre-Organized Session 121

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Housing advocates have long touted accessory dwelling units (ADUs) as a potential solution to soaring housing costs in coastal metro areas. Beginning in the early 1980s, California legislators repeatedly modified state law to foster ADU development, but – until recently – these reforms were widely viewed as ineffectual. State law empowered local governments to permit ADUs, but did not sufficiently constrain localities from imposing onerous substantive and procedural requirements on ADU development. State legislators recognized this problem, and – between 2015 and

2017 – adopted a set of reforms essentially requiring local governments to establish reasonable, objective criteria for ADUs and to approve code-compliant units on lots with single-family homes. In 2019, the legislature went even further, barring minimum lot size requirements for ADUs; strictly limiting local impact fees on ADUs; invalidating any covenants, conditions, and restrictions (CCRs) promulgated by homeowners associations (HOAs) that prohibit or unreasonably restrict ADUs; and requiring cities to approve ADU projects that conform to state-law criteria irrespective of local zoning. In 2020, the legislature required HOAs to lift restraints on the rental of ADUs.

This article assesses whether the changes between 2015 and 2017 facilitated ADU construction equally across jurisdictions, and it will lay the groundwork for further research assessing the impacts of the 2019 and 2020 reforms, which we will complete once data on ADU production for 2021 (and later years) becomes available. In principle, the 2015-2017 reforms should have substantially leveled the playing field for ADUs, allowing their development in previously recalcitrant jurisdictions. Yet, given California's long history of creative municipal tactics to limit housing supply, it is possible that – after controlling for a variety of supply and demand factors that could explain the construction of ADUs – we may observe residual variation among municipalities.

This article is the first, to our knowledge, to analyze the relationship between ADU development, single-family zoning, and HOAs' CCRs. Our analyses consist of descriptive statistics, coupled with parcel-level regression models. We fit one model with jurisdiction fixed effects, which indicate which cities are permissive (or restrictive) of ADUs relative to a reference jurisdiction. This model can provide guidance for California policymakers, and it also provides a template for other states to evaluate municipal performance vis-à-vis statewide reforms. A second set of hierarchical models, with varying intercepts for jurisdictions, enables us to identify jurisdiction-level features that may be associated with ADU regulation, such as median single-family lot size, the percentage of residents who are homeowners, and a variety of other demographic characteristics that may constrain ADU development. This second set of models helps to identify the jurisdiction-level factors that may explain variation in ADU development.

Citations

- Brinig, M. F., & Garnett, N. S. (2013). A room of one's own: Accessory dwelling unit reforms and local parochialism. *Urb. Law.*, 45, 519.
- Chapple, Karen, et al. "Reaching California's ADU Potential: Progress to Date and the Need for ADU Finance." *Terner Center for Housing Innovation, UC Berkeley* (2020).
- Infranca, John. "Housing changing households: Regulatory challenges for micro-units and accessory dwelling units." *Stan. L. & Pol'y Rev.* 25 (2014): 53.

Key Words: Zoning, Housing, Accessory Dwelling Units, Homeowners Associations

Track 8 Roundtables

THE STATE OF BROWNFIELDS REVITALIZATION AND REUSE RESEARCH – A 30-YEAR RETROSPECTIVE

Abstract ID: 1158
Roundtable

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Since the 1990s, the reuse of brownfield sites has emerged as a core strategy in government efforts to remediate pollution and promote community revitalization, regeneration, and sustainability. Planning scholars along with researchers from engineering, architecture, public health, and a host of other disciplines, have played an integral role in generating studies that critically examine, assess, and advance brownfield planning, policy, and practice globally. This roundtable explores the evolution and current state of brownfields research. It also examined gaps and opportunities in need of further investigation to further community and policy actions related to investigating, remediating, and managing potentially contaminated sites. The session will also touch on the ACSP conference themes associated with strengthening community action for dismantling structural racism and disinvestment and reducing the disproportionate risks experienced by communities of colour, Indigenous populations, and areas of low income.

Seasoned brownfields researchers and practitioners will initiate the session by offering short summaries of their viewpoints and engage in discussion with each other and the audience. They will draw on a new paper reviewing brownfields research in the United States written by a dozen brownfield scholars and practitioners who have met regularly at the US EPA's Brownfields conferences and the ACSP to discuss the state of the literature. The roundtable will also touch on the state of brownfields research in Canada, and brownfield researchers from other countries are also invited to share their viewpoints. The organizers also welcome those not directly involved in brownfields research to join the session and engage in the discussion.

Citations

- Carroll, A., De Sousa, C., Whitehead, S., Berman, L., Coffin, S., Heberle, L., Hettiarachchi, G., Martin, S., Sullivan, K., and J. Van Der Kloot (under review). "A Review of Brownfields Revitalization and Reuse Research in the US over Three Decades." *Local Environment*.
- Greenberg, M., Lowrie, K., Mayer, H., Miller, K.T., and L. Solitare. (2001) "Brownfield Redevelopment as a Smart Growth Option in the United States." *Environmentalist* 21(2): 129-143.
- Hollander, J., Kirkwood, N., and J. Gold. (2010) *Principles of Brownfield Regeneration: Cleanup, Design, and Reuse of Derelict Land*. Washington, D.C.: Island Press.
- Heberle, L., & Wernstedt, K. (2006). "Understanding Brownfields Regeneration in the US. *Local Environment* 11(5): 479-497.
- Lin, H., Zhu, Y., Ahmad, N., and Q. Han. (2019). A Scientometric Analysis and Visualization of Global Research on Brownfields. *Environmental Science and Pollution Research*, 26(17), 17666-17684.

Key Words: brownfields, redevelopment, contaminated lands, planning, policy

GOVERNING LAND FOR A DYNAMIC EARTH: PLANNING, PROPERTY, AND CLIMATE CHANGE

Abstract ID: 1381

Roundtable

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Property rights regimes play a central role in shaping urban land governance, yet their impact on climate change adaptation remains under researched, theorized, and debated. This roundtable will explore how dominant property regimes constrain effective and just adaptation. We will also explore how alternative property regimes, from customary, Indigenous, and informal practices to community land trusts, cooperatives, and conservation and rolling easements may enable socially-just and ecologically restorative adaptation.

Critiques of climate action increasingly highlight the inequity of climate investments and the potential for gentrification and displacement. Much as land ownership and property rights are central to racial capitalism and other forms of uneven development, property relations also shape who stands to benefit or suffer from investments in climate adaptation. And yet, property regimes are seldom at the center of research on planning and design for climate action.

Discussions of property within planning scholarship have long been dominated by two, often starkly separated, disciplinary areas: 1) policy-oriented analysis of planning law and land use regulation; and 2) critical theoretical inquiry into the roots and implications of uneven development. The looming imperative of widespread, large-scale climate adaptation demands new syntheses, joining these two lines of inquiry with other modes of analysis and intervention, including those associated with environmental and climate governance; hazard mitigation and post-disaster recovery; and urban design.

This roundtable will bring together researchers from across diverse sub-disciplinary perspectives and methodological orientations to chart a research agenda for governing land and property for a dynamic earth. The organizers will offer framing remarks outlining "the difficult character of property" (after Krueckeberg 1995 and Blomley 2017) for climate change adaptation, focusing on three problematic mismatches between characteristics of dominant 'Western' property regimes and the demands of effective and just adaptation. First, privatized property regimes treat landscapes as static where climate change has made their dynamism increasingly clear. Second, dominant property regimes are atomizing and fragmenting when climate adaptation demands collective action. Finally, privatized property regimes impose a universalizing commodity logic to land where just adaptation requires attention to place-based socio-ecological dynamics.

Roundtable participants and audience members will be invited to share insights from related research or case studies that expand or challenge the above framework.

Citations

- Blomley, Nicholas. "Land Use, Planning, and the 'Difficult Character of Property.'" *Planning Theory & Practice* 18, no. 3 (2017): 351–64.
- Krueckeberg, Donald A. "The Difficult Character of Property: To Whom Do Things Belong?" *Journal of the American Planning Association* 61, no. 3 (1995): 301–9.
- Lamb, Zachary, Linda Shi, Stephanie Silva, and Jason S. Spicer. "Resident Owned Resilience: Can Cooperative Land Ownership Enable Transformative Climate Adaptation for Manufactured Housing Communities?" *Housing Policy Debate*, 2022.
- McEvoy, Darryn, David Mitchell, and Alexei Trundle. "Land Tenure and Urban Climate Resilience in the South Pacific." *Climate and Development* 12, no. 1 (January 2, 2020): 1–11.
- Reale, Andreana, and John Handmer. "Land Tenure, Disasters and Vulnerability." *Disasters* 35, no. 1 (2011): 160–82.

Key Words: property, climate change, land tenure, adaptation, equity

Track 8 Individual Paper Submissions

RESIDENTIAL ZONING DIVISIONS AND ITS RELATIONSHIP TO HEAVY COMMERCIAL AND INDUSTRIAL ZONING

Abstract ID: 1020

Individual Paper Submission

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When Euclidean Zoning was first adopted in the United States, two of the four original categories of land use were residential. This established a distinction between single-family housing and multi-family housing from the start of zoning law. Society perceived multi-family housing as residences for people of a lesser class, likened to parasites by the Supreme Court. This resulted in Euclidean zoning models treating multi-family residences as a more intense land use, paired more often with commercial and industrial districts than single-family residences. As housing affordability and inclusivity become a primary focus for planning departments around the country, an examination of the treatment of residential zoning districts becomes critical. This analysis challenges the ideology that multi-family zoning districts are a housing land use appropriately paired with higher intensity zoning districts such as heavy commercial and industrial districts (HIZONE) and instead supposes that all residential units of a city (and the people who reside in them) deserve equal protection from uses known to cause environmental hazards and lessen the quality of life, regardless of the density of development. This study examines the zoning codes of 13 case cities, identifies the delineation of housing types produced by the code, and seeks to determine if higher tiers of residential development are more likely to be within closer proximity of heavy commercial and industrial zoning than their lower density, single-family counterparts. As homeownership continues to be out of reach for many people in the US today, an analysis of the placement of more affordable housing types, such as apartment housing, is significant to the field of planning.

Citations

- Freund, David. 2007. *Colored Property: State Policy and White Racial Politics in Suburban America*. Chicago: University of Chicago Press.
- Maantay, J. (2002). Zoning Law, Health, and Environmental Justice: What's the Connection? *Journal of Law, Medicine & Ethics*, 30(4), 572–593. <https://doi.org/10.1111/j.1748-720X.2002.tb00427.x>
- Rothstein, Richard. *The Color of Law: A Forgotten History of How Our Government Segregated America*. First edition. New York London: Liveright Publishing Corporation, a division of W. W. Norton & Company, 2017.
- Shertzer, A., Twinam, T., & Walsh, R. P. (2014). Race, Ethnicity, and Discriminatory Zoning. NBER Working Paper Series, 52.

- Trounstein, J. (2018). *Segregation by Design: Local Politics and Inequality in American Cities*. Cambridge University Press. <https://doi.org/10.1017/9781108555722>

Key Words: Zoning, Social Justice, Equity, Housing

ZONING FOR AFFORDABILITY? THE EFFECTS OF UPZONING AROUND TRAIN STATIONS IN ZURICH

Abstract ID: 1077

Individual Paper Submission

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This paper studies the effect of an urban planning policy that increased the allowed density of residential housing near local train stations in the agglomeration of Zurich in Switzerland. Specifically, we evaluate the effect of this policy on new housing construction, rents, and the socioeconomic composition of the households living in the areas where the policy took place. We are interested in whether the policy led to the construction of new high-end housing around the train stations, spurring gentrification and displacement of poor households. Conversely, the policy could also help make housing close to the train stations more affordable by increasing the local housing supply. Overall, the policy we evaluate can be understood as a form of transit-oriented development, as it aimed at creating walkable, mixed-use neighborhoods with good access to public transit. However, since Zurich already possesses a well-developed public transit network, the planning department of Zurich chose to increase the amount of housing close to train stations instead of “classic” transit-oriented development of adding new train stations. As more and more cities around the world expand their public transit networks, increasingly many cities will pursue this strategy. Therefore, our evaluation of this type of planning policy in Zurich holds potentially interesting insights on the effects of such programs, which may be relevant for other cities and countries.

To evaluate the effect of the change in the zoning plans around the train station, we study 24 highly frequented train stations in the agglomeration of Zurich, defined as train stations with two or more lines in fare zones 1 and 2 of the public transit network. Of these 24 train stations, nine received a change in zoning plans towards higher allowed densities. To identify which train stations were treated in which year, we use harmonized annual parcel-level zoning plans from 1996 to 2019. We use GIS to identify on which plots a change in the zoning plan took place, focusing on the area within half a mile from the train station. To study the effects of the zoning plan changes on housing supply, we use the Swiss Housing Census. The census contains detailed data on all buildings. Additionally, we use geo-coded webscraped rent data for the years 2004 to 2020 to study rents, and geo-coded data on households including their income and when they moved into or away from the areas we study to study the socioeconomic composition of local households. This very detailed data enables us to evaluate the effects of the program accurately and over a long period of 25 years. We use descriptive evidence and an event study design to quantify the effects of the policy.

Our findings show that allowing for higher densities significantly increases the amount of new housing construction around the train stations. However, the changes in the zoning plans on average do not significantly increase or lower the rents households in the area around the treated train stations pay compared to non-treated train stations. Yet, there is considerable heterogeneity across train stations. This is an interesting finding, as it shows that changing zoning plans to allow for higher densities does not necessarily result in the construction of expensive high-end housing, but depending on the local circumstances can create more housing at a price that does not differ from untreated areas. Future results will also show whether the policy changed the composition of the households living around the train station towards richer or younger households. Thus, our paper holds interesting insights into what planners can expect when increasing the allowed density of residential construction around transit hubs in large cities.

Citations

- Padeiro, M., Louro, A., & da Costa, N. M. (2019). Transit-oriented development and gentrification: a systematic review. *Transport Reviews*, 39(6), 733-754.
- Dong, H. (2017). Rail-transit-induced gentrification and the affordability paradox of TOD. *Journal of Transport Geography*, 63, S. 1-10.
- Freemark, Y. (2020). Upzoning Chicago: Impacts of a zoning reform on property values and housing construction. *Urban Affairs Review*, 56(3), 758-789.
- Phillips, S. (2020). *The Affordable City: Strategies for Putting Housing Within Reach (and Keeping it There)*. Island Press.
- Glaeser, E. L., & Ward, B. A. (2009). The causes and consequences of land use regulation: Evidence from Greater Boston. *Journal of urban Economics*, 65(3), 265-278.

PLACELESSNESS AND PLACEMAKING: HOW DO CHARACTERISTICS OF PUBLIC PLACE AFFECT PEOPLE'S SENSE OF PLACE?

Abstract ID: 1079

Individual Paper Submission

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Urban lifestyles and spatial characteristics contribute to people's increasing insensitivity of place, which is coined by human geographers as placelessness — “the casual eradication of distinctive places and the making of standardized landscapes that results from an insensitivity to the significance of place” (Relph, 1979, Preface). This type of cognitive dissonance of place not only challenges urban planners to rethink cities that can deliver meaningful experiences for diverse groups of urban dwellers but intertwines with environmental and economic concerns. It is against this background that placemaking represents a paradigm shift in thinking about planning and design, from a primary focus on buildings and roads to a focus on public place and human activity (Courage et al., 2020).

Although some placemaking strategies are perceived as instrumental in creating public places that are distinctively meaningful to the inhabitants, less is known about how various characteristics of public places affect people's sense of place. Previous studies have systematically examined the factors contributing to the quality of public place (QOPP) and multi-dimensional metrics that capture people's sense of place. Based upon the QOPP factors suggested from previous research, confirmatory factor analysis has been conducted to generate a set of factors for spatially-sampled communities in the Beijing-Tianjin-Hebei metropolitan region, and regression analyses has been performed to identify factors related to human activity patterns (cellular data), people's evaluation of place identity (survey data), and people's sense of attachment (interview and survey data). A technical framework has been applied for the collection and analysis of the large spatial dataset for the study (Dang & Wang, 2021). Explicit consideration has been given to urban-rural differences in the study area and spatial autocorrelation in the spatially explicit dataset by employing a hybrid spatial sampling method (Kim & Li, 2021). Preliminary findings indicate that people's sense of place is a complex construct that is influenced by a range of public place characteristics. This ongoing regional-scale research effort contributes to the theoretical debates on how planning and design may transform placeless urban space into vibrant and socially cohesive communities in developing countries.

Citations

- Courage, C., Borrup, T., Jackson, R. M., Legge, K., Mckeown, A., Platt, L., & Schupbach, J. (2020). *The Routledge Handbook of Placemaking* (Routledge International Handbooks) (1st ed.). Routledge.
- Dang, A., & Wang, F. (2021). Information Technology Methods for locality preservation and inheritance of settlement cultural landscape. *Indoor and Built Environment*, 30(4), 437–441. <https://doi.org/10.1177/1420326x21989829>
- Kim, J. H., & Li, X. (2021). Building more housing near transit: A spatial analysis of residential densification dynamics. *Transport Policy*, 114, 15–24. <https://doi.org/10.1016/j.tranpol.2021.08.018>
- Relph, E. C. (1976). *Place and Placelessness*. Pion.

Key Words: placemaking, spatial data, place identity

PERCEPTIONS TOWARDS UPZONING: A PARCEL-LEVEL ANALYSIS OF SENTIMENT TOWARDS THE MINNEAPOLIS 2040 PLAN

Abstract ID: 1086

Individual Paper Submission

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As cities across the country struggle with rising housing affordability challenges, a number of municipalities have upzoned their residential areas to allow for increased built capacity. In 2019, Minneapolis made headlines when it became the first major city in the United States to eliminate single-family zoning and allow triplexes in residential areas throughout that city. While an existing body of scholarship has examined how individual and neighborhood-level factors influence sentiment towards specific high-density housing developments, minimal research has explored public perceptions towards land use reforms that systematically allow for greater density, such as jurisdiction-wide upzonings (Einstein, Glick & Palmer 2019; Pendall 1999; Trounstein 2021; Whittemore & BenDor 2019). To begin to

address this gap in the literature, we qualitatively coded hundreds of public comments received about the Minneapolis 2040 Plan, identifying the degree to which comments were supportive or opposed to the Plan. After assembling a unique parcel-level database, we conducted a multinomial logistic regression model to explore how sentiment towards upzoning varied based on parcel and neighborhood-level characteristics. As additional cities consider upzoning residential areas as a way to push back on exclusionary zoning, this project aims to help planners and policymakers understand nuanced public perceptions towards upzoning based on neighborhood conditions.

Citations

- Einstein, K. L., Glick, D. M., & Palmer, M. (2019). *Neighborhood defenders: Participatory politics and America's housing crisis*. Cambridge University Press.
- Pendall, R. (1999). Opposition to housing: NIMBY and beyond. *Urban affairs review*, 35(1), 112-136.
- Trounstein, J. (2021). You Won't be My Neighbor: Opposition to High Density Development. *Urban affairs review*, 10780874211065776.
- Whittemore, A. H., & BenDor, T. K. (2019). Opposition to housing development in a suburban US County: Characteristics, origins, and consequences. *Land Use Policy*, 88, 104158.

Key Words: Zoning, Upzoning, Densification, Housing, Land Use

YIMBY DIVIDED: A QUALITATIVE CONTENT ANALYSIS

Abstract ID: 1087

Individual Paper Submission

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An established body of scholarship frames land use conflicts as schematically divided between pro-development “growth coalitions” and groups of anti-development civic activists known as “NIMBYs” (Einstein et al., 2019; Molotch, 1976; Pendall, 1999). This dynamic has been upended by the arrival of “YIMBYs”—activists who advocate for additional housing production—onto the land use scene (Tapp, 2021; Wyly, 2021). YIMBY activists and organizations have played important roles in recent land use policy shifts, especially in California. However, minimal scholarship has directly examined these new actors, nor their relationship to NIMBYs. We leverage a unique online data source to examine YIMBYs, starting from their conflictual relationship with NIMBYs. Using a qualitative coding process, we investigate how a large sample of self-identified YIMBYs discussed NIMBYism, and the arguments they used to respond to NIMBY critiques. We find that commenters responded in two ways: either attacking the personal motives of NIMBYs or countering NIMBYism through specific policy proposals. We further find that YIMBYs—or at least the group of YIMBYs that we studied—are surprisingly ideologically diverse, displaying divergent attitudes toward deregulation, housing supply, and rent control, among other issues.

Citations

- Einstein, K. L., Glick, D. M., & Palmer, M. (2019). *Neighborhood Defenders: Participatory Politics and America's Housing Crisis*. Cambridge University Press.
- Molotch, H. (1976). The City as a Growth Machine: Toward a Political Economy of Place. *American Journal of Sociology*, 82(2), 309–332. <https://doi.org/10.1086/226311>
- Pendall, R. (1999). Opposition to Housing: NIMBY and Beyond. *Urban Affairs Review*, 35(1), 112–136. <https://doi.org/10.1177/10780879922184310>
- Tapp, R. (2021). Introducing the YIMBYs: Renters, housing, and supply-side politics in Los Angeles. *Environment and Planning C: Politics and Space*, 39(7), 1511-1528.
- Wyly, E. (2021). YIMBY: the latest frontier of gentrification. *International Journal of Urban and Regional Research*.

Key Words: YIMBY, NIMBY, zoning, housing, land use conflict

A LOCAL PERSPECTIVE ON MULTI-LEVEL GOVERNANCE OF FARMLAND: TRANSFORMATION OF SOCIAL CAPITAL IN A JAPANESE AGRARIAN COMMUNITY

Abstract ID: 1117

Individual Paper Submission

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Local communities often complement formal institutions to enable local participation and facilitate learning and negotiations among stakeholders for more sustainable land use planning (Siiba, Adams, and Cobbinah 2018). Historically developed in a place-based context, these communities offer a field for intimate observation and learning on local ecological processes and allow for policy alignment to environmental changes on a finer scale (Berkes 2009). At the same time, they entail social processes on the ground where stakeholders share culture, norms and identity and spiritually connect to place, giving rise to social capital that can help mobilize local resources and promote collective action towards a common vision (Dressel et al. 2020). However, land use outcomes are contingent on complex interactions between social, ecological, and institutional conditions across scales, requiring multi-level perspectives for planning (Nenadovic and Epstein 2016). In this regard, different forms of social capital – including bridging (between heterogeneous groups) and linking (to organizations at larger scales) besides bonding among the locals – have been proposed as what can altogether effect local-level collective action and transmit its efficacy across scales and levels (Dressel et al. 2020). Complementary roles of these different forms have also been suggested to better manage shocks, referring to the responses to the COVID-19 pandemic (Wong and Kohler 2020).

This paper explores the roles of local communities in (re)configuring different forms of social capital to govern farmland use in the context of agricultural abandonment in Japan. Local agrarian communities have traditionally served as a lowest-level agency for collective action to implement agricultural policy. Even with the recent introduction of farmland banking, in which semi-governmental intermediaries at the prefectural level are deployed to bypass local negotiations and promote tenancy on a larger scale, local communities have played a critical role in decision making and implementation for farmland aggregation, sometimes serving as a de-facto gatekeeper of entries of new farmers. Nevertheless, the place-based context of these communities has been drastically changing. Following the continued shrinking and aging of farm population, many agrarian communities now comprise a handful of aged farmers, whereas most constituents do not have intimate and tangible connection to farmland. Furthermore, the COVID-19 pandemic has made considerable socio-economic impacts on these communities, changing frequency and modes of human-nature and human-human interactions. If social capital of agrarian communities has essentially built on intimate interactions of people and farmland in locality, how does the change in the place-based context affect the ways in which local communities configure social capital? How does such change influence the roles of local communities in facilitating sustainable land use planning?

This study takes a case study approach to delve into the change in the process of governing farmland, considering the change in farmers' place connection and its impacts on social capital. It focuses on a local community that has served as an institution to facilitate collective management of agricultural infrastructure (including farmland) for land-extensive farming for rice production. Drawing on a panel study of over 25 farmers (including both those engaging in farming and landowners disengaging from farming) for the period between 2016 and 2022, it examines how their subjective connection to place has changed over time and if any such change has affected their social relationships in managing agricultural infrastructure and planning farmland use. The study points to the increasing reliance on bridging and linking social capital to productively manage farmland, while suggesting that place connection remains as a key to forge and enhance bonding social capital within the community. The paper contributes to delineating the relationships between different forms of social capital and provides implications for multi-level governance for sustainable land use planning.

Citations

- Berkes, Fikret. 2009. "Evolution of Co-Management: Role of Knowledge Generation, Bridging Organizations and Social Learning." *Journal of Environmental Management* 90 (5): 1692–1702. <https://doi.org/10.1016/j.jenvman.2008.12.001>.
- Dressel, S., Maria Johansson, G. Ericsson, and C. Sandström. 2020. "Perceived Adaptive Capacity within a Multi-Level Governance Setting: The Role of Bonding, Bridging, and Linking Social Capital." <https://doi.org/10.1016/j.envsci.2019.11.011>.
- Nenadovic, Mateja, and Graham Epstein. 2016. "The Relationship of Social Capital and Fishers' Participation in Multi-Level Governance Arrangements." *Environmental Science & Policy* 61 (July): 77–86. <https://doi.org/10.1016/j.envsci.2016.03.023>.
- Siiba, Alhassan, Ellis Adjei Adams, and Patrick Brandful Cobbinah. 2018. "Chieftaincy and Sustainable Urban Land Use Planning in Yendi, Ghana: Towards Congruence." *Cities* 73 (March): 96–105. <https://doi.org/10.1016/j.cities.2017.10.015>.
- Wong, Anna S. Y., and Jillian C. Kohler. 2020. "Social Capital and Public Health: Responding to the COVID-19 Pandemic." *Globalization and Health* 16 (1): 88. <https://doi.org/10.1186/s12992-020-00615-x>.

Key Words: Land use planning, Social capital, Local communities, Agricultural land policy, Multi-level governance

WHAT GAVE RISE TO CHINA'S LAND FINANCE?

Abstract ID: 1120

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The first two decades of the 21st century witness an unprecedented development of China's city regions, most of which are buttressed by massive infrastructure development. While it is well known that the land finance practice, or *tudi caizheng*, helped Chinese local governments capture land value for financing infrastructures, few studies seriously explain how the land finance practice took its shape. How did the Chinese local governments create such an institutional tool to control land and capture land value? What are the factors shaping the financial arrangements that the city governments pledge on future land value to borrow funds for building infrastructures?

This study systematically investigates the origin and development of China's land and infrastructure institutions. Borrowing the methods of process tracing and 'semi-negative case' study from political science, this study observes a three-decades evolution of China's 37 city regions' land and infrastructure development institutions. It concludes that the institutions are determined by five factors, i.e., the central government's policy, local government's development strategy, local government's administrative reform, the competition of land control between city government and land occupiers, and the local financial resources. This study also provides an insight to the regional differences in China's land finance practices. This research reveals that the emergence and development of China's land finance practices stem from an enduring and meticulous efforts of central policymaking, local strategy-making and administrative reform. This discovery contradicts the dominant belief that China's land finance practice is a by-product of a 1990s' fiscal-federalist reform. It will provide new Chinese references for countries in Asia and other parts of the world in making urban development policies.

Citations

- Xu, N. (2019). What gave rise to China's land finance? *Land Use Policy*, 87.
- Ingram, G. K., & Hong, Y. (2012). Value capture and land policies. (G. K. Ingram & Y. Hong, Eds.). Lincoln Institute of Land Policy.
- Wu, F. (2021). The long shadow of the state: financializing the Chinese city. *Urban Geography*, 1–22.
- Pan, F., Zhang, F., Zhu, S., & Wójcik, D. (2017). Developing by borrowing? Inter-jurisdictional competition, land finance and local debt accumulation in China. *Urban Studies*
- Bennett, A., & Checkel, J. T. (2014). *Process tracing: From metaphor to analytic tool*. Cambridge University Press.

Key Words: land value capture, infrastructure financing, China, city-region development, historical institutionalism

A GREEN WALL LIMITING FUTURE OUTWARD EXPANSION OF CANADA'S LARGE METROPOLITAN AREAS

Abstract ID: 1126

Individual Paper Submission

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Average metropolitan-wide densities have grown over the last three decades in Toronto and Vancouver, Canada's first and third largest metropolitan areas. This is often attributed to proactive urban planning following design principles of Transit-Oriented Development and New Urbanism, as well as general urban infill and intensification as growth strategies. In addition, the protection of non-urban land from development may also be a cause of densification; the outward expansion of Canada's largest metropolitan areas may be running up against a wall of protected green space. This protected non-urban area includes land designated for use as parks, greenways, watersheds, ecological reserves, conservation areas, and natural heritage areas. In addition, there is a substantial amount of land used for agriculture, and protection of that agricultural land from conversion to urban uses. Canada's provincial governments legislate protection of farmland from urban expansion to varying extents (Alterman, 1997; Connell, 2021) but there has been little in the way of research considering the effect of farmland preservation combined with other types of land protection, or the effects of those protections on actual or potential expansion of those metropolitan areas. In Vancouver since the early 1970s, the agricultural land has protected under the auspices of a provincially legislated reserve of agricultural land, and in metropolitan planning it has in the past been referred to together with the natural area as a green zone (Tomalty, 2002). In Toronto since the late 1990s, agricultural land has been protected together with natural lands (particularly the Niagara Escarpment) to form a "green belt" that was expanded in the early 2000s (Burchfield et al, 2015).

Spatial data on the protected land comprising these protected green zones is available from a variety of government sources. However, the data has not been synthesized to enable comparisons between metropolitan areas, municipalities, or provinces. The first of this paper's objectives is to assemble data and to compare remaining

developable land, with different types of protection, in Canada's three largest metropolitan areas (Montreal, Toronto, and Vancouver) as well as in metropolitan areas bordering Toronto (i.e. Barrie, Guelph, Hamilton, and Oshawa) and Vancouver (Abbotsford-Mission). Research on Portland's well-researched urban growth boundary suggested that it caused "spillovers" into adjacent areas (Jun, 2004) and analysis of adjacent metropolitan areas in Canada will be used to address the possibility that this has already occurred or has the potential to occur in the future. The second objective is to estimate the land available for future urban development, using satellite data showing the most recent extent of the built-up areas and estimating the unbuilt land that is not part of the protected green zones.

While spatial data on protected land area is available, the strength of the legal protection at present, and in the future, is uncertain. Most parkland and conservation area owned publicly is unlikely to be developed. However, the case of agricultural land which is owned privately it is different. As the quantity of developable land decreases and the price of developable land increases, there is mounting pressure. This paper compares the amount of potential land available for future urban development based on different scenarios for the removal of protection of agricultural land.

This paper is the first to quantify multiple types of protection of non-urban land in multiple cities within Canada, and provides evidence that restricting building on the edges of metropolitan areas is associated with densification. Given the strong emphasis of recent urban planning on densification, this research suggests that strong protection of non-urban land from conversion to urban uses can play a key role in helping planners and their communities achieve greater densification and related benefits.

Citations

- Alterman, R. (1997). The challenge of farmland preservation: lessons from a six-nation comparison. *Journal of the American Planning Association*, 63(2), 220-243.
- Burchfield, M., Kramer, A., & Guyadeen, V. (2015). *Growing pains*. desLibris.
- Connell, D. J. (2021). The Quality of Farmland Protection in Canada: An Evaluation of the Strength of Provincial Legislative Frameworks. *Canadian Planning and Policy/Aménagement et politique au Canada*, 2021, 109-130.
- Jun, M. J. (2004). The effects of Portland's urban growth boundary on urban development patterns and commuting. *Urban Studies*, 41(7), 1333-1348.
- Tomalty, R. (2002). Growth management in the Vancouver region. *Local Environment*, 7(4), 431-445.

Key Words: greenbelt, farmland, Canada, metropolitan, preservation

A GLOBAL PERSPECTIVE ON LAND USE REGULATIONS AND INFORMAL SETTLEMENTS

Abstract ID: 1128

Individual Paper Submission

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This paper examines the relationship between land use regulations and housing outcomes, especially housing affordability and informality. The relationship between land use regulations, enforcement and informal housing outcomes is fraught with potential idiosyncrasies rooted in their specific contexts. Local institutions, cultures, stages of economic development, geographical topography, political orientations and historical legacies are all factors that could influence and shape informal housing outcomes. Competing jurisdictions within the local metropolitan region can also complicate the process by which housing outcomes are determined. Notwithstanding such considerations, the empirical results reported here underline several key messages. Using a unique and important database of 191 metropolitan areas from all regions of the world, it assesses whether there are consistent emergent patterns from a global perspective that may in turn be useful for informing policy on land use regulations in specific locales and contexts.

With so much diversity within regions, it is striking that regional fixed effects would explain more than half the variance in the prevalence of informal settlements across this diverse collection of cities. This suggests that there is indeed a "continental divide"; that Latin America and the Caribbean, sub-Saharan Africa, Southeast Asia, and so on, are in fact meaningful lenses through which to understand urban development patterns. On the other hand, there is also reason to believe that much of these regional effects may be linked to the degree of urbanization, as those regions whose cities had the highest shares of informal settlements were also the regions with the lowest levels of urbanization and growing recently and faster. This again underscores the dynamic nature of the relationships, suggesting that what on the surface appears to be a regional effect, may in fact be based more fundamentally on the stage of urbanization and the way in which this urbanization is occurring.

The empirical results point to a number of striking conclusions. Empirical evidence from across the globe underlines the dynamic nature of the interaction between land use regulations and informality. In the long run, the evidence

strongly suggests that more restrictive land use regulations lead to more rapid growth in informal settlements. This result conforms with prior literature that emphasizes the exclusionary effects of land use regulations. As more restrictive regulations are applied, households find themselves with fewer options outside the informal sector. This phenomenon is accentuated during periods of rapid urbanization. But from a static perspective, the situation looks quite different over the short run, since cities with more stringent land use regulations tend to have fewer informal settlements, and this finding is strengthened further when those land use regulations are coupled with active enforcement.

Citations

- Heikkila, Eric and Julia Harten (2020), “Can land use regulation be smarter? Planners’ role in the informal housing challenge”, *Journal of Planning Education and Research*, vol. 40
- Monkkonen, Paavo and Lucas Ronconi (2013), “Land use regulations, compliance and land markets in Argentina”, *Urban Studies*, vol. 50(10), 1951–1969.
- Goytia, Cynthia, Guadalupe Dorna, Jonathan Cohen and Ricardo Pasquini (2015), “An empirical analysis of land use regulation determinants”, Working Paper, WP15CG1, Lincoln Institute of Land Policy.
- Heikkila, Eric and Michael Lin (2014), “An integrated model of formal and informal housing sectors”, *The Annals of Regional Science*, vol. 52(1), 121-140.
- Kallergis, Achilles, Shlomo Angel, Yang Liu, Alejandro Blei, Nicholas Sanchez and Patrick Lamson-Hall (2018), “Housing affordability in a global perspective”, Working Paper, WP18AK1, Lincoln Institute of Land Policy.

Key Words: informal settlements, land use regulations, housing affordability, international development, squatter settlements

IDENTIFYING RESIDENTIAL INFILL DEVELOPMENT AND ITS FACTORS: A DEEP-LEARNING IMAGE DETECTION APPROACH

Abstract ID: 1148

Individual Paper Submission

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Urban sprawl is a symbol of poor urban planning due to its many negative consequences including environmental factors (e.g., higher air pollution and loss of biodiversity), transportation factors (e.g., increased traffic congestion), public health factors (e.g., higher rates of obesity), and more (Liu and Meng 2020). As one of smart growth strategies, infill development has become a pleasing alternative to urban sprawl. Infill development refers to urban development in areas built up already (often near the center of cities and towns), which offer existing transportation and utility infrastructure that provide opportunities for repurposing or replacing existing buildings or parking lots (USEPA 2014; Jun et al. 2017). While infill development is widely accepted by cities as an alternative to urban sprawl, a very dearth of research has attempted to identify infill development and the factors affecting infill development. The broad definition of infill development, which often mix-used with redevelopment, revitalization, and/or mixed-use development. In reality, it is also not straightforward to identify the locations that infill developments occurred (Kim et al., 2022)

Filling this research gap, this paper explores residential infill development in the City of Los Angeles by employing a deep-learning model and multilevel logistic regression model. First, we developed a deep-learning algorithm identifying residential infill development by comparing the historical aerial photographs of properties between 2014 and 2017, a test dataset. Then, we applied the deep-learning algorithm to another set of the historical aerial photographs of properties between 2016 and 2020, a training dataset, to detect residential infill development. Next, using the outputs of the training dataset as the dependent variable (i.e., infill development=1; non-infill development=0), we constructed a multilevel logistic regression model that examines factors affecting residential infill development. In the multilevel logistic regression model, we included the physical conditions of the properties (e.g., lot size and distance to bus stop) and the characteristics of neighborhoods at which the properties are located (e.g., racial composition and income level) as level-1 and level-2 independent variables, respectively. The multilevel logistic estimates show that both the property- and neighborhood-level characteristics are related to residential infill development. The findings of this paper will help cities identify infill development more efficiently. Also, the findings will help planners take appropriate actions and regulations that promote residential infill developments in the areas where there are higher benefits to reduce the negative impacts of urban sprawl.

Citations

- Farris, T. J. 2001. The Barriers to Using Urban Infill Development to Achieve Smart Growth. *Housing Policy Debate*, 12 (1): 1–30.
- Kim, D., Shim, J., Park, J., Cho, J., and Kumar, S. 2022. Predicting Residential Infill Deployment in the City of Los Angeles: Supervised Machine Learning Approaches. *Journal of Urban Planning and Development*. 148(1): 04021060.
- Liu, L., and Meng, L. 2020. Patterns of Urban Sprawl from a Global Perspective." *Journal of Urban Planning and Development*. 146 (2): 04020004.
- U.S. Environmental Protection Agency (USEPA). 2014. *Smart Growth and Economic Success: Investing in Infill Development*. Washington, DC: USEPA.

Key Words: infill development, residential development, deep-learning, smart growth

GOVERNING THE GREENBELT DEVELOPMENT IN CHINA'S MEGA-CITIES : THE CASE OF ZHANGJIABANG GREEN WEDGE IN PUDONG NEW DISTRICT, SHANGHAI

Abstract ID: 1179

Individual Paper Submission

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At the beginning of its birth, the traditional greenbelt was used as a management tool to control the growth of urban space (Sturzaker & Mell, 2017). But now a new generation of greenbelts are not only a tool to control urban growth, but also a green space which supports economic development, provide ecosystem services and construct regional identity (Amati,2008; Macdonald et al.,2021). After World War II, the greenbelt theory was widely spread from Britain to all over the world. As the earliest city to accept the western urban planning theory in China, Shanghai planned greenbelt in the Greater Shanghai Plan as early as 1946, and this concept of greenbelt has remained as an important spatial strategy in different versions of Shanghai's master plan after the founding of the People's Republic of China. In recent years, with the proposal of "Ecological Civilization" (sheng tai wen ming) and "Park City" (gong yuan cheng shi) movement, China's mega-cities are paying more and more attention to green space in urban areas. The planning, development and governance of greenbelt and green wedges have undergone transformation, facing a series of new challenges. Having reviewed both English and Chinese literature, the authors developed an analytical framework of "subject-object-tool-effect" (SOTE) to compare the different governance models of green belts. Firstly, this research delves into the comparative study on the governance model of five countries: Britain, the United States, Australia, South Korea and Germany, and argues that three major governance model of greenbelt has prevailed in both developed and developing countries: "top-down", "bottom-up" and "public-private partnership". Second, this research focuses on the governance model of greenbelt in Pudong New District, Shanghai. In the past three decades, the green wedges are considered as an important part of Shanghai's greenbelt and have been continuously constructed according to the planning ordinance, receiving well recognition in both its innovative governance model and physical form. Again, applying the SOTE analytical framework, this research looks into the governance model of Zhangjiabang Green Wedge for more nuanced understanding of how the governance model actually works in contemporary Chinese mega-cities. Using mixed methods including site investigation, literature review, face-to-face interview, questionnaire survey and spatial analytical methods, this research investigates the changing governance culture of Zhangjiabang Green Wedge from the interplay between major actors, different governance tools, and planning regulations, respectively. The preliminary findings reveal that: 1) The greenbelt in Pudong District, represented by Zhangjiabang Green Wedge, is featured by its complexity in physical form, social fabric and diverse stakeholders, raising a series of new problems and challenges in urban governance. 2) Under the background of decentralization, the governance model of Zhangjiabang Green Wedge is featured by fragmentation of urban space and diversification of stakeholders, which is similar to the bottom-up model in previous research. However, unlike the decentralized privatization regime in Western countries (Daniels,2010; Han & Go, 2019), the governance subject of Zhangjiabang Green Wedge is the local government and state-owned real estate company, and the purpose of development is not just for profit maximization, but a more sustainable governance model that balance economy, society and environment. Finally, this research discusses the possible vision towards a network-based governance model in China's megacities, providing policy implications for megacities in both developed and developing countries with similar institutional contexts.

Citations

- Sturzaker, J., & Mell, I. (2017). *Green belts: Past; present; future?*. Routledge.
- Amati, M. (2008). *Urban green belts in the 21st century*.
- Macdonald, S., Monstadt, J., & Friendly, A(2021). *Rethinking the governance and planning of a new generation of greenbelts*.
- Daniels, T. L. (2010). The use of green belts to control sprawl in the united states. *Planning Practice & Research*, 25(2), 255-271.

- Albert, T., Han, Min, Hee, & Go. (2019). Explaining the national variation of land use: a cross-national analysis of greenbelt policy in five countries. *Land Use Policy*, 81, 644-656.

Key Words: greenbelt, mega-cities, governance model, planning, China

REGIONAL SPRAWL, RACE, AND GREEN INFRASTRUCTURE: AN EMPIRICAL EXPLORATION IN SOUTHEAST MICHIGAN

Abstract ID: 1218

Individual Paper Submission

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Urban growth in many places worldwide continues to take the low-density development patterns often called urban sprawl. Definitions of sprawl typically include low population densities, auto-oriented transportation infrastructure, separation of land uses, and a prevalence of single family housing (Galster et al. 2001). Recently, U.S. sprawl has been documented in both the fast-growing sunbelt and in slower-growing Northeast and Midwest (Pendall, 2003). Although policy interest in sprawl has declined in recent years, it remains relevant due to its link with many problems like land consumption, social equity, local government budgets, air quality, traffic safety, and energy and water inefficiency, among others (Ewing and Hamidi, 2015).

Our paper contributes to newer research on the topic that moves beyond narrow studies of urban form to show how sprawl connects to other issues. In particular, our empirical analysis explores the relationships between sprawl, race and green infrastructure. Race has long been recognized as the backdrop for U.S. land use planning (Thomas and Ritzdorf, 1997), but too rarely analyzed in sprawl studies despite “part of the motivation and much of the effect of sprawl has been to segregate metropolitan areas racially.” (Baum, 2004, 14). Second, we investigate the detailed relationship between urban form and green infrastructure, since recent research has showed that communities can add both housing and tree canopy (Gounaridis, Newell and Goodspeed, 2020). We investigate both issues by focusing on change over time. In summary, our paper investigates the research question: what is the relationship between changes to urban form, forested landscapes, and racial demographics over time?

We investigate this question through a quantitative study focused on the 231 local jurisdictions within the seven-county Southeast Michigan region. Our analytical strategy exploits the high degree of municipal fragmentation to explore patterns across a wide range of community types. Our change analysis includes demographic data drawn from the 1990 and 2010 Censuses and novel land cover data describing forest cover and building footprints derived from remote sensing data collected in 2005 and 2015. Given our goal of exploring diverse relationships which exist among these variables across communities, our primarily analytical strategy is cluster analysis conducted among 11 variables describing key dimensions of demographic, built environment, and land use change.

Although the analysis phase is ongoing, preliminary results document the complex relationships among these variables. Although the fastest-growing communities generally have lower racial diversity, those with the highest diversity fall into several categories. Some racially diverse communities have seen housing unit growth, such as Superior township (68%) and Canton (71%). A few, such as Hamtramck, Ypsilanti, and Harper Woods have housing unit change close to zero. Most of these have had their share of white population decline by over 20%. A few communities have lower white population declines, such as Ypsilanti (-9%) and Ann Arbor (-10%) suggesting slower change trajectories. Among the 39 communities whose forested land increased over the study period, all but five also saw an increase in housing units over the same time period. Similarly, communities which saw some of the largest declines in housing units over the study time period, such as Highland Park (-33%) and Detroit (-14.8%) also saw decreases in forested land over a similar period (-0.75% and -5.6%).

Our study contributes to a richer understanding of what Baum called the “sprawl system,” illustrating that for communities in places without any state-level smart growth policy – which is typical across the U.S. – different trajectories of change are possible. By highlighting this diversity, we set the stage for further investigation of how local communities can pursue diverse, green, and compact communities through local planning initiatives.

Citations

- Baum, Howell S. 2004. "Smart Growth and School Reform What if We Talked about Race and Took Community Seriously?" *Journal of the American Planning Association* 70 (1):14-26.
- Ewing, Reid, and Shima Hamidi. 2015. "Compactness versus Sprawl: A Review of Recent Evidence from the United States." *Journal of Planning Literature* 30 (4):413-432.

- Galster, George, Royce Hanson, Michael R. Ratcliffe, Harold Wolman, Stephen Coleman, and Jason Freihage. 2001. "Wrestling Sprawl to the Ground: Defining and measuring an elusive concept." *Housing Policy Debate* 12 (4):681-717.
- Gounaridis, Dimitrios, Joshua P. Newell, and Robert Goodspeed. 2020. "The impact of urban sprawl on forest landscapes in Southeast Michigan, 1985–2015." *Landscape Ecology*.
- Pendall, Rolf. 2003. *Sprawl Without Growth: The Upstate Paradox*. Center on Urban and Metropolitan Policy. Brookings Institution.

Key Words: Smart Growth, Race, Urban Sprawl, Green Infrastructure

THE SOCIOECONOMIC IMPLICATIONS OF VACANT URBAN LAND: A STUDY ON VACANT PARCELS IN NEIGHBORHOODS OF NEW YORK CITY

Abstract ID: 1307

Individual Paper Submission

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Vacant urban land has been an ubiquitous phenomenon for the U.S. cities. On one hand, vacant urban land often conveys negative images of urban decline and contributes to a series of socioeconomic problems, including high local crime rates, property devaluation, urban poverty, and local government financial strains. On the other hand, vacant urban land is also viewed as the hidden treasure or fortuitous landscape in urban settings due to its potential for infill development and ecological services. Previous studies on vacant urban land are intercity level studies and have revealed the associations between urban vacancies and socioeconomic conditions at the city level. However, these studies have not fully explored and addressed associations at the neighborhood level. To explore how vacant urban land is associated with socioeconomic conditions at the neighborhood level, this research chose the 59 community districts in New York City as the study sample. The land-use inventory dataset used in this research is the PLUTO dataset, a GIS-based dataset retrieved from the NYC Planning Department. Moreover, the demographic data in this research are from the NYC Youth and Community Development Department, and the economic data are from the NYC Finance Department. The above datasets were merged based on geographic information. Clustering effects of vacant parcels and associations between the vacant land ratio and critical socioeconomic indicators were examined at the neighborhood level through geographic analyses and OLS regression models. This research shows how socioeconomic factors are associated with vacant urban land at the neighborhood level, and suggests that these associations are not entirely identical to conclusions of previous intercity studies. To be more specific, this research shows that the racial diversity indicator positively affects the vacant land ratio at the neighborhood level, which is consistent with previous intercity studies. Nevertheless, this research also shows that both the poverty rate and unemployment rate are negatively associated with the vacant land ratio at the neighborhood level, which is the opposite of what previous intercity studies have shown. The findings of this research not only can contribute to the urban land management, land-use planning, and municipal regulations related to vacant urban land, but also may restructure urban land-use systems and change governments' orientations of vacant urban land.

Citations

- Bowman, A. O., & Pagano, M. A. (2004). *Terra Incognita: Vacant Land and Urban Strategies*. Georgetown University Press.
- Newman, G., Park, Y., Bowman, A. O. M., & Lee, R. J. (2018). Vacant urban areas?: Causes and interconnected factors. *Cities*, 72(October 2017), 421–429.
- Rahman, M. F., Murukannaiah, P., & Sharma, N. (2020). Predicting the Influence of Urban vacant lots on neighborhood property values. *CEUR Workshop Proceedings*, 2557, 1–16.
- Stern, M., & Lester, T. W. (2021). Does Local Ownership of Vacant Land Reduce Crime?: An Assessment of Chicago's Large Lots Program. *Journal of the American Planning Association*, 87(1), 73–84.
- Nassauer, J. I., & Raskin, J. (2014). Urban vacancy and land use legacies: A frontier for urban ecological research, design, and planning. *Landscape and Urban Planning*, 125, 245–253.

Key Words: Vacant urban land, Urban Sustainability

THE IMPACT OF ZONING ON BROWNFIELD DEVELOPMENT POTENTIAL: LAND SALE EVIDENCE FROM HONG KONG

Abstract ID: 1312

Individual Paper Submission

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Empirical evidence has shown that the sales of brownfields are frequently deterred not only by technical or financial difficulties, but also by institutional obstacles, such as zoning. Conventionally, governments enact land-use regulations to minimize the negative externalities of incompatible land uses and to ensure environmental quality. Scholars have provided empirical evidence that brownfields are often sold at a discounted price than greenfields. A question remains to be answered is to what extent regulatory restrictions (e.g., zoning) on land use affects brownfield transactions in the private market. On the one hand, in the absence of zoning, land owners may not be subject to regulatory restrictions imposed by the government, thus being relatively flexible in operating certain activities on the site. Such flexibility of land uses may allow a price premium during sales than sites that are subject to zoning plans. On the other hand, land-use regulations are likely to reduce the market value of individual properties due to constraints on development.

Although Hong Kong's urbanization rate is close to 100% in terms of population, its built-up land accounts for only 25% of the entire territory, with the 75% undeveloped and mostly preserved as country parks. Still, vacant land sales among private parties have been quite active, many of which involve non-agricultural land in the rural area. Our research questions are: (1) Between land parcels that are covered by zoning plans and those that are not, how much does zoning affect their prices? and (2) Between brownfields and greenfields, how do different types of zones promote land sales? To answer these questions, we plan to employ several difference-in-differences regression models, relying on panel data, which includes 2,100 parcels sold in 2019, among which 15.4% are brownfields and 4% not covered by any zoning plans.

Citations

- Grout, Cyrus, Andrew J. Plantinga, and William K. Jaeger. 2014. "Pay or Waive: An Economic Assessment of Property Owner Compensation Laws in the United States." *Review of Environmental Economics and Policy* 8(1): 103-119.
- Henneberry, David M. and Richard L. Barrows. 1990. "Capitalization of Exclusive Agricultural Zoning into Farmland Prices." *Land Economics* 66(3): 249-258.
- Howland, Marie. 2010. "The Private Market for Brownfield Properties." *Cityscape: A Journal of Policy Development and Research* 12(3): 37-54.
- Wernstedt, Kris, Peter B. Meyer, and Anna Alberini. 2006. "Attracting Private Investment to Contaminated Properties: the Value of Public Interventions." *Journal of Policy Analysis and Management* 25(2): 347-369.

Key Words: Zoning, Brownfield, Land-use regulation, Land prices, Hong Kong

BEYOND WORDS: WHY AND HOW SETTLERS RETURN LAND TO NATIVE NATIONS

Abstract ID: 1361

Individual Paper Submission

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The growing trend of organizations in the United States offering land acknowledgement statements that recognize Native peoples as traditional stewards of local land begs the question: what about the land? Native peoples offer numerous rationales for the return of land to their sovereign control in a movement gaining attention as #Landback. Most settlers (a collective term for non-Natives) in the US likely never even contemplate the idea of Native peoples regaining control of land beyond existing reservations. Yet, unbeknownst to most people, individual settlers, non-profits, land trusts, churches, and even governments agencies across the US have or are transferring land ranging in size from tiny plots to extensive tracts to Native nations.

Native scholars and activists clearly and forcefully state their rationales for #Landback. They detail legal rights based in treaties, laws, and court cases. They describe ancestral, spiritual, and ethical conceptions of land as a relative, conceptions that go beyond common Western notions of land as something to dominate or steward. They also argue that most Native nations treat the land more sustainably than private and public landowners in the US, while recognizing that exceptions exist. The Black Hills of South Dakota exemplify the damage #Landback aims to reverse. Settlers have degraded the ecosystem through mining, grazing, and sprawling development. Adding insult to injury, sacred mountain Tunkasila Sakpe Paha is now Mount Rushmore. Meanwhile, Non-Native scholars, policy makers, and professionals in land policy, planning, and management have paid scant attention to #Landback. If taken seriously, #Landback challenges the dominant ethos in the US of land as something to 'use.' In turn, it rejects the exploitation of land for short-term, individualized economic gain, which is widely recognized as a key source of wealth in the US and as a core driver of climate change, racial injustice, and wealth inequity. Thus, successful examples of #Landback have profound implications for reconciling historic oppression of Native peoples and charting a path to a livable future with a sustainable economy, healthy ecosystems, and increased equity.

This paper arises from an ongoing project exploring four research themes: 1) settler motivations to return land; 2) mechanisms of land transfer; 3) barriers to land transfer; and 4) impacts of #Landback, including whether land

management differs after transfer. The research design consists two phases: 1) a synthesis of the literature on #Landback and a summary of the results of a scan of instances of #Landback across the United States [Focus of this paper]; and 2) matched pairs of #Landback initiatives selected to enable comparison across and within regions of the country, the size and types of parcels transferred, and the individuals and organizations involved, among other characteristics [Ongoing research for future paper].

This research sheds light on core features of the #Landback movement, including its geographic distribution, variations in characteristics and motivations of settlers; and patterns in other features of land transfers (e.g. size, timing, existing land use, etc.). The preliminary findings offer insights of interest to scholars and practitioners alike, although the findings perhaps raise more questions than they answer.

Citations

- Dunbar-Ortiz, Roxanne. Not "A Nation of Immigrants": Settler Colonialism, White Supremacy, and a History of Erasure and Exclusion. Beacon Press, 2021.
- Jojola, Ted. "Indigenous planning—An emerging context." *Canadian Journal of Urban Research*, 17, no. 1 (2008): 37-47.
- Porter, Libby, Hirini Matunga, Leela Viswanathan, Lyana Patrick, Ryan Walker, Leonie Sandercock, Dana Moraes et al. "Indigenous planning: From principles to practice." *Planning Theory & Practice* 18, no. 4 (2017): 639-666.
- Smith, Linda Tuhiwai. *Decolonizing methodologies: Research and indigenous peoples*. Bloomsbury Publishing, 2021.
- Wildcat, Daniel R. Red Alert!: Saving the planet with indigenous knowledge. ReadHowYouWant. com, 2010.

Key Words: #landback, settler, land use, Indigenous, Property Rights

A CONCEPTUAL FRAMEWORK FOR STUDYING AND CONTRIBUTING TO GREAT LAKES AND OCEAN COASTAL MANAGEMENT DECISION-MAKING

Abstract ID: 1410

Individual Paper Submission

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Great Lakes and ocean coastal shorelands are valuable resources both ecologically and socially, and they are desirable places to live, work, and play. Most are privately owned. Governments play an important role in managing the development and use of those privately owned shorelands to ensure adequate conservation of the natural and social resources they encompass. Natural scientists have demonstrated that imprudent shoreland use is yielding significant ecological harms to coastal habitats and growing risks to coastal properties, and they have called for improved public planning for those shorelands accordingly. Planning researchers have focused on improving plan-making methods and processes, but less so on improving plan implementation through coastal management activities like regulation. Both recognize the benefits of co-producing natural and social-scientific knowledge, but neither has situated fully the ways in which decision-makers' knowledge, capacities, and motivations interact to influence coastal management decision-making outputs and outcomes.

Drawing from and synthesizing multiple literatures, this paper presents a conceptual framework that will hopefully be useful to planning scholars as they study how to improve plan implementation through improved coastal management decision-making, and to natural scientists as they work to ensure their knowledge contributes meaningfully to that decision-making. The framework is set within the institutional arrangements that structure coastal management processes, and it highlights the ways in which key decision-maker attributes—their collective knowledge, capacities, and commitments—influence decision-making actions and outputs. In addition to the coastal shoreland management policy domain, this framework should be useful in other land use policy and governance domains as well, especially those characterized by settings subject to both strong development pressures and high ecological and social risks, such as floodplains and the wildland-urban interface.

Citations

- Beatley, Timothy. 2009. *Planning for Coastal Resilience: Best Practices for Calamitous Times*. Washington, D.C.: Island Press.
- May, Peter J., Raymond J. Burby, Neil J. Erickson, John W. Handmer, Jennifer E. Dixon, Sarah Michaels, and D. Ingle Smith. 1996. *Environmental Management and Governance: Intergovernmental Approaches to Hazards and Sustainability*. London, UK: Routledge Press.

- Norton, Richard K., Stephen Buckman, Guy A. Meadows, and Zachary Rable. 2019. Using simple, decision-centered, scenario-based planning to improve local coastal management. *Journal of the American Planning Association* 85(4):405-423.
- Norton, Richard K., Nina P. David, Stephen Buckman, and Patricia D. Koman. 2018. Overlooking the coast: Limited local planning for coastal area management along Michigan's Great Lakes. *Land Use Policy* 71(2018):183-203.
- Sabatier, Paul A. (Ed.) 2007. *Theories of the Policy Process* (2nd Ed.). Boulder, CO: Westview Press.

Key Words: coastal management, plan implementation, decision-making, knowledge co-production

MAPPING THE ROLE OF NON-GOVERNMENTAL BRIDGING ORGANIZATIONS IN OPERATIONALIZING STORMWATER GREEN INFRASTRUCTURE IN RESIDENTIAL NEIGHBORHOODS.

Abstract ID: 1446

Individual Paper Submission

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Stormwater best management practices suggest transforming private yards into functional nodes of a decentralized landscape network (green infrastructure - GI) complementing municipal stormwater systems. This is particularly relevant in our case study in the Grand River Watershed - Ontario, where single-family properties occupy around 60% of residential developments. However, such a decentralization approach requires employing collaborative efforts beyond the capacity of municipalities. Residents' low uptake of municipal stormwater fee credit and GI rebate programs indicates that current incentives are insufficient in inducing homeowners to adopt GI interventions (e.g., rain gardens and barrels) in their yards. Besides the economic and technical constraints, evidence points to social conformity barriers combined with low acceptability of non-conventional yard landscapes. Therefore, an initial critical mass of homeowners adoption is required. Previous research investigated key actors' roles and perceptions. The need for collaborative frameworks incorporating key actors is a common finding of relevant works. However, a comprehensive understanding of the interrelationships between key actors within a decentralized stormwater GI network, including local communities, remains an understudied area. Our work explores barriers and drivers for developing GI collaborative planning frameworks in residential neighborhoods. Based on evidence from five municipalities (Kitchener, Waterloo, Cambridge, Guelph, and Hamilton) within the Grand River Watershed, we analyze the role of two non-governmental (Reep, and Green Venture) bridging organizations (BOs) in facilitating collaboration between key actors.

We combine qualitative inquiry with quantitative metrics to conduct a mixed-methods social network analysis. We invite city representatives for an online survey to develop socio-matrices representing established partnerships between key actors in stormwater GI residential programs. The matrices feed-in (1) a one-mode network analysis that examines direct connections in-between municipalities or links with other actors and (2) a two-mode network analysis to study the in-direct connections mediated via BOs. Additionally, we investigate implemented GI residential programs through semi-structured interviews with Reep and Green Venture members. The interviews are recorded and responses are transcribed to conduct detailed coding. Key themes deduced include (1) collaborative ties with a focus on reasons that allowed for the establishment of connections and their arrangements, (2) time frame of programs, (3) funding resources, and (4) outputs from each program. We use collected data to develop stratified maps visualizing the landscape of established connections. Quantitatively, we analyze the structural and relational measures of the identified collaborative ties, such as degree centrality, to quantify the number of connections attached to each actor. Finally, we run short interviews for a follow-on qualitative validation of the preliminary findings with cities' and BOs representatives.

Applying a network perspective suggests that long-term collaboration between multiple stakeholders, including single-family homeowners, is required to achieve flood resilience and protect water resources at the watershed scale. Our preliminary findings reveal the central role of BOs' in overcoming cross-scale barriers within institutional and social environments. Furthermore, BOs' role included connecting scientific entities and other relevant actors, such as this research. However, sustained funding is required to incorporate other potential functions of BOs, such as devising micro-financing models, and capacity building of city representatives.

This research contributes to planning literature addressing the integration of social and built infrastructures, e.g., socio-hydrology, through an empirically derived description of the role of non-governmental bridging organizations. Insights from the case studies could guide other mid-sized cities in southern Ontario towards aligning the interest of different actors, co-generation of environmental knowledge, and building the social capital required to achieve adaptive stormwater co-management at the watershed scale. As more relevant case studies emerge, extending the social network analysis to include other dimensions, such as trust networks, paves the way to identify best practices in collaborative planning for decentralized green infrastructure networks.

Citations

- Berkes, F. (2009). Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management*, 90(5), 1692–1702. <https://doi.org/10.1016/j.jenvman.2008.12.001>
- Rathwell, K. J., & Peterson, G. D. (2012). Connecting Social Networks with Ecosystem Services for Watershed Governance: a Social-Ecological Network Perspective Highlights the Critical Role of Bridging Organizations. *Ecology and Society*, 17(2). <https://doi.org/10.5751/es-04810-170224>
- Schiffman, L. A., Herrmann, D. L., Shuster, W. D., Ossola, A., Garmestani, A., & Hopton, M. E. (2017). Situating Green Infrastructure in Context: A Framework for Adaptive Socio-Hydrology in Cities. *Water Resources Research*, 53(12), 10139–10154. <https://doi.org/10.1002/2017WR020926>
- Bixler, R. P., Lieberknecht, K., Atshan, S., Zutz, C. P., Richter, S. M., & Belaire, J. A. (2020). Reframing urban governance for resilience implementation: The role of network closure and other insights from a network approach. *Cities*, 103, 102726. <https://doi.org/10.1016/j.cities.2020.102726>
- Stewart, J., & Tyler, M. E. (2017). Bridging organizations and strategic bridging functions in environmental governance and management. *International Journal of Water Resources Development*, 35(1), 71–94. <https://doi.org/10.1080/07900627.2017.1389697>

Key Words: Bridging organization, Green infrastructure, Social network analysis, Stormwater management, Residential yards

A LIVING DEFINITION FOR HISTORIC PRESERVATION WITH RESILIENCY IN MIND.

Abstract ID: 1504

Individual Paper Submission

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The built environment is crucial to the understanding and longevity of human history with how it highlights the change in design, structure, and technology developed over time. Historic preservation is currently defined by different schools of thought based on field of research and backgrounds. With coastal cities being threatened by sea level rise (SLR) and other natural hazards from climate change, it is important to find ways to protect both the significance of historic structures and the physical buildings, monuments, and sites important to human history. Within the most recent release, the National Oceanic and Atmospheric Administration (NOAA, 2022) projects around 10-12 inches of SLR within the next 30 years (NOAA, 2022). This is considered a century's worth of SLR condensed into one third of the time. Even though resiliency has been a part of psychology, construction, and philosophy for communities and their abilities to rebound from major events throughout history, there is no operational definition available for implementation. Once identified and defined, it can pave that way for better implementation of a process to replace existing insufficient definitions. A living definition could also be redefined over time to adjust to emerging needs and address issues pertaining to threats of natural hazards in historic areas, which help to preserve the human history (National Park Service, 2021).

This paper offers an approach for creating a versatile, yet practical definition and procedures for historic preservation that incorporates the parameters of resiliency. As such, a new definition allows local municipalities and communities to revisit their comprehensive plans and focus on preparing for increased threats from natural hazards due to climate change by prioritizing a resiliency-tailored policy and ordinances. It will also ensure that the social and political aspects are considered as well as the environmental, which are the three pillars to sustainability and are the core attributes of historic preservation (National Park Service, 2021). Recognizing a new perspective in historic preservation relies on recognizing that local communities and cultural landscapes are fragile and continuously evolving, thus protecting these resources preserves America's heritage and fulfills the goal of the historic preservation movement (Webb, 1987). As climate change has become an accelerant of communities instability, which also threatens national security and regional stability (American Security Project, 2012), it makes the case for advocating for more resiliency within preservation is greater than ever for communities to stay together and protect their heritage.

Our methodology focused on identifying the current definitions of historic preservation through content analysis to compare existing design guidelines in major US cities with designated historic preservation districts. The six cities, which were selected based on their location in various US climate zones, included St. Augustine, FL, Philadelphia, PA, New York City, NY, Boston, MA, San Antonio, TX, and San Francisco, CA. The review also included an analysis of the federal historic preservation guidelines by the Secretary of the Interior. The analysis showed a lack of references to the issue pertaining to climate change and the response to natural hazards that threaten historic structures and sites. The creation of new tools to better define terms for local and state governments that account for the protection of historic districts is needed. Resilience within historic design guidelines can ensure that the communities and

structures that are important to human history are preserved and protected for future generations. The unguided focus of preservation is not keeping up with the current philosophy and knowledge known about SLR and climate change as we continue to encounter more recurring natural hazards events.

Citations

- American Security Project. (2012). Part Two: Climate Change & Global Security. American Security Project. <https://www.jstor.org/stable/resrep05971>
- National Park Service. (2021, May 12). Historic Preservation and Sustainability. <https://www.nps.gov/subjects/historicpreservation/historic-preservation-and-sustainability.htm>
- National Park Service. (2021, May 21). What is Historic Preservation? - Historic Preservation (U.S. National Park Service). <https://www.nps.gov/subjects/historicpreservation/what-is-historic-preservation.htm>
- NOAA. (2022). Global and Regional Sea Level Rise Scenarios for the United States. 111.
- Webb, M. (1987). Cultural Landscapes in the National Park Service. *The Public Historian*, 9(2), 77–89. <https://doi.org/10.2307/3377331>

Key Words: Operational Definition, Resilience, Historic Preservation, Secretary of the Interior, Preservation Guidelines

NAVIGATING ENVIRONMENTAL JUSTICE IMPLEMENTATION AND SUPPRESSION IN GENERAL PLANS: LESSONS FROM CALIFORNIA'S SENATE BILL 1000

Abstract ID: 1573

Individual Paper Submission

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The field of urban planning still has an uneasy relationship with racial and environmental justice. Poor planning decisions and discriminatory practices, for example, continue to heighten the burdens of environmental contamination in low-income neighborhoods and communities of color, in comparison to white, wealthy communities. Since the 1980s, activists have garnered some scholarly and regulatory support for changes to policy and planning processes, but planners have been slow to adopt an explicit environmental justice framework in land use policies. Adopted in 2016 and implemented in 2018, California's Senate Bill 1000 law now calls for local jurisdictions to identify disadvantaged communities and to include environmental justice considerations (land use policies, analyses, and other methods to address environmental inequities) in their general plans. There is much to learn from the ways planners have navigated the implementation or suppression of this environmental justice mandate, and the challenges communities, and organizations have encountered along the way. More direction on how best to implement environmental justice is needed to guide jurisdictions undergoing comprehensive revisions of general plans. This study assesses the approaches to environmental justice that California local jurisdictions with high levels of cumulative environmental impact are developing in their general land use plans.

In this research, we use a variety of sources and approaches to explore the development and implementation of environmental justice considerations in general plans from communities around California. We use data from 33 interviews with planners (public and private sector), environmental justice leaders, and the state Attorney General's Office, as well as a document analysis of environmental justice considerations made in 35 general plans, to assess the scope of coverage and the barriers experienced. Results from this study indicate positive outcomes such as the development of environmental justice advisory committees, and the use of comprehensive analyses to guide equitable land-use decisions. However, results also highlight the challenges that include, a lack of political will (resistance and even hostility) toward environmental justice from planners and policymakers, and minimal resources to carry out measures. To address these challenges, we conclude our study with policy recommendations to bolster the work of planners across the nation that will be working with communities in developing environmental justice considerations in general plans.

Citations

- Schlosberg, D. (2007). *Defining environmental justice: Theories, movements, and nature*. OUP Oxford.
- Mendez, M. A. (2015). Assessing local climate action plans for public health co-benefits in environmental justice communities. *Local Environment*, 20(6), 637-663.
- Bullard, R. D. (1996). Environmental justice: It's more than waste facility siting. *Social science quarterly*, 77(3), 493-499.
- Brinkley, C., & Stahmer, C. (2021). What is in a plan? using natural language processing to read 461 California city general plans. *Journal of Planning Education and Research*, 0739456X21995890.

THE SHIFTING COALITION FOR LAND-USE AND TRANSPORT POLICY REFORM IN THE UNITED STATES

Abstract ID: 1608

Individual Paper Submission

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The game of urban land-use planning is a three-part affair within which municipal anti-growth, pro-growth, and social-justice coalitions compete (and occasionally collaborate), wrote Berke et al. in 2006. In the anti-growth corner are neighborhood associations representing homeowner interests who seek to limit development densities and defend the character—whether quasi-rural, historic, or simply exclusive—of their residential environments. Within this anti-growth coalition, homeowners are frequently allied with environmental groups concerned about the threat that development can pose to the ecological integrity of the landscape). The pro-growth coalition, earlier referred to as the “growth machine,” consists of firms and institutions that stand to profit monetarily from growth: developers, landowners, building-industry interests, downtown and suburban businesses, and chambers of commerce. The social advocacy coalition of low-income and minority populations and progressive activists strive for a more equitable distribution of material and environmental resources in cities and regions and focus on issues of affordable housing, environmental injustice, tenant protection, and access to economic opportunity.

In the intervening years, municipal planning and politics in the United States has seen the emergence of a “pro-housing” coalition, transforming the game of urban land-use planning from a three- to a four-part affair. The coalition seeks liberalization of rules, from parking regulations to single-family zoning, that have constrained housing development in accessible areas, pushing it to more remote locales. The coalition has seen a number of surprising successes since 2016 jurisdictions around the country. By 2021, the pro-housing framing had even given municipal land-use policy a partisan and national-level cast with Donald Trump arguing that Democrats will “eliminate single-family zoning, bringing who knows into your suburbs, so your communities will be unsafe and your housing values will go down,” while the Biden White House found that a “key factor driving limited housing supply is local zoning restrictions. For example, rigid single-family zoning, a practice linked with racial segregation, has prevented the construction of multi-family units, which would allow for higher density and an increased supply of housing.”

This paper outlines ideas common to the pro-housing coalition, together with internal controversies and their implications for vital municipal alliances. It argues that the planning “game” described by Berke et al., when expanded to all four coalitions, is also an apt structuring of municipal electoral politics in many U.S. cities and towns. Finally, it describes major families of policy reform that fit under the “pro-housing” label and how these ideas have played out in selected jurisdictions.

Citations

- Berke, Philip, and Kaiser, Edward J. *Urban Land Use Planning*. Urbana: University of Illinois Press, 2006.
- Bernstein, Jared; Jeffery Zhang; Ryan Cummings, and Matthew Maury. *Alleviating Supply Constraints in the Housing Market*. The White House, September 1, 2021. Blog. <https://www.whitehouse.gov/cea/written-materials/2021/09/01/alleviating-supply-constraints-in-the-housing-market/>
- Einstein, Katherine Levine; Glick, David M; Palmer, Maxwell. *Neighborhood Defenders: Participatory Politics and America’s Housing Crisis*. Cambridge: Cambridge University Press, 2019.
- Shaw, Randy. *Generation priced out*. University of California Press, 2020. *Construction in California’s Urban Areas*. Available at SSRN 3459823, SSRN.
- Trumm, Doug. *Trump’s Desperate Suburban Appeal Underscores Need for Fair Housing and Zoning Reform*. *The Urbanist*, July 31, 2020. <https://www.theurbanist.org/2020/07/31/trumps-desperate-suburban-appeal-underscores-need-for-fair-housing-and-zoning-reform/>

Key Words: housing, zoning, affordability, reform

ON A BETTER UNDERSTANDING OF LAND-USE REGULATION AND ITS RELATIONSHIP WITH INFORMALITY IN LATIN AMERICAN COUNTRIES

Abstract ID: 1626

Individual Paper Submission

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The incidence and growth of informal settlements in Latin America represent some of the most pressing public policy issues in the region. This paper explores the relationship that land-policy instruments have on urban informality and

on the supply of serviced land when a group of land-use management tools are consistently applied and enforced. This is the third paper of this research project and presents a set of empirical findings in relation to this complex topic of how to mitigate informal land development. The study develops a methodology to estimate a Dose-Response-Function (DRF), which suitably allows us for a better inspection into the association between the policy instrument and the policy target, in this case, the effect on mitigating informal land development, by increasing the share of households with connection to infrastructure service and better-quality housing and tenure conditions. The results from the empirical analysis start to suggest that the prospects of mitigation of informal development in cities hinge on the quality of their land policies foundation, which underpin not only the relevance of their existence but also enforcement, continuous support, and quality. The results suggest that these municipalities were better positioned to foster the size of their formal land and housing sector rather than the informal one. This seems particularly relevant even when controlling by all the other possible cofounders, like the sociodemographic condition of households and the effective implementation of other social housing programs. Nevertheless, we cannot generalize since the effects and their strength are different conditional on the instrument, its level of enforcement, years of implementation and quality.

Citations

- Kantor, P., and Savitch, H.V., (2005). How to Study Comparative Urban Development Politics: A Research Note. *International Journal of Urban and Regional Research* 29(1):135-151
- Smolka, M. O. (2013). *Implementing Value Capture in Latin America: Policies and Tools for Urban Development*. Cambridge, MA: Lincoln Institute of Land Policy.
- Monkkonen, P (2013) Urban land-use regulations and housing markets in developing countries: Evidence from Indonesia on the importance of enforcement. *Land Use Policy* 34 (2013) 255–264
- Alterman, R. (2012). "Land Use Regulations and Property Values: The 'Windfalls Capture' Idea Revisited." In N. Brooks, K. Donaghy, and G.-J. Knapp (eds.), *The Oxford Handbook of Urban Economics and Planning* (pp. 755–786). Oxford: Oxford University Press.
- Bertaud, A. and S. Malpezzi (2001) "Measuring the Costs and Benefits of Urban Land Use Regulation: A Simple Model with and Application to Malaysia," *Journal of Housing Economics*, 10, pp. 393-418.

Key Words: land use regulation, land management, informality, Latin America, affordability

DO LAND USE REGULATIONS HELP GIVE RISE TO INFORMAL SETTLEMENTS? EVIDENCE FROM BUENOS AIRES

Abstract ID: 1629

Individual Paper Submission

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This paper examines how land use regulations applied in the formal sector can influence housing outcomes in both the formal and informal sectors, using metropolitan Buenos Aires as our case study. The contributions of this paper are several-fold. At the theoretical level, our model specification provides a direct test of a crowding-out hypothesis by which binding land use regulations limit the absorptive capacity of the formal sector, thereby creating spillover into the informal sector. The theoretical base model is also extended to accommodate two alternative adjustment mechanisms: a Tiebout mechanism and an Alonso mechanism. At a methodological level, we employ two distinct yet complementary datasets. First, we conducted a survey of representative households living in informal settlements and in nearby formal areas. The other dataset is derived from an innovative Census matching technique applied to the National Expenditure Survey (ENGH) of Argentina. Notwithstanding these rather distinctive approaches, both methods yielded surprisingly similar results. Finally, at an empirical level, our findings confirm the existence of a rent premium for accessing the formal housing sector, consistent with our model predictions. Our results also show a strong interconnection between infrastructure provision and housing outcomes, which underscores the important role of infrastructure both in delineating formal sector housing developments and in delivering essential housing services, broadly defined. Our empirical findings also suggest that the Alonso adjustment mechanism may be prevalent in metropolitan Buenos Aires, in contrast to places like metropolitan Los Angeles, where the Tiebout mechanism is more prevalent.

Citations

- Heikkila, Eric J., and Michael CY Lin. 2014. "An integrated model of formal and informal housing sectors." *The Annals of Regional Science* 52(1): 121-140.
- Brueckner, J.K., and H. Selod 2009. "A Theory of Urban Squatting and Land-Tenure Formalization in Developing Countries." *American Economic Journal: Economic Policy* 1 (1): 28–51.

- Goytia, C., and G. Lanfranchi 2009. "Informal Neighborhoods in the Buenos Aires Metropolitan Region: Understanding the Effects of Land Regulation on the Welfare of the Poor." in S.V. Lall et al (eds.) *Urban Land Markets: Improving Land Management for Successful Urbanization*. Washington D.C.: Springer.
- Pendall, Rolf. 2000. "Local land use regulation and the chain of exclusion." *Journal of the American Planning Association* 66(2): 125-142.
- Heikkila, Eric J. and Julia Harten. 2019. "Can Land Use Regulations be Smarter? Planners' Role in the Informal Housing Challenge", *Journal of Planning Education and Research*

Key Words: land use regulation, zoning, Tiebout, Latin America, affordability

IS TRANSIT-ORIENTED DEVELOPMENT AFFORDABLE FOR LOW- AND MODERATE-INCOME HOUSEHOLDS?

Abstract ID: 1637

Individual Paper Submission

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The transportation and land use planning paradigm is shifting away from segregated land uses connected by highways and streets to more compact, mixed-use developments connected by high-quality transit. This new paradigm has brought transit-oriented development (TOD) to the fore, and researchers continue to highlight advantages of this style of well-integrated land use and transportation planning. As noted by Cervero (2004) and others, TOD has gained huge currency in the U.S. as a "means of promoting smart growth, injecting vitality into declining inner-city settings, and expanding lifestyle choices." TOD is promoted, in part, as a way to overcome "drive 'til you qualify" by offering multifamily housing that reduces housing plus transportation (H+T) costs (Hamidi and Ewing, 2015).

Housing costs are reduced through high-density land uses that amortize land costs over more units and uses. Transportation costs are reduced by providing alternatives to private vehicle ownership and use through complementary land uses proximate to transit. These savings accrue, in part, from the availability of high-quality transit and walking opportunities within mixed-use TODs and surrounding neighborhoods. Yet, ironically, all these good effects could be negated if these same accessibility advantages drive up rents to the point where they are no longer affordable for lower-income households. Accessibility provided by TOD helps drive up rents, increasing the H in H+T (Boarnet et al., 2017).

In this study, we explore the role of transit-oriented development in producing affordable housing. Using a list of eight criteria, we identified 85 TODs in 23 rail-served regions. By employing a variety of research techniques, we concluded that, on average, 20 percent of units in TODs are affordable to households earning between 50 and 80 percent of the Area-Median-Income (i.e., low- and moderate-income households, respectively). While 13 percent of the units are designated affordable housing (DAH), the remaining 7 percent are naturally occurring affordable housing (NOAH). Our results also show that the very fragmented and localized approach to affordable housing provision has resulted in an uneven distribution where 60 percent of the 85 TODs offer none or less than 10 percent of their units as affordable, while 14 percent of the TODs are 100-percent affordable.

Furthermore, both voluntary and regulatory measures adopted at city, county and state levels to incentivize the production of affordable housing have only limited impact, resulting on average in 5-10 percent of affordable units and rarely exceeding 15 percent. In addition, they produce units affordable to households earning about 80 percent of the AMI. Top-down regulatory measures seem to have a very limited impact on numbers of affordable units offered in TODs and are less effective than bottom-up voluntary and targeted programs, policies, and actions. This means that various forms of Inclusionary Housing Policies and Zoning (the way they are currently implemented) are ineffective in producing affordable housing in TODs.

In addition, not many of the projects we examined were subject to any affordable housing requirement put in place by the city/county/state when they were planned and built. Furthermore, even now half of the projects are not subject to any regulatory requirements regarding the production of income-restricted units. Generally, the projects that made the difference and highly impacted the overall affordability of a given TOD or region were the few ones that were 100-percent affordable. They were almost exclusively built by non-profit developers or CDCs using multiple sources of private and public funding and always included LIHTC funding. They produced housing affordable to households earning less than 60 percent of the AMI.

Citations

- Boarnet, M. G., Bostic, R., & Williams, D. (2017). Affordable Housing in transit-oriented developments: impacts on driving and policy approaches (No. CA17-2983). National Center for Sustainable Transportation.
- Cervero, R. (2004). Transit-oriented development in the United States: Experiences, challenges, and prospects (Vol. 102). Transportation Research Board.
- Hamidi, S., & Ewing, R. (2015). Is sprawl affordable for Americans? Exploring the association between housing and transportation affordability and urban sprawl. Transportation Research Record: Journal of the Transportation Research Board, (2500), 75-79.

Key Words: Transit Oriented Development, Affordable Housing, affordable housing provision

AN AGENT-BASED MODELING ON DIVERSIFIED URBAN EXPANSION IN THE AUSTIN-ROUND ROCK METROPOLITAN AREA

Abstract ID: 1668

Individual Paper Submission

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Scholars and policy makers have long interested in urban expansion and the environmental and social impacts associated with various patterns of spatial growth processes. Much of the existing literature has acknowledged the diverse urban expansion patterns among different counties and different metropolitan areas. Relatively, few has explored the heterogeneity of growth patterns within the metropolitan region. More often than not, heterogeneous urban expansion processes have been simplified as suburbanization that focuses on the expansion in urban peripheries while overlooking the changes in the central city. Research has provided inadequate empirical evidence on the divergent expansion patterns and their underlying driving forces focusing on within-metropolitan variations. This research uses the Austin metropolitan area in Texas, a booming metropolitan, as an example, to answer two questions: 1) how urban expansion patterns differ in the central city, City of Austin, and major suburban cities like Round Rock, Cedar Park, and 2) how transportation infrastructure and local development policies influence the urban expansion differently in the metropolitan area. To answer the first research question, this research, primarily using the landcover and imperviousness data from the National Landcover Database (NLCD), will first use the density gradient to map the spatiotemporal patterns of different cities. An agent-based modeling tool, SLEUTH, will be used to assist the analysis. The second question will be examined by using the statistical model with other ancillary data from the U.S. Census Bureau and the U.S. Bureau of Economic Analysis. This research can provide a detailed picture of metropolitan scale urban expansion and inform the policymakers to address the spatial growth disparity within the metropolitan region.

Citations

- Clarke, K. C., & Johnson, J. M. (2020). Calibrating SLEUTH with big data: Projecting California's land use to 2100. Computers, Environment and Urban Systems, 83, 101525. <https://doi.org/10.1016/j.compenurbsys.2020.101525>
- Clarke, K. C., Hoppen, S., & Gaydos, L. (1997). A Self-Modifying Cellular Automaton Model of Historical Urbanization in the San Francisco Bay Area. Environment and Planning B: Planning and Design, 24(2), 247-261. <https://doi.org/10.1068/b240247>
- Serasinghe Pathiranaige, I. S., Kantakumar, L. N., & Sundaramoorthy, S. (2018). Remote Sensing Data and SLEUTH Urban Growth Model: As Decision Support Tools for Urban Planning. Chinese Geographical Science, 28(2), 274-286. <https://doi.org/10.1007/s11769-018-0946-6>
- Burke, B. M. (2002). Who Sprawls Most? How Growth Patterns Differ Across the U. S. Population and Environment, 23(4), 428-434.

Key Words: Urban Expansion, Agent-Based Modeling, Spatial Disparity, Spatiotemporal Patterns

WHOSE INTERESTS? WHOSE PERSPECTIVES? CLIMATE ACTION ON THE GROUND

Abstract ID: 1738

Individual Paper Submission

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Coastal planners and residents face imminent adaptation decisions in response to climate-induced environmental change. Although existing policies are evolving to tackle weaknesses in past programs (Smith et al 2021), scholars

have argued that the current policies are insufficient for addressing the complex and changing situations that residents experience (Bronen, 2015). In this paper we view adaptation as a socio-political process that mediates how public officials, individuals and communities respond and adapt to social and environmental changes (Eriksen, Nightingale, & Eakin 2015). This paper explores differing and sometimes contradictory knowledge, values and goals that shape adaptation perspectives, policy and action in bayou communities along the Gulf of Mexico. Bayou communities are most closely associated with Cajun and Creole cultures, though in Louisiana there are also sizable populations of Native American residents, particularly in Terrebonne Parish where the bulk of this study was conducted. These communities are vulnerable to climate impacts such as sea level rise, land loss, and increased storm frequency and intensity, and technological disasters such as direct impacts from the 2010 BP Oil Spill, all of which have dramatically impacted day-to-day life in the region. We draw on interviews with 58 residents of Louisiana's lower bayou communities and 29 public officials, and an analysis of coastal and adaptation plans for the region. It asks the question: How do contradictions and differing perspectives embedded in adaptation plans and policies shape climate action in the lower bayou communities? The plans and policies that guide development recognize both in situ adaptation and relocation initiatives as necessary coastal adaptation strategies. Yet different plans and programs have contradictory values, goals and intended outcomes. Coastal residents draw attention to the contradictions when explaining their willingness to participate in initiatives including programs to assist people who are moving from the coast. Three core tensions include economic development for recreation versus residential development or removing development from parts of the region; the emphasis on private property ownership and compensation rather than the complex land tenure and land claims; and how culture is defined in ways that overlooks cultural lifeways and practices. The contradictions and how they impact coastal residents can reproduce some communities' disadvantage while assisting others and prevent effective action and resident participation. This presentation contributes to planning practice by highlighting how divergent perspectives by residents and planners influence public sector and resident action and decision-making. It contributes to planning theory by exploring various levels of meaning in planning documents with attention to the way their assumptions can further structures of disadvantage for residents. Currently, too little research assesses how effectively coastal policies address sea-level and other coastal changes (Gussmann and Hinkel 2021). Future research is additionally needed to understand what factors influence residents' acceptance of climate adaptation policy, and the outcomes of the adopted policies.

Citations

- Bronen, Robin. 2015. Climate-induced community relocations: Using integrated social-ecological assessments to foster adaptation and resilience. *Ecology and Society* 20 (3): 36-43.
- Eriksen, Siri H., Nightingale, Andrea J., & Eakin, Hallie. 2015. Reframing adaptation: The political nature of climate change adaptation. *Global Environmental Change*, 35, 523-533.
- Gussman, Geronimo; Hinkel, Jochen. 2021. A framework for assessing the potential effectiveness of adaptation policies: Coastal risks and sea-level rise in the Maldives. *Environmental Science and Policy* 115: 35-42.
- Smith, Gavin; Saunders, Wendy; Vila, Olivia; Gyawali, Samata; Bhattarai, Samiksha; Lawdley, Eliza. 2021. A comparative analysis of hazard-prone housing acquisition programs in US and New Zealand communities. *Journal of Environmental Studies and Sciences* 11(3): 392-403.

Key Words: climate change, local governance, climate adaptation policy

PATTERNS OF DEMOLITION AND THE POTENTIAL OF DECONSTRUCTION: UNDERSTANDING THE DETERMINANTS OF DEMOLITION TO INFORM SALVAGE AND DECONSTRUCTION SUPPORTIVE POLICIES IN ITHACA, NEW YORK

Abstract ID: 1809

Individual Paper Submission

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Demolition and redevelopment of buildings are implicated in several challenges in urban planning, among them addressing neighborhood change such as patterns of disinvestment, gentrification, and displacement. Previous scholarship on patterns in demolition activity has often focused on vacancy and abandonment in large cities with shrinking populations (Yin & Silverman, 2015). Another reason for analyzing patterns in demolition activity comes from the need to understand building material stocks and flows and potential for reuse and conservation of embodied carbon (Berrill & Hertwich, 2021, Heisel et al., 2022). Part of the motivation to study demolition patterns in Ithaca, New York is to inform the work of the Circularity, Reuse and Zero Waste Development (CROWD) network. CROWD consists of university researchers, community partners, and local government officials who are working together to advance salvage, reuse, and deconstruction as sustainable alternatives to demolition.

In this paper, we use spatial analysis to develop a geographically weighted regression model of demolition activity in

the City of Ithaca. Ithaca is located in Upstate New York and home to Cornell University and Ithaca College. We hypothesize that conditions particular to Ithaca such as high redevelopment activity in neighborhoods proximate to these institutions, demographic makeup of the city dominated by a floating student population, and recent adoption of Planned Unit Development overlay zoning, and other mechanisms to encourage redevelopment, distinguish this study from others that have explored demolition activity in Buffalo, New York and Quebec, Canada (Dubé et al., 2018; Weaver & Knight, 2018).

Data on demolition activity, extracted from historical data on building permits issued by the City of Ithaca since 1987 is combined with parcel/building level characteristics received from the Office of the County Tax Assessment to develop a dataset of redevelopment activity. We combined this with three categories of explanatory variables: building stock characteristics (e.g. property age), neighborhood characteristics (e.g. proximity to places of interest), and policy variables that underlie the patterns of neighborhood change (e.g. zoning). Preliminary analysis suggests that the intensity of demolition activity has remained relatively constant over the years and spatial shifts have occurred over the decades with a concentration of demolition activities in particular neighborhoods. Further, the spatial analysis identified the most significant associations between demolition and neighborhood change variables.

This spatial analysis of demolition activity was paired with a qualitative analysis of interviews with key developers, architects, salvage specialists, and demolition contractors to understand informal and formal efforts that have been employed to conserve buildings and building material through salvage, adaptive reuse, or deconstruction. In addition, the research included participatory action research and a pilot project involving salvage and deconstruction. This mixed methods research has implications not only on modeling demolition patterns within smaller cities, but also understanding the opportunities and challenges to adoption of local government policies that are supportive of salvage, adaptive reuse, and deconstruction activities in the context of a smaller college town.

Citations

- Berrill, P., & Hertwich, E. G. (2021). Material flows and GHG emissions from housing stock evolution in US counties, 2020–60. *Buildings and Cities*, 2(1), 599–617. <https://doi.org/10.5334/bc.126>
- Dubé, J., Desautniers, S., Bédard, L. P., Binette, A., & Leblanc, E. (2018). Urban residential reconversion through demolition: A land use model based on administrative spatial micro-data. *Land Use Policy*, 76: 686–696. <https://doi.org/10.1016/j.landusepol.2018.02.052>
- Heisel, F., McGranahan, J., Ferdinando, J., & Dogan, T. (2022). High-resolution combined building stock and building energy modeling to evaluate whole-life carbon emissions and saving potentials at the building and urban scale. *Resources, Conservation and Recycling*, 177(October 2021), 106000. <https://doi.org/10.1016/j.resconrec.2021.106000>
- Weaver, R., & Knight, J. (2018). Can Shrinking Cities Demolish Vacancy? An Empirical Evaluation of a Demolition-First Approach to Vacancy Management in Buffalo, NY, USA. *Urban Science*, 2(3), 69. <https://doi.org/10.3390/urbansci2030069>
- Yin, L., & Silverman, R. M. (2015). Housing abandonment and demolition: Exploring the use of micro-level and multi-year models. *ISPRS International Journal of Geo-Information*, 4(3), 1184–1200. <https://doi.org/10.3390/ijgi4031184>

Key Words: Demolition, Deconstruction, Spatial Analysis, Geographically Weighted Regression, Embodied carbon

HIGHEST AND BEST DISUSE: URBAN DECLINE, DEMOLITION, AND THE VALUE OF VACANT LAND IN DETROIT, MI

Abstract ID: 1882

Individual Paper Submission

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In April 2014, the Detroit Demolition Program (DDP) started the process of demolishing 40,000 publicly-owned vacant properties in Detroit, MI. City leaders framed demolition as a necessary response to the rampant mortgage and property tax foreclosure that destabilized and sank neighborhoods in the previous decade. For Mayor Mike Duggan and his allies, the DDP enabled reinvestment and the promise of highest and best uses. Vacant land could be profitable. Regional wreckers seized on the opportunity to secure lucrative demolition contracts expected to surpass \$250 million. For them, the DDP enabled a market and supply chain that could maximize their income while concentrating the financial benefits of demolishing into the hands of suburban and speculative interests. Rather than portending future value, vacant land was profitable now.

In this paper, I draw on five years of mixed-methods research on the DDP, its operations, and its accomplishments. I show how the demand for 10 million cubic yards of backfill material altered the use and value of vacant land in Detroit (Koscielniak, 2021). On average, each of the DDP demolitions will require 250 cubic yards of material. I track the flows of this material and the conditions of its production to illustrate how wreckers and haulers working in the

DDP transformed the city's derelict land into temporary logistical spaces within a regionalized demolition process. By dumping large volumes of backfill material on residential parcels scattered across Detroit, wreckers and haulers avoided costly testing and monitoring processes while also maximizing the returns from demolishing the city. This process of concealment was undertaken with the full knowledge of the DDP and AKT Peerless, the local environmental consultant contracted to formalize and regulate the program's backfill operations. By reproducing the illusion of compliance these contractors also furthered their interests and produced concrete earnings. Moreover, AKT Peerless persistently approved residential addresses in Detroit as backfill sources despite widely-available evidence contradicting that conclusion. These acts of subterfuge and manipulation illustrate the variety of economically-productive purposes vacant land can hold within a declining city. Rather than achieve highest and best uses, the DDP encouraged and accommodated highest and best disuses that continued the production of decline in Detroit (Seymour & Akers, 2022). Through the process of land-use debasement, wreckers and haulers extracted value from the city's neighborhoods while gilding the speculation and suburbanization that subverts any hopes for Detroit's equitable revitalization (Koscielniak, 2022). I conclude that concerns about gentrification in the city remain premature in light of the multifarious pathways available to generate income from the destruction of Detroit's built environment.

Citations

- Koscielniak, M.R. (2021). Post-crisis properties of demolishing Detroit, in *The new urban ruins: Vacancy, urban politics, and international experiments in the post-crisis city*, eds. Cian O'Callaghan and Cesare Di Felicianantonino.
- Seymour, E. & J. Akers. (2022). Decline-induced displacement: the case of Detroit. *Urban Geography*. <https://www.tandfonline.com/doi/abs/10.1080/02723638.2021.2008716?journalCode=rurb20>
- Koscielniak, M.R. (2022). The dirt on decline: Reproducing ruination through regional relations of demolishing Detroit, MI. *Capitalism Nature Socialism*.

Key Words: Decline, Detroit, Demolition, Racial capitalism

THE RISE OF REZONINGS: WHY ARE REZONINGS BECOMING COMMONPLACE IN CANADIAN CITIES AND WHAT SHOULD WE BE THINKING ABOUT THEM?

Abstract ID: 1885

Individual Paper Submission

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Rezoning, or more specifically, leveraging privately-initiated and project-specific rezoning applications as both an ad hoc and intentional strategy to add flexibility, secure public benefits, and/or expand regulatory control, has become a widespread and increasingly mainstream practice in North American cities. Building on data and case studies of Canadian cities, this paper documents the growing and evolving role of rezonings as a specific mode of regulatory practice and seeks to provide critical context and perspective of the how and why rezonings are on the rise and the implications.

Despite their centrality in contemporary planning practice, rezoning represent a gap in the evolving literature on zoning and regulation. At one level they are a pragmatic response to the inadequacies of zoning and to the pressure on local governments to adapt in a neoliberal era. They are an opening in the firmament of zoning practice, creating new opportunities for cities to leverage their land use authority to deliver tangible public benefits and to respond to the complexity of development in the contemporary city but also new vulnerabilities to capture by sophisticated development and community interests. Recognizing the controversial nature of rezoning, this paper provides data and insight into why they persist and proliferate, what they teach us about planning practice, how they are impacting urban development markets, and how they can be adapted to better serve public interests.

The paper uses a quantitative analysis of development approvals in cities in three Canadian metropolitan regions (Metro Vancouver, Edmonton Metropolitan Region and Greater Toronto) to document the extent and typology of rezoning practices (the rise). This foundational analysis is supplemented by policy review and interviews with local government officials to understand the context of rezonings, the intentions and the implications.

Citations

- Baird-Zars, B. (2020) "Zoning as a Verb: A Scaffolding for the Practice of Land Use Planning" ch. 9 in E. Sclar et al (eds) *Zoning: a Guide for 21st Century Planning*. New York: Routledge. pp. 175-199
- Hillier, J. (2000) "Going round the back? Complex networks and informal action in local planning processes" *Environment and Planning A*. 32: 33-54.

- Kim, M. (2020) “Upzoning and value capture: How U.S. local governments use land use regulation power to create and capture value from real estate developments” *Land Use Policy*. 95.
- Lehrer, U. and P. Pantalone (2018) “The Sky is Not the Limit: Negotiating height and density in Toronto’s condominium boom”, ch. 8 in K. Ward et al (eds) *The Routledge Handbook on Spaces of Urban Politics*. New York: Routledge. pp. 85-95.
- Millard-Ball, A. (2021) “Planning as Bargaining: The Causal Impacts of Plans in Seattle and San Francisco. *Journal of the American Planning Association*. 87(4): 556-569.

Key Words: Zoning, Rezoning, Regulation, Implementation

WETLAND WARS: WHY (SOME) ENVIRONMENTALISTS ARE FIGHTING THE PLANNED ECOLOGICAL RESTORATION OF LOS ANGELES’ LAST REMAINING WETLAND

Abstract ID: 1990

Individual Paper Submission

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The ecological restoration of urban greenspaces has been hailed as a key path to achieving sustainability and climate resilience (Klaus and Kiehl, 2021) and to promoting ‘biophilic cities’ (Beatley and Newman, 2013). But in highly degraded urban environments, a serious question exists as to which version of ‘nature’ could and should be restored.

The main purpose of the paper is to reveal the highly contested notion of the core ideas, practices and science of ‘ecological restoration’. About 95% of California’s coastal wetlands have either been destroyed or are highly degraded due to agricultural and urban development. The remaining 200,000 acres still fulfill important functions for threatened species, flood control, water filtration and carbon sequestration. In LA, 600 of the originally 2000-acre Ballona Wetlands remain as a much degraded yet ecologically and recreationally important open space. In late 2019, the state published a so-called ‘restoration’ plan that would remove millions of yards of infill and concrete levees from the channeled creek to create a new tidal wetland while also providing many new miles of elevated multi-use paths, thus creating a new natural landscape with high human use value that in fact differs substantially from what was historically present at this site, thus questioning the very notion of ecological “restoration”. My discourse analytical approach evaluates multiple stakeholders’ perspectives via document analysis and interviews. Many cast doubt on the sustainability, scientific value and the ‘correctness’ of the state’s eco-engineering-oriented large-scale restoration efforts (Doyle and Drew, 2008). Local environmental activists are pitted against scientists, policy makers, planners and other environmental experts, arguing that vulnerable species would be endangered and that current freshwater functions should be preserved instead. Yet others argue for ‘multispecies justice’ (Heise and Christensen, 2020).

Citations

- Doyle, M., Drew, C., 2008. *Large-Scale Ecosystem Restoration?: Five Case Studies From the United States, The Science and Practice of Ecological Restoration*. Island Press, Washington.
- Beatley, T., Newman, P., 2013. Biophilic cities are sustainable, resilient cities. *Sustainability* 5, 3328–3345.
- Heise, U.K., Christensen, J., 2020. Multispecies Justice in the Wetlands. *Ecozon Eur. J. Lit. Cult. Environ.* 11, 169–177.
- Klaus, V.H., Kiehl, K., 2021. A conceptual framework for urban ecological restoration and rehabilitation. *Basic Appl. Ecol.* 52, 82–94.
- Doyle, M., Drew, C., 2008. *Large-Scale Ecosystem Restoration?: Five Case Studies From the United States, The Science and Practice of Ecological Restoration*. Island Press, Washington.

Key Words: ecological restoration, discourse analysis, environmental conflict, eco-engineering, degraded wetland

SOCIAL TRUST AND FLOOD RISK: THE CASE OF DAR ES SALAAM

Abstract ID: 2036

Individual Paper Submission

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Trust is the foundation of legitimacy for public actions. Growing exposure to environmental and technological hazards is expected to erode trust in social institutions, thus threatening the legitimacy of public actors (Beck, 1992). This raises the question of what institutions will be trusted to govern cities in a climate changed world. While planners are often biased toward government agencies to provide solutions, many cities experience low government capacity to manage climatic risks, like flooding. In cities dominated by urban informality, such as Dar es Salaam, Tanzania, urban dwellers rely on a suite of social institutions to understand flood risk and take adaptive actions

(John, 2020; c.f. van Voorst, 2016 on Jakarta). By contrast, government agencies often rely on hydrological models and scenarios to design interventions into the flood infrastructure that can have a disruptive presence in flood-prone neighborhoods. In Dar es Salaam, Tanzania, levels of public trust in the government to provide this kind of top-down storm water management is low. Instead of relying on government, resilience can come from informal institutions like information sharing through social networks and protective action outside regulations (Satterthwaite et al., 2020). Dar es Salaam presents interesting case to explore this possibility because of its pervasive experience of flooding, low government capacity, recent programming on flood infrastructure and informal settlement upgrading.

In this context, we ask, which social institutions—including civil society, government, and friends and family—do residents of Dar es Salaam, Tanzania, trust (or not trust) to mitigate flood risk and provide recovery services? What drives trust in these social institutions? Specifically, what is the relationship between flood risk perceptions and political trust? How is trust distributed spatially? How does flood exposure mediate this relationship? And, to what extent does flood exposure affect patterns of trust in social institutions more broadly?

We present findings from mixed methods research drawing on a spatially random household survey (n=995) in six wards in Dar es Salaam, with follow up focus group and in-depth interviews. The research was conducted with individuals who are directly, indirectly, and not affected by flooding, and with varying socioeconomic statuses. We analyze the survey data using multivariate statistics and regressions to understand drivers of risk perceptions and trust in various social institutions. We also conducted spatial analysis to examine the spatial diversity of trust relationships in each neighborhood.

The survey finds that trust in government and civil society declines with flood exposure and trust in friends and family increases. Several factors mediate this relationship, including risk perceptions, household income, the type of tenure and perceived security, and flood exposure regime. Overall, we conclude that trust in associations and kinship groups represent substitute strategies to dealing with flood risks. The implication for practice is that public action for climate adaptation can gain legitimacy by supporting a range of trusted institutions, rather than focusing capacity building efforts solely on government agencies. These trusted institutions may vary across neighborhoods, demographic indicators, and flood exposure.

Citations

- Beck, U., 1992. Risk society: towards a new modernity, Theory, culture & society. Sage Publications, London?; Newbury Park, Calif.
- John, R., 2020. Flooding in Informal Settlements: Potentials and Limits for Household Adaptation in Dar es Salaam City, Tanzania. American Journal of Climate Change 09, 68.
<https://doi.org/10.4236/ajcc.2020.92006>
- Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., Mitlin, D., Patel, S., 2020. Building Resilience to Climate Change in Informal Settlements. One Earth 2, 143–156.
<https://doi.org/10.1016/j.oneear.2020.02.002>
- van Voorst, R., 2016. Natural hazards, risk and vulnerability: floods and slum life in Indonesia. Routledge, Taylor & Francis Group, London?; NewYork.

Key Words: political trust, climate adaptation, flooding, informal settlements

SHAPING PLANS THROUGH SUSTAINABILITY AND RESILIENCE CONCEPTS

Abstract ID: 2042

Individual Paper Submission

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The United Nations Human Settlements Programme (UN-Habitat) notes that “global agendas having resilience as a key concept will ensure that the call for sustainable and resilient cities leaves no one behind” (UN-Habitat 2018). This quote suggests that plans should integrate “sustainable development” and “resilience” to achieve more prosperous, equitable, and healthy living environments, and adapt to the dynamics of a changing climate.

States and cities are increasingly integrating sustainability and resilience concepts to shape plans. Examples include the New Jersey Sustainability and Resilience local planning program, Denver’s Climate Action and Sustainability Plan, and Toronto’s Resilience and Sustainable Action Plan. Such plans mark the emergence of a new type of comprehensive planning that integrates both concepts.

However, sustainability goals and resilience goals can be at odds with one another. Building compact urban forms

that support multiple dimensions of sustainability in floodplains is well-documented (Stevens, Berke and Song 2010). Critics argue that both concepts often overlook or minimize the impacts of plans on low-income communities, people of color, and migrant communities that face multiple forms of injustice (Anguelovski et al. 2016, Meerow et al. 2019). They maintain that insufficient attention is given to uneven power relationships and politics.

-In this paper, we address these critiques by presenting a new model of comprehensive planning that integrates sustainability and resilience concepts. We draw on the “sustainability triangle” model, originally conceived by planning scholar Scott Campbell (1996), that planners apply to understand the diverging priorities and conflicts among government, private and civic sector actors, and the various population groups who are affected by land use change. We extend the model to include the concept of “resilience,” which requires adaptive responses to a range of social, economic, and environmental disruptions, each of which are amplified by climate change, economic globalization, cultural shifts, and displaced populations. We illustrate the usefulness of an integrated sustainability and resilience model by examining how the Denver multi-scaled comprehensive plan simultaneously strives to reconcile conflicts and support land use policy solutions that advance sustainable outcomes and promote adaptive actions to impacts of climate change.

To foster the use and influence of plans we draw on the major conceptual traditions in planning—rational planning, collaboration, and urban design. We review the strengths and limitations of each tradition. Next, we discuss how the best features of each can be used to create and implement plans that progressively guide change that support resilience through adaptation after disruptions, and balance the multiple goals of the sustainability triangle model. We then illustrate how the practices are successfully used in Baltimore’s citywide comprehensive plan and neighborhood planning program aimed at creating resilient and sustainable places. The Baltimore case describes a capacity building planning process that primarily addresses the goals and priorities of poor, racially segregated neighborhoods. All planning activities apply an “equity lens” that guides a sustained interchange among neighborhood groups, technical analysis, and urban design proposals.

Citations

- Anguelovski, I., Shi, L., Chu, E., Gallagher, D., Goh, K., Lamb, Z., ... Teicher, H. 2016. Equity impacts of urban land use planning for climate adaptation: Critical perspectives from the global north and south. *Journal of Planning Education and Research*, 36(3), 333–348.
- Campbell, Scott. 1996. Green cities, growing cities, just cities? Urban planning contradictions of sustainable development. *Journal of the American Planning Association* 62: 296-312. DOI: 10.1080/01944369608975696
- Meerow, Sara. Pani Pajouhesh and Thaddeus R. Miller. 2019. Social equity in urban resilience planning, *Local Environment*, DOI: 10.1080/13549839.2019.1645103
- Stevens, Mark, Philip Berke, and Yan Song. 2010. Compact urban form: Resilient communities or American Pompeii’s. In *Floodplains: Physical Geography, Ecology and Societal Interactions*, Ed. Mark Alvarez: New York: Nova Science Publishers: 107-134.
- UN-Habitat. 2018. “Resilience.” <https://unhabitat.org/urban-themes/resilience/>.

Key Words: land use planning, urban resilience, sustainable development, equity, climate change

‘MAINSTREAMING’ THE MUNDANE: CONSTRUCTION PERMITTING PRACTICES AND FLOOD RESPONSES IN PERI-URBAN MUNICIPALITIES IN MEXICO

Abstract ID: 2056

Individual Paper Submission

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In the low-income outskirts of Guadalajara, seasonal flooding is both predictable and unexpected: every summer, a different set of low-income subdivisions become inaccessible for weeks at a time. Municipal public works departments respond with pumps, canals and berms, acknowledging that these are likely a stopgap against worsening storms and ongoing urbanization. Yet less is understood about the actions that municipalities take ‘upstream’ in the practices of permitting and subdivision review to prevent new construction and request shifts that mitigate the likelihood of flood damage to lives and property.

Drawing on fieldwork in three municipalities’ permitting sub-departments, this paper examines how daily practices of construction permit requirements, review protocols, processing times and exceptions shift in response to highly visible flooding disasters. Initial interviews with residents and municipal officials suggest that some localities carry on authorizing growth ‘as usual’, many have improvised and adapted ad-hoc patterns of permitting practice to both restrict new building and enable rapid reconstruction. Analyses of spatio-temporal patterns of newly-available permitting data from the past decade will hopefully clarify if and when these shifts in municipal practice translate to actually occurring change in the type and location of new growth.

The municipalities in peri-urban Guadalajara are not alone. Local governments struggle develop effective local action to prevent and mitigate urban flooding – the largest-scale impact of climate change and one that overwhelmingly occurs in cities of the global South (Guha-Sapir et al, 2022). The overlay of institutional and spatial analysis will ideally contribute to two identified gaps in knowledge. First, there is an acknowledged lag between flood adaptation goals and the everyday practices of planning policy (Hurlimann, Moosavi and Browne, 2021) and specifically land use tools administered by municipalities (Runhaar et al 2018), yet little exploration of how municipalities themselves are adapting the ‘mundane’ practices such as permits. Second, the unwritten informal yet routinized practices of land use practice are increasingly recognized as institutions (Singerman Ray, Baird-Zars and Sclar 2019) but remain little-explored, in particular in the Mexican legal and urban context (Rodríguez Valladares 2020) and in response to the broad mandates of climate adaptation planning.

Citations

- Guha-Sapir, Debarati, Regina Below and Phillipe Hoyois. EM-DAT: The CRED/OFDA International Disaster Database. www.emdat.be. Université Catholique de Louvain. Accessed 3/2022.
- Hurlimann, Anna, Sareh Moosavi, and Geoffrey R. Browne. “Urban Planning Policy Must Do More to Integrate Climate Change Adaptation and Mitigation Actions.” *Land Use Policy* 101 (February 1, 2021): 105188.
- Rodríguez Valladares, Norma. "Marcos legislativos, racionalidades político-económicas y ordenamiento territorial: La desarticulación sectorial y multinivel en México." *Revista de Geografía Norte Grande* 77 (2020): 11-29.
- Runhaar, Hens, Bettina Wilk, Åsa Persson, Caroline Uittenbroek, and Christine Wamsler. “Mainstreaming Climate Adaptation: Taking Stock about ‘What Works’ from Empirical Research Worldwide.” *Regional Environmental Change* 18, no. 4 (April 1, 2018): 1201–10.
- Singerman Ray, Rosalie, Bernadette Baird-Zars, and Elliott Sclar. "Analyzing zoning as an institution: Methods for scholarship and practice." In *Zoning*, pp. 246-263. Routledge, 2019.

Key Words: zoning, construction permits, implementation, flooding, adaptation

Track 8 Posters

EXPLORING THE IMPACTS OF INNOVATION DISTRICTS ON CIVIC INCLUSION, SOCIAL WELL-BEING, AND EQUITY, A CASE STUDY OF FORT WORTH MEDICAL INNOVATION DISTRICT, TX

Abstract ID: 1395

Poster

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During the last few decades, cities in the U.S. and worldwide have shown great interest in becoming more innovative to attract investment and fulfill their residents' needs. Accordingly, planners and policymakers have developed various urban models to promote innovation within urban areas. Innovation districts are among the most current and the fastest-growing development models discussed by scholars (Engel et al., 2018; Katz & Wagner, 2014) and considered by policymakers, city officials, and developers. Besides, the literature broadly discusses the economic benefits of innovation districts, such as an increase in the number of jobs (specifically highly-paying jobs), an increase in investment absorption (by attracting the talented workforce, start-ups, tech-based corporations, and headquarters), an increase in property value, an increase in demand for goods and services, and a rise to revenue (Engel et al., 2018; Katz & Wagner, 2014; Read, 2016).

Though existing studies on urban gentrification patterns have highlighted adverse effects of new development on communities in the form of displacement and loss of power, they have yet to consider residents' views on civic inclusivity, social well-being, and equity as well as policymakers' perspectives on these topics. Also, the potential negative externalities of innovation districts, such as social/economic inequities, racial inequalities, gentrification, displacement, and exclusion (Esmaeilpoorarabi et al., 2020; Stehlin, 2016) have rarely been discussed in the literature. Therefore, residents' perception of the new development, their awareness of its impacts on their life, and the extent of residents' inclusivity should be comprehensively studied. In addition, it is crucial to understand how policymakers consider and respond to the negative social impacts of innovation districts. This study aims to understand 1) What are the impacts of innovation districts on social well-being and equity? 2) How and to what extent are residents engaged (civic inclusion) in different stages, from developing the idea to operating the innovation districts? 3) What is the residents' perception of innovation districts' impacts on their life? And 4) How do

polymakers respond to the negative social impacts of innovation districts?

This study employs qualitative research methods and dives into this research puzzle in the context of the Fort Worth Medical Innovation District (FW-MID) in Texas. Our methodology includes two significant steps of data collection. The first step is "Document Retrieval/Document Review," conducted in the study's first phase. The next step (which completes the study's second phase) is to survey the FW-MID residents and interview city officials and developers. This phase is supported by the "ACSP Diversity & Inclusion Fellowship" to complement our results in providing more reliable findings regarding the negative social impacts of FW-MID on residents. The results of this phase will be added to the final version of the research.

In the study's first phase, we reviewed several related documents, including City council minute meetings and agenda, magazine articles and newsletter, and professional reports to evaluate the local residents' role and engagement level when developing the FW-MID. To this point, our findings reveal that, despite the great attention to the area's potential to become a thriving innovation district and the tremendous consideration of the future economic benefits of this innovation district, there is little evidence of engaging residents and public communities in different stages of developing the FW-MID. In its implication, the results of this study could provide insights and awareness for polymakers, planners, and developers regarding the social impacts of innovation districts on residents. Therefore, city officials and developers could use our results to consider both positive and negative externalities of these new developments before rushing to the decision-making stage and will include residents' opinions and preferences to mitigate the negative social impacts of innovation districts.

Citations

- Engel, J. S., Berbegal-Mirabent, J., & Piqué, J. M. (2018). The renaissance of the city as a cluster of innovation. *Cogent Business & Management*, 5(1), 1532777. <https://doi.org/10.1080/23311975.2018.1532777>
- Esmaeilpoorarabi, N., Yigitcanlar, T., Kamruzzaman, Md., & Guaralda, M. (2020). How does the public engage with innovation districts? Societal impact assessment of Australian innovation districts. *Sustainable Cities and Society*, 52, 101813. <https://doi.org/10.1016/j.scs.2019.101813>
- Katz, B., & Wagner, J. (2014). *The Rise of Innovation Districts: A New Geography of Innovation in America*. Metropolitan Policy Program at BROOKINGS, 34.
- Read, D. (2016). Case Studies in Innovation District Planning and Development. <https://www.naiop.org/en/Research/Our-Research/Reports/Case-Studies-in-Innovation-District-Planning-and-Development>
- Stehlin, J. (2016). The Post-Industrial "Shop Floor": Emerging Forms of Gentrification in San Francisco's Innovation Economy. *Antipode*, 48(2), 474–493. <https://doi.org/10.1111/anti.12199>

Key Words: Innovation Districts, Civic Inclusion, Social Equity and Well-being, Residents' Perception, Community Engagement

Track 9 – Food Systems, Community Health & Safety

Track 9 Individual Paper Submissions

EXAMINING THE EQUITY OF ACCESS TO HEALTH CARE: A COMPARISON BETWEEN SHANGHAI AND LOS ANGELES

Abstract ID: 1015

Individual Paper Submission

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Background:

Equity of healthcare has been discussed in various research fields and domains (Culyer and Wagstaff, 1993; Delbosc, and Currie, 2011; Neutens, 2015). Accessing healthcare services, especially hospitals, is recognized as an important factor affecting people's health (Guagliardo, 2004). However, the spatial disparities of hospitals' supply, people's demands, and transportation resources make uneven equity of accessing hospitals (Geurs and Van Wee, 2004). Moreover, the outbreak of covid-19 pandemic makes people realize the importance of rapidly accessing health resources (Kang et al., 2020). Although the measurement of geographical accessibility and the optimization of health services locations are widely discussed (Higgs, 2004), there lacks study comparing the access to healthcare facilities in different regions. This study analyzes the accessibility to healthcare in Shanghai and Los Angeles, and then compares the spatial equity and the social equity in accessing health care between those two typical metropolises.

Method:

This research applies the enhanced two-step floating catchment area (E2SFCA) and hotspot analysis to investigate the characteristics of accessing hospitals in Shanghai and Los Angeles in different travel modes. Then, we used the Lorenz curve and Gini index to compare the spatial equity and the social equity in accessing hospitals between Shanghai and Los Angeles.

Results:

The result of this research suggests that the 1) the access to health care resources in metropolis posed the similar patterns which shows a trend of distance decay from the city center to outward area. 2) low-income populations or people who live in the urban fringe had low accessibility to hospitals, this phenomenon performs identical in both two metropolises, whilst such magnitude in healthcare accessibility disparity varies across cities.

Conclusion:

This study explores the possible reasons behind the differences discovered in the result session from various perspectives. The findings of this research contribute to any public health research that utilize health care resource distributions. A future research in preparation is to explore the COVID-19 reaction from Shanghai and Los Angeles based on the findings of this study.

Citations

- Culyer, A.J. and Wagstaff, A., 1993. Equity and equality in health and health care. *Journal of health economics*, 12(4), pp.431-457.
- Delbosc, A., & Currie, G., 2011. Using Lorenz curves to assess public transport equity. *Journal of Transport Geography*, 19(6), 1252-1259.
- Neutens, Tijs, 2015. Accessibility, equity and health care: review and research directions for transport geographers. *Journal of Transport Geography*, 43(2), 14-27.
- Geurs, K.T., Van Wee, B., 2004. Accessibility evaluation of land-use and transport strategies: review and research directions. *Transport Geography* 12, 127-140.

- Kane, T. J., Riegg, S. K., & Staiger, D. O., 2006. School quality, neighborhoods, and housing prices. *American Law and Economics Review*, 8(2), 183–212.

Key Words: Health resource equity, Accessibility, Resource disparity

PLANNING AND AGRI-FOOD SYSTEMS - AN EVALUATION OF THE CAPACITY OF ONTARIO MUNICIPALITIES

Abstract ID: 1080

Individual Paper Submission

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This session will address the capacity of municipal planning departments to support local and regional agri-food systems. More specifically this session draws on research looking at capacity of municipal planning departments across the province of Ontario. Ontario is home to some of the best agricultural land in Canada and produces over 200 agricultural commodities. Municipalities are the most local level of government responsible for implementing provincial policy and making land-use planning decisions. The capacity of municipal planning departments has the potential to enhance or hinder local and regional agri-food systems.

Preliminary research focused on the Greenbelt region of Ontario revealed that planning department capacity is varied. For example, Oxford County and Huron County have eleven and nine planners respectively, while neither Dufferin County or Elgin County employ even one full-time planner. Varied capacity can also be seen in the types of programs, plans, and initiatives that municipalities take on beyond provincially mandated activities. Examples of this include: Halton Region's Rural Agricultural Strategy, Grey County's Ag 4.0 Conference, and the Agri-food Venture Center in Northumberland County, among others.

Varied municipal capacity affects the consistent implementation of provincial policy, the ability of municipalities to act proactively, and has implications for agri-food systems stakeholders. Findings from this research are relevant to planners across North America and speaks more generally to the role of the planning profession in supporting and facilitating local and regional agri-food systems that are vibrant, resilient, and robust.

Research Questions:

- How does the capacity of planning departments to support agri-food systems vary across the province of Ontario?
- What challenges do planning departments face when dealing with agri-food related priorities and issues?
- How does municipal capacity affect the implementation of rural and agriculture related provincial priorities and directives at the local and regional level?
- What strategies can be used to increase the capacity of municipalities to support agri-food systems?

Methods: Our research team has previously completed research looking at municipal capacity to support agri-food systems in 66 municipalities in the Greenbelt region of Ontario. Current research looks to expand this study to the rest of the province, including northern Ontario. Our findings are informed by a mixed methods approach including surveys, semi-structured interviews, document analysis, and secondary data sources. Case studies will be used to showcase the varied realities of municipal planning departments across the province.

Findings: Preliminary findings reveal that planning department capacity is varied across the province, not only in terms of staffing and budget, but also related to in-house expertise and knowledge related to agri-food systems. It is expected that data collection for this project will be complete in August 2022.

Relevance: Municipalities are the most local level of government responsible for land-use planning decisions in Ontario. Municipal decisions have the ability to enhance or hinder local and regional agri-food systems. These food systems are an important part of local and regional resilience, particularly in a context of increasing volatility and instability. It is critical that we understand the role and capacity of planning departments in supporting agri-food systems across regional geographies.

Citations

- Caldwell, W., Geschiere, E., Sousa, E., & Zink, R. (2021). Municipal capacity: A case study of Ontario's greenbelt to respond to emerging agriculture and agri-food priorities. *International Journal of Environmental Impacts*, 4(3), 243–261. <https://doi.org/10.2495/EI-V4-N3-243-261>
- Raja, S., Born, B. M. , & Russell, J. K. (2008). *A Planners Guide to Community and Regional Food Planning*. American Planning Association.
- Buchan, R., Cloutier, D., Friedman, A., & Ostry, A. (2015). Local Food System Planning: The Problem, Conceptual Issues, and Policy Tools for Local Government Planners. *Canadian Journal of Urban Research*, 24(1), 1–23.
- Buchan, R., Cloutier, D. S., & Friedman, A. (2019). Transformative incrementalism: Planning for transformative change in local food systems. *Progress in Planning*, 134, 100424. <https://doi.org/10.1016/j.progress.2018.07.002>

Key Words: agri-food systems, municipal capacity, Ontario, regional planning, rural communities

ECONOMIC RESILIENCE OF FOOD RETAIL BUSINESSES DURING COVID-19

Abstract ID: 1190

Individual Paper Submission

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This study investigates business-level economic and environment factors — business types, adapting design strategies, surrounding neighborhood characteristics — impacting food retail business continuity during the pandemic. The study conducts two waves of field audits for 921 businesses from 44 census block groups in Seattle, Washington, during the first two peaks of the pandemic. The field audits observe a 25% business closure rate in May and Jun 2020 and about a 15% closure rate in Nov and Dec 2020 and a variety of indoor and outdoor adapting design strategies. The study finds that businesses in walkable storefronts and food court areas have a higher chance of closing than those in strip malls, standalone buildings, and converted residential dwellings. Interestingly, design strategies shaped by health guidelines, such as the provision of sanitizers or distancing marks, were found to have no effect on the continuation of business operations. Design strategies could have potentially facilitated safe communication and interaction between businesses and their customers, including signage posting and the placement of counters at entryways, show more significant and positive effects. Relocations of workers and residents during the pandemic and the racial mix in the surrounding neighborhoods also affect the economic resilience of the food retail industry, as suggested by the effects of residential population density, job density, and percentage of non-Asian people of color. Findings of the study help identify businesses and neighborhoods that are economically vulnerable and provide guidelines for design strategies that strengthen the resilience of small businesses in the ongoing pandemic.

Citations

- Fu, X., Zhai, W., 2021. Examining the spatial and temporal relationship between social vulnerability and stay-at-home behaviors in New York City during the COVID-19 pandemic. *Sustainable Cities and Society* 67, 102757. <https://doi.org/10.1016/j.scs.2021.102757>
- Honey-Roses, J., Anguelovski, I., Bohigas, J., Chireh, V., Daher, C., Konijnendijk, C., Litt, J., Mawani, V., McCall, M., Orellana, A., Oscilowicz, E., Sánchez, U., Senbel, M., Tan, X., Villagomez, E., Zapata, O., Nieuwenhuijsen, M., 2020. The Impact of COVID-19 on Public Space: A Review of the Emerging Questions (preprint). *Open Science Framework*. <https://doi.org/10.31219/osf.io/rf7xa>
- Kumar, A., Mangla, S.K., Kumar, P., Song, M., 2021. Mitigate risks in perishable food supply chains: Learning from COVID-19. *Technological Forecasting and Social Change* 166, 120643. <https://doi.org/10.1016/j.techfore.2021.120643>
- Zhai, W., Yue, H., 2021. Economic resilience during COVID-19: An insight from permanent business closures. *Environ Plan A* 0308518X211055181. <https://doi.org/10.1177/0308518X211055181>

Key Words: food retail business, Economic resilience, pandemic, neighborhood, urban design

AGING PLAYFULLY: PLAY AS A PLANNING INTERVENTION TO SUPPORT OLDER ADULT WELLBEING

Abstract ID: 1229

Individual Paper Submission

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As people age, their physical and cognitive worlds can shrink as they become increasingly likely to experience impairment (physical, sensory, or cognitive) or reduced mobility (Myers et al., 2005). The academic and public health literature typically equates the reduction in older adult mobility and ability with heightened risks and barriers in the local environment. Interactions between physical and social environments and individual competencies can produce a limiting environment that can result in decreased physical and mental wellbeing (Lawton, 1970). If the interactions between physical and social environments and individual competencies can generate a limiting environment, the reverse may also be true - that through targeted intervention these components can interact to form an enabling environment for older adults. Age-friendly planning has emerged as a critical discourse for interventions to develop enabling environments by minimizing the risks associated with aging (O'Brien, 2014). While preventative measures are important, there is more to inclusive design than caution and access. Built and social environments could be developed to optimize opportunities for older adult wellbeing, not only to minimize risk. We contend that the conceptualization and practical realities of enabling environments can, and should, be extended to include proactively positive measures. Enabling environments can do more than minimize risk. They can encourage fun. They can generate play.

We propose that play, defined as spontaneous and creative behaviour, is an overlooked and underappreciated means to augment enabling environments and support older adult wellbeing. Play has only recently emerged as an urban design consideration capable of improving interactions and experiences with the built environment, and thus far is limited to the child-friendly context (Donoff & Bridgman, 2017). Our paper introduces a new conceptual framework of older adult sociospatial environmental wellbeing. Through an environmental gerontological perspective we draw on both the age-friendly and child-friendly literature to (1) conceptualize how the interrelationships between physical and social environments and individual competencies produce an environmental continuum spanning limiting to enabling environments and (2) consider how play as an intervention promotes positive interaction amongst an individual's physical and social environments and competencies, and in doing so, can generate new and reinforce existing enabling environments.

Using the conceptual framework as a guiding analytical tool, we examine the age-friendly community and aging-in-place models to delineate how play interventions can be integrated into existing models to improve the physical and mental health of older adults. In addition to outlining opportunities to integrate play into age-friendly designs and policies, we also explore the potential for play interventions to facilitate and bolster intergenerational engagement and relationships. The conceptual framework serves as a tool that can be used by planners and policymakers to reevaluate perceptions of older adult interaction with local environments. Moreover, by exploring aging and play through a planning lens, we advance a new direction in age-friendly planning while contributing to the existing discourse on older adult wellbeing, inclusive and equitable age-friendly environments, and play as an urban design consideration.

Citations

- Donoff, G., & Bridgman, R. (2017). The playful city: constructing a typology for urban design interventions. *International Journal of Play*, 6(3), 294–307.
- Lawton, M. P. (1970). Planning environments for older people. *Journal of the American Planning Association*, 36(2), 124–129.
- Myers, A. M., Cyarto, E. V., & Blanchard, R. (2005). Challenges in quantifying mobility in frail older adults. *European Review of Aging and Physical Activity*, 2(1), 3–21.
- O'Brien, E. (2014). Planning for population ageing: Ensuring enabling and supportive physical-social environments - Local infrastructure challenges. *Planning Theory and Practice*, 15(2), 220–234.

Key Words: Aging, Play, Age-friendly communities, Older adults

THE COMPLEXITY OF FOOD SHOPPING BEHAVIORS OVER THE COURSE OF THE PANDEMIC: ONLINE, IN-STORE, OR BOTH?

Abstract ID: 1233

Individual Paper Submission

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When the World Health Organization declared COVID-19 a pandemic in March 2020, household provisioning behavior was dramatically impacted as stay-at-home orders were enacted and stores and restaurants modified their hours, capacity, and policies. In response, consumers had to consider their risk tolerance while making decisions about when, where, and how often to shop for groceries. Initially, many changed locations and shopped less frequently (Shamin, et al., 2021). While many consumers embraced ordering prepared meals (e.g. pizza, Chinese food) online prior to the pandemic, they had been comparatively slower to adopt online ordering for fresh foods and other grocery items (Semuels, 2019). Whether by choice or necessity, many consumers tried e-grocery shopping for the first time in response to COVID, according to early studies (Bounie et al., 2020; Salon et al., 2021). However, information is lacking on how food acquisition behaviors have changed over the varying circumstances of the pandemic and the interplay between in-store and online shopping and the factors correlated with these behaviors.

In this study, we examine food shopping behaviors over the course of the pandemic using a novel dataset derived from a repeated, cross-sectional, online survey of consumers in five U.S. states: Arizona, Florida, Michigan, Oregon, and Washington. Data were collected over four waves between September 2020 and November 2021, enabling us to capture provisioning behavior at various stages of the pandemic as the virus intermittently surged and waned, and as vaccinations became widely available. The survey includes questions about household socio-demographics, composition, and resources, and shopping preferences and behaviors, including frequency, locations, and use of e-commerce and delivery, as well as barriers to access. The data are weighted to be representative of the states from which they were collected.

Our aggregate analysis demonstrates the considerable growth of online shopping adoption over the pandemic. Prior to 2020, consumers had been slow to adopt online grocery shopping—a 2019 Gallup poll found that only 5% of respondents were ordering groceries online for pick-up or delivery at least once a week (Jones & Kashanchi, 2019). Our results show a significant jump in use—24% of respondents indicated they were ordering groceries online at least once per week by early 2021. At the same time, in-store grocery shopping has varied with COVID incidence. Unsurprisingly, in-store grocery shopping rates experienced a major drop in the early days of the pandemic. These rates rebounded in early 2021 only to fall again with the surge of the Delta variant.

We will present additional findings from multivariate statistical analysis at the individual household level about these changes over the four waves of the survey; their associations with characteristics of the consumers, their location, and public policy; and the potential “stickiness” of those behaviors over the long term.

Results from this study are relevant for understanding the adoption of e-commerce for food shopping and the implications for transportation demand into the future. The trips generated from in-store and online shopping appear to be complementary as online shoppers generate 40% more food shopping trips than in-store shoppers. This suggests there will be a need to consider the sustainability impacts of the use of these technologies relative to their health, convenience, and accessibility benefits. Policy interventions may be necessary to manage curb space, ensure equitable access, and mitigate the negative environmental effects.

Citations

- Bounie, D., Camara, Y., & Galbraith, J. W. (2020). Consumers' Mobility, Expenditure and Online-Offline Substitution Response to COVID-19: Evidence from French Transaction Data (SSRN Scholarly Paper ID 3588373). Social Science Research Network. <https://papers.ssrn.com/abstract=3588373>
- Jones, J. M., & Kashanchi, S. (2019, August 20). Online Grocery Shopping Still Rare in U.S. Gallup. <https://news.gallup.com/poll/264857/online-grocery-shopping-rare.aspx>
- Salon, D., Conway, M. W., Silva, D. C. da, Chauhan, R. S., Derrible, S., Mohammadian, A. (Kouros), Khoeini, S., Parker, N., Mirtich, L., Shamshiripour, A., Rahimi, E., & Pendyala, R. M. (2021). The potential stickiness of pandemic-induced behavior changes in the United States. *Proceedings of the National Academy of Sciences*, 118(27). <https://doi.org/10.1073/pnas.2106499118>
- Semuels, A. (2019, February 5). Online Grocery Shopping Has Been Slow to Catch On—The Atlantic. <https://www.theatlantic.com/technology/archive/2019/02/online-grocery-shopping-has-been-slow-catch/581911/>
- Shamim, K., Ahmad, S., & Alam, M. (2021). COVID-19 health safety practices: Influence on grocery shopping behavior. *Journal of Public Affairs*, 21(4), E2624-N/a.

Key Words: Food shopping, e-commerce, consumer behavior, COVID-19, trip generation

CRITICAL FOOD POLICY LITERACY: CONCEPTUALIZING COMMUNITY'S FOOD POLICY ENGAGEMENT

Abstract ID: 1423

Individual Paper Submission

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Food policies should be informed by those who it intends to serve. Still, policy-making processes remain exclusive to specific voices, knowledge, and experiences. Food activists, organizations, and academia have worked to make policy processes inclusive by training communities in food policy, potentially increasing their food policy literacy.

Recently, attention towards food policy has been growing in part from food activists, local food policy councils, and other insurgent organizations engaged in food systems transformations. Over the last two decades, municipal-scale food policy has gained increasing attention from policymakers, international organizations, and community food activists.

Despite the growth in municipal food policy institutions (venues) that may become learning hubs and places to exchange information about how to strengthen and transform food systems in each context, food policy processes and policy tools remain foreign for many communities. Food policy literacy is impeded by limited access to usable or comprehensible knowledge and information, leaving communities outside of the policy decision-making table.

This paper maps scholarship that unpacks how people's literacy about food policy and systems is defined and understood. The review asks: How is literacy tied to food policy understood? What does (or, what could) it mean for an individual (or community) to be food policy literate? How can people's critical literacy tied to food policy transform food systems?

The ideas in this paper are drawn from a review of peer-reviewed literature. The primary databases utilized to retrieve the literature in this review were Web of Science, JSTOR, and Google Scholar. Articles were searched using a number of key phrases pertinent to food policy literacy. Articles written in English and published in peer-reviewed journals from 1990-to 2021 were included (from any geography). Ultimately, forty articles were reviewed and analyzed. Articles were broadly in the following two domains: a) food scholarship that dealt with food literacy, food policy, and food systems, and b) policy scholarship that dealt with policy literacy. These two bodies of scholarship were reviewed to elucidate key principles of critical food policy literacy, in conversation with critical literacies from Paulo Freire.

Existing literature has thoroughly defined food literacy (FL) and policy literacy (PL), but there is a limited number of articles defining food policy literacy (in fact, only one article in the author's search resulted in a paper that explicitly used the term 'food policy literacy'). Policy literacy left without inserting food, or food literacy without inserting policy will leave a lack of clarity or consensus about the knowledge/power relationships within food policy engagement.

This paper argues that making food policy processes, information, and training accessible to community actors can better prepare them to participate in, interpret, and control food system policies, especially at the municipal level. The paper is built on the premise that a clear understanding of food policies is a necessary, if insufficient, condition for communities' engagement in food systems policy formulation, planning, and implementation.

This paper proposes five principles for conceptualizing critical food policy literacy that supports food systems transformations, which are aligned with Freire's work. The paper suggests that efforts to promote food policy literacy must facilitate communities to: "read the world," "read the word," be critically aware of food policy processes and systems, learn contextually and through authentic practice, and enable people to negotiate and transform the world (their context) collectively.

These principles can be a starting point for theorizing, planning, executing, and testing food policy education and training efforts. People's lack of knowledge or awareness in food policy processes is not a reasonable justification for their exclusion. Instead, those engaged with food policy – including food system planners – should facilitate knowledge sharing with communities.

Citations

- Sumner, J. (2015). Reading the world: Food literacy and the potential for food system transformation. *Studies in the Education of Adults*, 47(2), 128-141. <https://doi.org/10.1080/02660830.2015.11661680>
- Freire, P., Ramos, M. B., Macedo, D. P., & Shor, I. (2018). *Pedagogy of the oppressed* (50th anniversary edition. ed.). Bloomsbury Academic.
- Raja, S., Clark, J. K., Freedgood, J., & Hodgson, K. (2018). In This Issue: Reflexive and Inclusive: Reimagining Local Government Engagement in Food Systems. *Journal of agriculture, food systems, and community development*.
- Vidgen, H. A., & Gallegos, D. (2014). Defining food literacy and its components. *Appetite*, 76, 50-59. <https://doi.org/https://doi.org/10.1016/j.appet.2014.01.010>
- Bianco, J. L. (2001). Policy Literacy. *Language and education*, 15(2-3), 212-227. <https://doi.org/10.1080/09500780108666811>

KITCHEN TABLE STORIES: HOW BLACK WOMEN SHAPE(D) THE BUFFALO FOOD MOVEMENT

Abstract ID: 1427

Individual Paper Submission

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Black women have been central to activism in the United States. The 1960s and 1970s are no exception. Prolific Civil Rights Era organizations relied on Black women. Black women fundraised, boycotted, and supplied food (Potorti 2014). Without their work, many of the historical moments of the Civil Rights Era, such as the Montgomery Bus Boycott, would not have been possible (Opie 2017). Beyond Civil Rights organizations, Black women heavily involved themselves in the Black Power movement. Even without formal channels, they carried the movement's values in their activism and community building (White 2011, Reese 2021, McCutcheon 2019).

The 1960s was a decade of emerging leaders. Community leaders fought inequity in their communities considering race, gender, and class. In Buffalo, NY, the story of such leaders is centered on the role of Black women. While there is considerable scholarship on Black communities in Buffalo (Williams 1999, Taylor 2018), and on food systems in Buffalo (Raja 2008), there is little documentation of Black women's historic role in the food system, and their impact on the food system. In three notable examples, Ms. Ruby Butts founded the first health food store in East Buffalo (Griffin et al, forthcoming), while Ms. Della Miller founded a food co-op in 1968. Ms. Gail Wells participated in a school breakfast program as a member of a local university's Black Students Union. These leaders continue to shape the food movement in Buffalo today.

In this paper, we document the stories of Black women leaders in the predominantly African-American neighborhoods of Buffalo, NY during the 1960s, and their impact on the food system. Through the interviews, the authors document how leaders understood their role within the community in the 1960s and the food justice movement as a whole.

This paper centers 1960s East Buffalo and its active Black women community leaders. Specific neighborhoods of Buffalo, a post-industrial city, were and are impacted by racialized investment choices. In particular, East Buffalo, the city's historically African-American neighborhood, experienced redlining. Post 1950s, businesses - including grocery stores - moved to affluent areas while East Buffalo experienced disinvestment.

This paper uses qualitative oral histories as its primary form of data collection. Data will be gathered using an interview tool for unstructured open-ended interviews. Interview data will be supplemented with a review of newspaper records from the 1960s centering community-led food work in Buffalo. The empirical component of this research is not yet complete. That said, the authors have completed a literature review, reviewed newspaper records, and conducted participant observation as part of the Buffalo Food Equity Network, a coalition of Black, brown, and indigenous people working towards food equity in Buffalo. We anticipate that oral history interviews with Black women leaders will be completed in the next two months.

The City of Buffalo has a long history of leadership by Black women whose impact on the food system continues today. Yet, contemporary scholarship on food systems planning - including that centering the city of Buffalo - is largely silent on the historic role of Black women. Results from this paper tease out the influence of Black women's leadership on the food system.

Planners and local governments around the US embark on policy efforts to strengthen food systems. Yet, these policy efforts can be ahistorical when overlooking the community-led work in food environments in Black neighborhoods. Black women were effectively steering, caring, protecting, and nourishing community food infrastructure -- even before food systems planning was on planners' radar. Findings from this paper will help planners locate contemporary policies within historic work of Black women.

Citations

- White, Monica M. "Sisters of the Soil: Urban Gardening as Resistance in Detroit." *Race/Ethnicity: Multidisciplinary Global Contexts*, vol. 5, no. 1, 2011, pp. 13–28, <https://doi.org/10.2979/racethmulglocon.5.1.13>.
- Reese, Ashanté M. "Making Spaces Something Like Freedom: Black Feminist Praxis in the Re/Imagining of a Just Food System." *ACME: An International E-Journal for Critical Geographies*, vol. 20, no. 4, 2021.
- Opie, Frederick Douglass. *Southern Food and Civil Rights: Feeding the Revolution*. American Palate, 2017.
- Potorti, M. "Feeding Revolution: The Black Panther Party and the Politics of Food". *Radical Teacher*, Vol. 98, Feb. 2014, pp. 43-51, doi:10.5195/rt.2014.80.
- McCutcheon, Priscilla. "Fannie Lou Hamer's Freedom Farms and Black Agrarian Geographies." *Antipode*, vol. 51, no. 1, 2019, pp. 207-224, doi:<https://doi.org/10.1111/anti.12500>.

Key Words: food justice, Black women, community building, women's roles, gender

ARE STATE-LEVEL FOOD SYSTEMS CHARTERS AND PLANS HELPING TO SCALE UP THE ALTERNATIVE FOOD MOVEMENT?

Abstract ID: 1429

Individual Paper Submission

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The 2010 Michigan Good Food Charter was one of the first collaborative, statewide visions for building a more just, green, and healthy food system. At least 18 states and multi-state collaborations now have similar food systems charters and strategic plans. These initiatives share a desire to unite fragmented efforts, share knowledge and resources, and ultimately, scale up the alternative food movement. Looking at Michigan a decade later and in the midst of hundreds of stakeholders devising another 10-year plan, we ask: What impact, if any, are these ambitious, participatory planning efforts having on food systems, and in particular, on state-level food policy?

Framed around policy science theories, our methods include a content analysis of food-systems related legislative bills that were passed and attempted over the last 20 years, before and after the launch of the Charter. We also carried out interviews with over two dozen policy advocates in Michigan – including lobbyists, activists, and advocacy organizations – as well as state legislators and bureaucrats who have acted as policy champions.

We discuss in our findings how food systems problems were effectively (and not so successfully) framed to have political resonance among legislators, how advocates took advantage of – or failed to leverage – strategic windows of opportunity (e.g., the launch of the Charter, shifts in the political balance across different administrations, COVID-19, etc.), and how coalitions were mobilized and utilized for policy advocacy (e.g., a short-lived, statewide food policy council, and numerous Charter-inspired food systems networks). Our case study of Michigan – particularly the food systems issues that have remained blind spots, topics that have been most contentious, and the issues that have been most amenable to state-level policy change -- suggests what may await advocates in other politically divided places. Ultimately, we suggest ways that state-level food systems charters and plans can be strategically leveraged to build more momentum around food systems transformation.

****Please note:** I submitted this abstract for last year's ACSP conference, but had to pull out. I fully expect to be able to present this year. I haven't presented this paper and we haven't published it yet -- my co-authors and I plan to submit the draft for publication around the time of the conference.

Citations

- Kingdon, J.W. (2003) (2nd Ed.) *Agendas, Alternatives, and Public Policies* Boston: Addison-Wesley.
- Pierson, P. (2000). Increasing returns, path dependence, and the study of politics. *American Political Science Review* 94 (2):251-267. <http://dx.doi.org/10.2307/2586011>
- van Bers, C., Delaney, A., Eakin, H., Cramer, L., Purdon, M., Oberlack, C., Evans, T., Pahl-Wostl, C., Eriksen, S., Jones, L., Korhonen-Kurki, K., & Vasileiou, I. (2019). Advancing the research agenda on food systems governance and transformation. *Current Opinion in Environmental Sustainability*, 39, 94–102. <https://doi.org/10.1016/j.cosust.2019.08.003>
- Wekerle, G. R. (2004). Food Justice Movements: Policy, Planning, and Networks. *Journal of Planning Education and Research*, 23(4), 378–386. <https://doi.org/10.1177/0739456X04264886>
- Winne, M. (2017). *Stand together or starve alone: Unity and chaos in the US food movement*. ABC-CLIO: Santa Barbara, CA.

MICROMOBILITY SAFETY FOR OLDER ADULTS: DOES THE BUILT ENVIRONMENT MATTER?

Abstract ID: 1441

Individual Paper Submission

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Micromobility has become increasingly popular in cities worldwide. However, there is a discrepancy between safety regulations and micromobility behavior patterns in neighborhoods, leading to a 282% increase in fatal injuries involving micromobility over the past three years. In particular, older adults had the highest rates of injuries related to micromobility, making them the most vulnerable population in the emerging mobility paradigm.

This paper seeks to identify environmental factors associated with micromobility crashes involving older adults in Korea.

Micromobility-related crash data were sourced from Traffic Accident Analysis System (TAAS) of South Korea between 2017 and 2020. We combined the TAAS location data with other built environment data to explore the risk factors and crash patterns of older adults. TAAS accounts for the actual number of fatalities, injuries, and accidents information of offenders or victims. Built environment data include Ds - density, land use diversity, design, destination accessibility, and distance to transit, which are widely used variables in explaining the relationship between travel behavior and land use. The accidents are nested within built environments and regional boundaries. Generalized linear mixed model was used for the analysis to explain grouped/clustered data structure with noncontinuous outcomes, such as binary responses or counts.

The results suggested that built environment variables, i.e., density, design, diversity, distance to transit, had strong influences on fatal injuries of older adults either offender or victim. Specifically, injuries occurred in the neighborhoods with better accessibility to facilities for medical health and seniors. In terms of built environment factors, the point of interest, especially health care and senior center, had higher impacts on crash rates than D variables that are more closely related to economic activities. Ironically, the shorter distance from senior safety zone to accident location was, older adults had the higher chances of being injured, which implies that new design guidelines of senior safety zone for micromobility should be considered. For urban planning and design practices, differentiated approaches are necessary for the safety of older adults using micromobility.

Citations

- Boglietti, Stefania, Benedetto Barabino, and Giulio Maternini. 2021. "Survey on E-Powered Micro Personal Mobility Vehicles: Exploring Current Issues towards Future Developments." *SUSTAINABILITY* 13 (7). <https://doi.org/10.3390/su13073692>.
- Bloom, Matthew B., Ali Noorzad, Carol Lin, Milton Little, Ernest Y. Lee, Daniel R. Margulies, and Sam S. Torbati. 2021. "Standing Electric Scooter Injuries: Impact on a Community." *American Journal of Surgery* 221 (1): 227–32. <https://doi.org/10.1016/j.amjsurg.2020.07.020>.
- Oh, Jihun, and Jeongseob Kim. 2021. "Where to Ride? An Explorative Study to Investigate Potential Risk Factors of Personal Mobility Accidents." *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH* 18 (3): 965. <https://doi.org/10.3390/ijerph18030965>.

Key Words: Safety, Micromobility, Personal mobility, Built environment, Older adults

IS THE RELATIONSHIP BETWEEN THE WALKABLE URBAN FORM AND WALKING MODERATED BY STREETSCAPES?

Abstract ID: 1473

Individual Paper Submission

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Background: The literature on walkability has often characterized walkable built environment by operationalizing the accessibility aspect of the built environment. Accessibility measures, such as residential density, land use mix, intersection density, proximity to transit and other destinations, showed significant associations with walking and

physical activity (Ameli et. al., 2015). Based on ecological models, past studies also demonstrated that the effects of accessibility can be moderated by various personal, social, and organizational factors (Adkins et al., 2017).

However, focusing on the accessibility aspect of walkability poses two limitations. First, while accessibility pertains to ‘Are there nearby places to walk to?’, another important but less examined aspect of walkability is ‘How good is the walking experience?’ This quality aspect of walkable built environment can be another factor that can strengthen or weaken the effect of accessibility, yet few studies have tested moderation effects. The quality aspect of walkability can be divided into crime safety, traffic safety, and pleurability (Alfonzo, 2005). These characteristics are formed by micro-scale streetscape features, such as sidewalks and crosswalks, absence of graffiti and abandoned houses, and street trees. The second limitation is that the measures of accessibility are more challenging to modify than micro-scale features, limiting the applicability of the research findings in planning practice. Additionally, the cost of measuring micro-scale features is another major challenge for research and planning practice. Although computer vision can help reduce the cost, the extent to which computer vision-based data can replicate past findings is untested.

Objective: This study hypothesizes that the quality aspect of walkability can not only provide direct and positive effects to walking (i.e., main effects) but also can strengthen the effect of accessibility-based walkability measures (i.e., interaction effects). This study tests this hypothesis using computer vision-based measures of micro-scale features.

Method: The National Household Travel Survey 2017 was used to retrieve trip-level data on travel mode (i.e., dependent variable), socio-economic/demographic variables, and other trip-specific variables. Five macro-scale features were measured using GIS. Computer vision-based methods were used to measure 13 micro-scale streetscape features that subsequently formed measures of traffic safety at intersections, traffic safety along the segments, crime safety, and pleurability (Koo et al., 2021; Koo et al., 2022). Correlation analysis was conducted to examine the relationship among accessibility measures and micro-scale streetscape features. A total of 20 binary logistic regression models were fitted to examine the main and interaction effects of each pair of accessibility and quality aspects of walkability on walking mode choice.

Results: Moderate correlations were observed between micro-scale features and accessibility measures, with a few strong correlations (e.g., walk signal and Walk Score had a correlation coefficient of 0.577, $p < 0.001$). Sidewalk buffers, absence of graffiti, and greenery were negatively associated with accessibility measures. After adjusting for the controls, all five macro-scale features showed significant positive associations with walking mode choice. Traffic safety at intersections consistently showed significant positive interaction effects with four out of five macro-scale features but had insignificant main effects. Pleurability consistently showed significant positive main effects but no interaction effects. Crime safety had a significant interaction effect with proximity to transit. In some cases, the interaction effect was large enough that poor micro-scale features can suppress the positive effect of accessibility measures.

Conclusions: Computer vision-based measures for the quality aspect of walkability are associated with walking mode choice through direct effects and by moderating the effects of accessibility aspect of walkability. Modifiable features in micro-scale can strengthen the effect of accessibility measures, which are harder to modify. Computer vision-based data collection can provide a scalable method for research and planning practice.

Citations

- Adkins, A., Makarewicz, C., Scanze, M., Ingram, M., & Luhr, G. (2017). Contextualizing walkability: do relationships between built environments and walking vary by socioeconomic context?. *Journal of the American Planning Association*, 83(3), 296-314.
- Alfonzo, M. A. (2005). To walk or not to walk? The hierarchy of walking needs. *Environment and behavior*, 37(6), 808-836.
- Ameli, S. H., Hamidi, S., Garfinkel-Castro, A., & Ewing, R. (2015). Do better urban design qualities lead to more walking in Salt Lake City, Utah?. *Journal of Urban Design*, 20(3), 393-410.
- Koo, B. W., Guhathakurta, S., & Botchwey, N. (2021). How are neighborhood and street-level walkability factors associated with walking behaviors? a big data approach using street view images. *Environment and Behavior*, 54(1), 211-241.
- Koo, B. W., Guhathakurta, S., & Botchwey, N. (2022). Development and validation of automated microscale walkability audit method. *Health & place*, 73, 102733.

Key Words: Walkability, Accessibility, Streetscape quality, Moderation effect, Computer vision

HOW CAN WE MEASURE BETTER? CREATING A MULTIDIMENSIONAL SPATIAL MODEL OF FOOD ACCESS IN UPSTATE NEW YORK.

Abstract ID: 1530

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Food deserts, that is, areas with insufficient access to healthy and affordable food, do not have a consistent definition. Studies have found them concentrated in low-income, racially disadvantaged neighborhoods and typified them as either a problem of physical access - in terms of the geographical proximity of residents to outlets offering healthy foods - or financial access – measured in terms of affordability of such foods (Walker et al., 2010). Primarily framed as a social equity concept, some scholars have also examined the health implications of food access with mixed results: where some have found an association between differential food access and health indicators like obesity (Cooksey-Stowers et al., 2017), others have found no correlation.

In the first part of this paper, I critically examine the food access literature to identify limitations in the measurement of food deserts. Strategies to identify food deserts vary by the spatial scale of analysis (Bao & Tong, 2017). Food basket studies which compare food offerings in neighborhood stores are not scalable, while large scale identification such as that employed by the Food Access Research Atlas of the US Department of Agriculture are not sufficiently granular. The latter typically classifies places into binaries of ‘food desert’/‘not a food desert’ (Rhone et al., 2017) which does not provide insight into the degree of food access. It also obscures other food access situations, for e.g., food swamps – areas with high numbers of establishments offering less healthy food alternatives. Challenges with incorporating food price or affordability, insufficient understanding of behavioral factors, few studies which examine rural areas, and varied evidence on the health impacts, are other shortcomings. These together confuse the nature of appropriate policy responses. Multiple scholars have called for a multidimensional index that addresses the above, while also being flexible to rapidly evolving food environment (Rose et al., 2010).

In the second part, I propose an alternative methodology to measure food access using publicly accessible datasets. I use location data on various food establishments – grocery stores, restaurants, fast food, convenience stores, and farmers’ markets - scraped from Google Maps using the Places API. These are filtered to varying distances from the centroids of census tracts in Upstate New York. This is combined with tract-level health data sourced from the PLACES dataset of the Centers for Disease Control and Prevention (CDC) and socioeconomic indicators from the Census. Using this large-scale dataset, I examine two questions: (i) How can more granular measures of food access be implemented at scale? (ii) How do social equity and community health outcomes – the two suggested impacts of food deserts - vary by the food environment? I use the Spatial Durbin model to demonstrate two geographically weighted regressions: (i) Food environment as a function of racial composition and income levels; (ii) Obesity rates as a function of the food environment. Preliminary results suggest that current strategies under-identify food deserts in rural areas; it also confirms previous studies that indicate convenience stores as contributing to poor community health outcomes. Using variables that are statistically significant in their influence on the food environment, I suggest a multidimensional measure of food access.

Contributions of this research are, firstly, an analysis of limitations in food access measurement and a corresponding framework for addressing these. Secondly, a multivariate model that examines questions fundamental to the food access literature using publicly available data. An important implication of this work is a re-conceptualization of food access beyond the simple dichotomy of a food desert or not. I instead suggest more nuanced measures that include multiple aspects of the food environment which are more actionable at the policy level.

Citations

- Bao, K. Y., & Tong, D. (2017). The Effects of Spatial Scale and Aggregation on Food Access Assessment: A Case Study of Tucson, Arizona. *Professional Geographer*, 69(3), 337–347. <https://doi.org/10.1080/00330124.2016.1252271>
- Cooksey-Stowers, K., Schwartz, M. B., & Brownell, K. D. (2017). Food swamps predict obesity rates better than food deserts in the United States. *International Journal of Environmental Research and Public Health*, 14(11), 1–20. <https://doi.org/10.3390/ijerph14111366>
- Rhone, A., Ploeg, M. Ver, Dicken, C., Williams, R., & Breneman, V. (2017). United States Department of Agriculture Low-Income and Low-Supermarket-Access Census Tracts, 2010-2015. Economic Research Service. www.ers.usda.gov/
- Rose, D., Bodor, J. N., Hutchinson, P. L., & Swalm, C. M. (2010). The importance of a multi-dimensional approach for studying the links between food access and consumption. *Journal of Nutrition*, 140(6), 1170–1174. <https://doi.org/10.3945/jn.109.113159>
- Walker, R. E., Keane, C. R., & Burke, J. G. (2010). Disparities and access to healthy food in the United States: A review of food deserts literature. *Health and Place*, 16(5), 876–884. <https://doi.org/10.1016/j.healthplace.2010.04.013>

Key Words: Food access, Food deserts, Multidimensional index, Spatial analysis, Obesity

SOCIAL AND STRUCTURAL DETERMINANTS OF FOOD SECURITY AND MENTAL HEALTH

Abstract ID: 1550

Individual Paper Submission

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Background: Food insecurity is a complex public health issue shaped by socioeconomic conditions, infrastructure, and available resources, all of which vary by spatial contexts. Decades of public health interventions have promoted “access by all people at all times to enough food for an active, healthy life” with some success. Yet, racial disparities in food insecurity persist and, in some cases, are widening. This is especially concerning as the complex relationships between food insecurity and mental health remain underinvestigated.

Scholars are increasingly drawing attention to structural determinants of health, which refer to cultural norms, policies, institutions, and practices that generate or reinforce individual socioeconomic position through the distribution (or maldistribution) of neighborhood resources, including food. In particular, there is growing research examining the legacy of redlining practices that isolated Black Americans from housing and economic opportunities, and continue to shape concentrated social, economic, and health disadvantage today. Despite these challenges, individuals and families adapt by utilizing a variety of food supports to ensure households’ food security. However, there is little empirical evidence of households’ foodscapes (i.e., the geographic scope of food acquisition from key food sources), how households navigate their food environments, and the potentially mediating role of social networks on health. Addressing these knowledge gaps is consequential for fostering food system policies and practices that are reflective of people’s lived experiences, resources, and priorities.

Objective(s): This analysis examines social and structural determinants of health by evaluating associations between 1) historic redlining and current day food environments, 2) food security, mental health, and households’ foodscapes, and 3) household’s social networks and their foodscapes.

Methods: This study is nested within “Growing Food Policy from the Ground Up,” a participatory action research project in East Buffalo, NY, where structural racism in housing, education, and economic opportunities have had lasting impacts on families’ access to key resources. Using primary data from a cross-sectional survey of approximately 250 households, we will employ geospatial analysis tools to link households’ key food sources with secondary data on the built environment (e.g., street networks, food environment). Food security will be measured using the 6-item USDA Household Food Security Survey Module. Food procurement will be measured through recall of the past 30 days, asking about the types and locations of food sources from which food was collected as well as mode of transportation used to procure food from each identified source. Mental health will be measured through recall of anxiety and depression over the past 12 months using CDC’s National Health Interview Survey. Social networks will be characterized by using the name generator approach and asking about individuals who provide food-related support. Using spatial analyses, we will explore the extent to which health can be explained by households’ foodscapes as well as the mediating effect of social networks.

Results: We hypothesize that historically redlined neighborhoods will have less health-promoting food environments, compared to historically non-redlined neighborhoods. More expansive foodscapes are also hypothesized to be associated with food security and mental health; this relationship may be mediated by households’ social network characteristics.

Implications for planning practice: This study will inform policy solutions to improve social and structural determinants of health. Outcomes from this research aim to draw attention to how local government can support food security and mental health through policies that are reflective of residents’ resources and lived experiences navigating their food environments.

Citations

- Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. 2021. Household Food Security in the United States in 2020, ERR-298, U.S. Department of Agriculture, Economic Research Service.
- Odoms-Young A, Bruce MA. Examining the Impact of Structural Racism on Food Insecurity: Implications for Addressing Racial/Ethnic Disparities. *Fam Community Health*. 2018; 41 (Suppl 2 Suppl, Food Insecurity and Obesity):S3-S6. doi:10.1097/FCH.000000000000183.
- Solar O, Irwin A. A conceptual framework for action on the social determinants of health. *Social Determinants of Health Discussion Paper 2 (Policy and Practice)*.

Key Words: Food systems planning, Food security, Social network, Social determinants of health, Structural determinants of health

FARMERS MARKETS AND FOOD EQUITY IN RURAL COMMUNITIES

Abstract ID: 1570

Individual Paper Submission

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Farmers Markets promote a sense of place and history, especially in rural and suburban landscapes. Their position in the community brings together a multitude of partners which can work together to help the market grow its food equity efforts. Not only do benefits' programs at markets increase access to healthy, locally grown foods, but they also increase sales and diversify the income stream of vendors coming to sell. Many farmers markets in Wisconsin, especially in rural areas, have shared the same story: they ran an EBT/FoodShare program on a limited budget, until funding or resources ran out. Our survey of 15 market managers across Wisconsin in 2020 revealed that for a farmers market EBT/credit/debit program to be successful, it needs to include 1) financial support for markets to run a token system or for individual farmers to purchase their own EBT/credit/debit machines, and 2) incentive programs to use EBT/FoodShare, such as Double-Your-SNAP-Dollar.

Only 1 out of 6 Wisconsin adults consume the recommended five or more servings of fruits and vegetables (F&V) a day (DHS, 2021). Greater F&V intake is associated with many positive health outcomes (CDC, 2017; Kaur & Aeri, 2019), most notably reducing chronic health conditions (e.g., diabetes, cardiovascular diseases, obesity) that account for most of Wisconsin health costs (DHS). Increasing F&V intake by as little as 0.4 daily servings has been estimated to reduce national health care spending and lost economic productivity by billions of dollars while preventing millions of chronic illnesses and improving quality of life, (Ekwaru, et al, 2016; Lee, et al. 2019). F&V are the most frequently purchased type of food at farmers markets. Consumers who buy food at farmers markets purchase 1.5 times more F&V than people who buy food only at non-direct retailers (Economic Research Service, 2018).

While all Wisconsin residents would benefit from increasing their F&V intake (DHS, 2020), this is especially true for low-income populations (Pechey & Monsivais, 2016; Rehm, et al 2015). A two-year study in 10 Wisconsin farmers markets found that 99 percent of food assistance beneficiaries increased their F&V intake by shopping at the farmers market (Krokowski, 2014). The presence of farmers markets and the ability to redeem SNAP at the farmers market directly increases F&V intake of SNAP recipients (Economic Research Service, 2018; Krokowski, 2014; Jones & Bhatia, 2011; Dimitri, et al. 2015; Buttenheim, et al, 2012). While these programs are resource intensive, preliminary research has shown that an investment in farmers markets can have an exponential impact on the economy (Ledesma et. al, 2021). For example, Farm 2 Facts (F2F) demonstrated a high percentage increase in SNAP sales in the Village of Brown Deer, WI, with the net percentage increase being over 500%, after their implementation of F2F.

This paper presents research from a USDA Local Food Promotion Program grant. The grant established a Central Wisconsin Farmers Market Collaborative (including Stevens Point, Marshfield, Wausau, Waupaca, Adams-Friendship, and Wisconsin Rapids) that studied how to support individual markets to:

1. ascertain the readiness of their communities to invest in EBT/credit/debit services at the market;
2. develop a business plan (in communities with sufficient readiness) to fund starting a new, or strengthen existing EBT/credit/debit services at the farmers market;
3. evaluate the economic and social impact of well-supported and sustained EBT/credit/debit services on market vendors and local businesses, SNAP-eligible residents (fruit and vegetable purchases, inclusion), and partner entities and residents generally; and
4. establish ongoing impact and needs assessment to ensure EBT/credit/debit programs are sustained while also evolving in response to local needs to ensure that the market is accessible to all members of the community, including low-income, minority and differently abled.

Citations

- Ekwaru, J.P., Ohinmaa, A., Loehr, S., Setayeshgar, S., Thanh, N.X. and Veugelers, P.J. 2017. The economic burden of inadequate consumption of vegetables and fruit in Canada. *Public Health Nutr.* 20(3): 515–523. doi:10.1017/S1368980016002846
- Kaur, Harmeet; Aeri, Bani Tamber (2019). Protective Impact of Fruits and Vegetable Intake on Cardiovascular Risk Factors-A Review. *Journal of Clinical & Diagnostic Research.* Vol. 13 Issue 5, p6-9. 4p.
- Krokowski, K. (2014). Evaluating the Economic and Nutrition Benefits and Program Challenges of EBT Programs at Farmers' Markets. *Journal of Agriculture, Food Systems, and Community Development*, 4(2), 37–44. <https://doi.org/10.5304/jafscd.2014.042.011>

- Pechey, R., & Monsivais, P. (2015). Supermarket Choice, Shopping Behavior, Socioeconomic Status, and Food Purchases. *American Journal of Preventive Medicine*, 49(6), 868-877.
doi:<https://doi.org/10.1016/j.amepre.2015.04.020>

Key Words: Farmers Markets, EBT, Food Equity, Wisconsin

THE SPATIAL LOCATION OF CANNABIS DISPENSARIES IN THE UNITED STATES: WHO HAS ACCESS?

Abstract ID: 1592

Individual Paper Submission

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Introduction: In recent years, cannabis legalization has proliferated in the U.S. Currently, 37 states allow for legal medical cannabis use and 18 allow recreational use. The growth of cannabis for medical and recreational purposes has important implications for the field of planning because the spatial location of dispensaries is often determined by local land use and municipal policies. Despite Federal laws that continue to criminalize the sale, possession, and use of cannabis, local authorities are increasingly engaged in promulgating regulation, drafting land use policies, and developing permitting processes to adapt to state policies that allow medical and recreational use of cannabis products (Rosenthal & Fraijo Jr., 2011). Yet, little is understood about how to balance the competing demands of community, public health advocates, and cannabis entrepreneurs, leaving many practicing planners to replicate already developed policies or create new policies from scratch.

Historical perspectives frequently position cannabis as an illegal substance and problematic public health challenge, but increasingly evidence suggests that cannabis offers economic opportunities, particularly in communities that experience the disproportionate impacts of cannabis criminalization. Cannabis dispensaries are often associated with increased risk of cannabis-related hospitalization and greater alcohol outlet density. (Mair et al., 2021). Additionally, dispensaries are associated with increased crime (Hughes, Pacula, Weinberger, 2020). Developing policies to address problematic implications of cannabis sales often involves buffering of sensitive uses, limiting dispensaries to specific zones, and permits and licenses issued for business operation.

Moving beyond perspectives that position cannabis production and dispensaries as locally undesirable land uses (Németh & Ross, 2014), a number of municipalities are looking to confront this problematic perspective through direct social equity programs that prioritize criminal justice reform and equal access to opportunity (e.g. City of Los Angeles Social Equity Program, City of San Diego Cannabis Equity Program). Scholars and practitioners are increasingly aware of the potential economic, public health, and equity benefits of cannabis policy to potentially reduce harms enacted on communities of color as part of the American war on drugs (Kavousi, et al., 2021).

Methods: We explore the relationship between community level socioeconomic status and dispensary location across states that have legalized medical and recreational use. We look to understand if dispensary locations tend to be found more frequently in communities dense with wealthy, well educated white folks, in diverse places, or in other communities of color that have historically been impacted the most by the criminalization of cannabis. To obtain the spatial location of dispensaries across the United State, we scraped addresses from weedmaps.com on November 1, 2021. The scrape resulted in location data on 5,467 dispensaries in 38 states. We use Esri ArcGIS Pro 2.9 to match the location of each dispensary to 2020 US Census Bureau tract level data to determine how nearby community sociodemographic characteristics influence access to cannabis dispensaries differently. Data on race and ethnicity were derived from the United States Census 2020 Profile of General Population and Housing Characteristics (DP-5). Data on poverty were derived from the United States Census 2020 American Community Survey Five Year Estimates for Selected Economic Characteristics (S1501). Census tracts were coded to indicate areas of concentrated poverty. Data on education were derived from the United States Census 2020 American Community Survey Five Year Estimates for Selected Social Characteristics (S1701).

Results: Results of this work are forthcoming and will be presented at the conference.

Citations

- Hughes, L. A., Schaible, L. M., & Jimmerson, K. (2020). Marijuana dispensaries and neighborhood crime and disorder in Denver, Colorado. *Justice Quarterly*, 37(3), 461-485.
- Németh, J., & Ross, E. (2014). Planning for marijuana: The cannabis conundrum. *Journal of the American Planning Association*, 80(1), 6-20
- Kavousi, P., Giamo, T., Arnold, G., Allende, M., Huynh, E., Lea, J., Lucine, R., Miller, A.T., Webre, A., Yee, A., Champagne-Zamora, A., & Taylor, K. (2021). What do we know about opportunities and challenges for localities from Cannabis legalization?. *Review of Policy Research*.

- Mair, C., Sumetsky, N., Kranich, C., & Freisthler, B. (2021). Availability of medical cannabis dispensaries and cannabis abuse/dependence-related hospitalizations in California. *Addiction*, 116(7), 1908-1913.
- Rosenthal, D.M., & Fraijo Jr., A. (2011). The Next Zoning Battleground: Trends and Challenges in Local Regulation of Medical Marijuana. *Zoning Practice* 7.

Key Words: access, cannabis, spatial justice, public health

ASSOCIATIONS BETWEEN THE CHARACTERISTICS OF TREES AND STREET CRIME: A CASE STUDY OF THE DOWNTOWN AUSTIN, TX

Abstract ID: 1641

Individual Paper Submission

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Background: Urban trees play a critical role in livable and sustainable communities. Several studies have demonstrated that urban nature and trees can promote people's physical health and mental health, increase property values, attract more tourists, and even improve safety in a neighborhood (Turner-Skoff & Cavender, 2019). Even the presence of shaded trees and the quality of trees can promote street activities and influence visitors to actively enjoy urban downtown and shopping areas (Wolf, 2005). Many studies have found an inverse relationship between urban tree canopy and crime particularly when there are higher-canopy trees that are less likely to block views and provide criminals a place to hide (Kondo et al., 2017; Kuo & Sullivan, 2001; Lee, 2021). Although considerable efforts have been made towards addressing the role of the overall tree canopy on crime, a few studies have attempted to comprehensively examine a set of tree-related characteristics by using multiple measures through remote sensing, green view index (GVI) images, and audit-based inventory in relation to street crime, especially in the city's downtown with busy street activities. This study sought to examine to what extent the characteristics of trees were associated with street crime at the street segment scale. Understanding the influencing mechanism of the urban trees on crime is important to crime prevention and urban forestry management.

Methods: We used data from downtown Austin, Texas. To analyze micro-level crime incidents, we used a street segment as the unit of analysis. 541 street segments within the downtown neighborhood (size: 4.51 square km). Crime data for 2012-2019 were used. Crime types in this study included assault as a part of violent crime and theft as a part of property crime. The characteristics of trees have been quantified through remote sensing, inventory-based manual audit, and GVI images. Remote sensing tree canopy cover (heretofore, tree-aerial) was measured using a 2014 high-resolution land cover layer (1m). The street tree inventory dataset (tree-inventory) of 2020 was downloaded from the Austin Open Data, which includes the number of trees, diameter at breast height, and species. We also measured the GVI to assess street-level greenery. GVI was calculated by employing 360 degrees panoramic Google Street View images at 20-meter intervals. We controlled our models for the other greenery (% Plant + % Grass), land use type (e.g. residential and commercial), and total job count of adjacent blocks. We then build negative binomial models after adding street segment length as an exposure variable to explain the associations of tree characteristics with street crime rate.

Results: A total of 949 assaults and 1,436 thefts were observed on the streets in downtown Austin, TX during the 2012-2019 timeframe. After adjusting for our control variables, GVI and tree-aerial had inverse relationships with both street assault and street theft for street assault. Among the tree-inventory, the density of trees was not significantly associated with street crimes while tree diameter was negatively associated with both street assault and street theft.

Findings: This study confirmed that urban trees were beneficial to a reduction in street crime in downtown Austin, TX, which could help provide potential evidence-based downtown redevelopment strategies to improve livability and safety. Our findings suggest that both GVI and tree-aerial can be used complementary to street tree inventory. Both GVI and satellite imagery are cost-effective and feasible resources to measure the amount of tree canopy in relation to street crime. To maximize the benefits of urban trees in crime prevention, the appropriate size of trees in terms of diameter at breast height would be also considered.

Citations

- Kondo, M. C., Han, S., Donovan, G. H., & MacDonald, J. M. (2017). The association between urban trees and crime: Evidence from the spread of the emerald ash borer in Cincinnati. *Landscape and Urban Planning*, 157, 193-199.
- Kuo, F. E., & Sullivan, W. C. (2001). Environment and crime in the inner city: Does vegetation reduce crime? *Environment and Behavior*, 33(3), 343-367.

- Lee, S. (2021). Does tree canopy moderate the association between neighborhood walkability and street crime? *Urban Forestry & Urban Greening*, 65, 127336.
- Turner-Skoff, J. B., & Cavender, N. (2019). The benefits of trees for livable and sustainable communities. *Plants, People, Planet*, 1(4), 323-335.
- Wolf, K. L. (2005). Business district streetscapes, trees, and consumer response. *Journal of Forestry*, 103(8), 396-400.

Key Words: Urban tree, Street crime, Safety, Urban downtown, Green View Index

FOOD RECOVERY PROGRAMS: PLANNING FOR EFFICIENCY, EFFECTIVENESS, AND EQUITY

Abstract ID: 1642

Individual Paper Submission

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About one third of food grown for human consumption is wasted and ends up in landfills each year (Lipinski, 2013; Buzby et al, 2014). Concurrently, about one in nine Americans experience some food insecurity every year (USDA, 2021). Food recovery programs (FRPs), which recover edible food and redistribute it among communities in need, can be a solution to dual challenges of food wastage and insecurity. Recovering food for human consumption also reduces environmental impacts of landfill disposal, alleviates resource demand for food production, and improves food disparities. FRPs, however, have been under-appreciated in sustainability and resiliency planning. Without planning or coordination at the local or regional level, FRPs often experience secondary food wastage, economic inefficiencies, and short-lived program operations. To scale up the benefits of FRPs, system-wide coordination for resource management is needed.

This study advocates for more proactive planning for FRPs and assesses existing and emerging FRPs with a focus on their cost effectiveness, environmental performance, and equity goals. Focusing on the goal of food security, this study first compares the cost effectiveness of three solutions: (1) the federal Supplemental Nutrition Assistance Program (SNAP); (2) collecting and re-distributing donated food (the most common type of existing FRPs); and (3) partnering with large donors (e.g., grocery stores) and preparing surplus food into value-added meals (O'Donnell et al., 2015). Numerical information is analyzed whenever data availability enables. Acknowledging cost variations across regions, this analysis focuses on categorical differences, instead of itemized cost calculations. While food assistance programs such as SNAP tend to meet the goals of food security reliably, they tend to be the most expensive option to society and generally do not reduce food waste as FRPs. All FRPs, with or without food preparations, also involve significant costs throughout logistical chains (e.g., food collection, storage, and delivery). The unit cost of small-scale FRPs is particularly high, which suggests high participation rates (both donors and food outlets) matter. The potential revenue from selling cooked meals may help defray some of the FRP costs, which can be crucial for the long-term viability of FRPs.

Notably, FRPs shift long-haul waste transport services destined for a regional landfill location to many local and short pick-up and delivery trips (Zheng and Ai, 2021). This study assesses the sensitivity of system-boundary definition and unit of analysis in economy efficiency and environmental performance evaluations. National average data are coupled with community-specific data in the city of Chicago. Initial results show that climate impacts from FRPs highly depend on the study design (e.g., local vs. regional, food consumption/disposal vs. the entire food cycle). Food recovery potential and ensuing climate impacts also vary by sector and by community. Again, FRP participation rates stand out as a significant factor in program performance.

Both economic and environmental analyses of FRPs reveal a shift of cost and resource burdens among various infrastructure programs, across adjacent communities, and between federal and local governments. However, through a multi-disciplinary literature review (e.g., operations research, transportation, health, and industrial engineering, as well as planning), this study finds a general lack of equity analysis of FRPs, especially in numerical terms. Not surprisingly, definitions of an "equitable" solution vary across disciplines and studies, if explicit definitions are provided at all (Horst et. al., 2017; Mui et. al, 2022). The relatively vague goal of equity and lack of measurable metrics of FRPs (and sustainability performance in general) possibly hinder the design, implementation, and evaluation of FRPs. This study demonstrates the need for system-wide and multi-criteria analyses of FRPs as well as the missing role of planners in integrating FRPs in sustainability and resiliency planning.

Citations

- Buzby, J. C., Farah-Wells, H., & Hyman, J. (2014). The estimated amount, value, and calories of postharvest food losses at the retail and consumer levels in the United States. *USDA-ERS Economic Information Bulletin*, (121).

- Horst, M. N. McClintock & L. Hoey (2017) The Intersection of Planning, Urban Agriculture, and Food Justice: A Review of the Literature, *Journal of the American Planning Association*, 83:3, 277-295, DOI: 10.1080/01944363.2017.1322914
- Mui, Y., Headrick, G., Raja, S., Palmer, A., Ehsani, J., & Pollack Porter, K. (2022). Acquisition, mobility and food insecurity: Integrated food systems opportunities across urbanicity levels highlighted by COVID-19. *Public Health Nutrition*, 25(1), 114-118. doi:10.1017/S1368980021002755
- O'Donnell, T. H., J. Deutsch, C. Yungmann, A. Zeitz, and S. H. Katz. (2015) New Sustainable Market Opportunities for Surplus Food: A Food System-Sensitive Methodology (FSSM). *Food and Nutrition Sciences*, 6(10). 883-892. 10.4236/fns.2015.610093
- Zheng, J., and Ai, N., 2022. Evaluating the Sustainability of Urban Food Recovery Programs: A Quantitative Assessment in Chicago. *Transportation Research Record*. 2676(1): 118–130. DOI: 10.1177/03611981211035763

Key Words: food recovery, multi-criteria planning, effectiveness, efficiency, equity

HEALTH AND SOCIAL OUTCOMES OF AGE-FRIENDLY COMMUNITY INTERVENTIONS: A SCOPING REVIEW

Abstract ID: 1653

Individual Paper Submission

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To address numerous challenges associated with population aging, increased attention has been paid to building age-friendly cities and communities (AFCC). However, limited robust evidence exists to develop and implement evidence-based policies and strategies that enable a societal transformation to age-friendly communities. This research addresses this gap by conducting a scoping review of interventions designed to promote AFCC around the world. Of the initial 3,105 publications, 27 peer-reviewed journal articles were identified to have both health and social outcomes of AFCC interventions. Based on the synthesis of the results, four major themes emerged: physical activity interventions (n=11), educational interventions (n=9), multi-domain interventions (n=5), and other interventions (n=2). The results showed that many of the successful interventions used a partnership model and behavioral change theories to inform program design and implementation. The results also indicated that social participation and engagement played a key role in making the interventions successful. However, the results revealed that the literature is dominated by individual-focused approaches, suggesting that more research on environment-focused interventions is needed. Future research should develop an integrated framework that considers both programming strategies as well as urban design and planning strategies. This review offers important insights to inform policies and practices aimed at promoting old adults' health and social outcomes.

Citations

- Prince, M. J., Wu, F., Guo, Y., Robledo, L. M. G., O'Donnell, M., Sullivan, R., & Yusuf, S. (2015). The burden of disease in older people and implications for health policy and practice. *The Lancet*, 385(9967), 549-562.
- United Nations. (2020). *World Population Ageing 2020 Highlights*. United Nations; Geneva, Switzerland.
- World Health Organization. (2007). *Global Age-Friendly Cities: A Guide*. World Health Organization; Geneva, Switzerland.
- Davern, M., Winterton, R., Brasher, K., & Woolcock, G. (2020). How can the lived environment support healthy ageing? A spatial indicators framework for the assessment of age-friendly communities. *International Journal of Environmental Research and Public Health*, 17(20), 7685.
- Murtagh, B., Cleland, C., Ferguson, S., Ellis, G., Hunter, R., Rodriguez Añez, C.R., Becker, L.A., Hino, A.A.F. and Reis, R.S. (2022). Age-friendly cities, knowledge and urban restructuring. *International Planning Studies*, 27(1), 62-76.

Key Words: Age-friendly communities, Measurement, Health, Older adults

URBAN OASES: USE OF COMMUNITY GARDENS TO IMPROVE FOOD ACCESS AND POSITIVE CULTURAL IDENTITY AMONG US REFUGEE POPULATIONS

Abstract ID: 1666

Individual Paper Submission

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Food insecurity among refugees in the United States is disproportionately prevalent, is detrimental to a host of social, physical, and mental health markers, and is uniquely situated to exacerbate the psycho-social and mental health impacts of acculturative stress, displacement, and other aspects of refugee experiences.

Through a syncretic analysis of public health data regarding food insecurity and nutrition among refugees, sociological studies on refugee identity and social formation, and ethnographic accounts of the relation between food and identity, this paper will put relay a new understanding on the unique and reflexive relationship between health, identity, and food security among refugees in the United States. By recognizing the ways that food insecurity among refugees is contextually empowered to harm the wellbeing and health of this population, we will see that an approach to addressing food system and security based solely on access to adequate food is itself inadequate. The purpose of this paper is to show that a food security intervention that seeks to fully and holistically support the health and wellbeing of refugee populations in the United States must be centered on community and cultural identity, culturally relevant food sovereignty, and capacity building.

Following the establishment of the importance of a holistic and comprehensive social, cultural, and material approach to food access, this paper will then move to address the role that land utilization and urban food system planning have in. First, by reviewing existing literature on the impact that community gardens have on physical health and food access, as well as literature discussing the ways community gardens support positive social and cultural identity formation. Second, by critiquing contemporary approaches to urban food systems planning which do not incorporate the social and cultural aspects of food systems, and how these approaches have often missed opportunity for positive impact. Finally, by analysing existing data regarding vacant urban space and the potential for future development of community gardens and the material benefit they could have to communities and cities.

In these three steps, this paper will establish that community gardens are an apt response to the issues of food insecurity and cultural identity among refugees, will emphasize the importance of a new and holistic response (which can be found through a rethinking of community gardens), and then will lay out a practical way forward towards, and the potential benefits of, utilizing community gardens to this end. This will culminate in the conclusion that the creation and maintenance of community gardens which provide access and agency over culturally relevant foodstuffs for refugee populations ought to be instituted as a means of fighting food insecurity and culture loss among refugees in the United States.

This paper seeks to be more than simply a practical analysis of the issues caused by food insecurity and how community gardens might ameliorate these issues, work which has been done in many variations already. Its significance and call to action is that it is centered on a theoretical reimagining of how we respond to material issues like food insecurity in such a way that recognizes and incorporates the cultural and intangible aspects of a community. In doing so, it seeks to challenge planners and policy makers to ensure that their work is done with an awareness and valorization of the social and cultural stakes of their projects and the need to fully situate their plans in the contexts of the targeted communities.

Citations

- Hadley et al, Acculturation, economics and food insecurity among refugees resettled in the USA: a case study of West African refugees, *Public Health Nutrition*: 10(4), 405–412, 2006
- Counihan, Carole M., *A Tortilla is Like Life*, University of Texas Press, 2009
- COLIC-PEISKER and WALKER, Human Capital, Acculturation and Social Identity: Bosnian Refugees in Australia, *Journal of Community & Applied Social Psychology*, 13: 337–360, 2003
- Ghose, R. and Pettygrove, M., Urban Community Gardens as Spaces of Citizenship. *Antipode*, 46, 1092-1112. 2014
- Andreas Exner, Isabelle Schützenberger, *Creative Natures. Community gardening, social class and city development in Vienna*, *Geoforum*, Volume 92,181-195, 2018

Key Words: Food Security and Equity, Refugee Health, Cultural Identity, Community Gardens, Food Systems Development

UNDERSTANDING THE EVERYDAY LIVES OF THE HOUSELESS THROUGH COGNITIVE MAPS: A HUMAN-CENTERED ANALYSIS OF THEIR HOME TERRITORIES AND NEEDS

Abstract ID: 1676

Individual Paper Submission

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How do the houseless view their world? What are the most important places in their daily lives? What are the important things that make up what could be considered their homes? What barriers exist? These, and many other questions, are what we tried to address by having houseless individuals draw cognitive/image maps of their daily lives.

Starting in Spring 2021, and with support from the Social and Economic Vulnerabilities Initiative (SEVI), Dr. Appleyard's Faculty Student Mentorship Program (FSMP) Sustainability, Livability, and Equity (SLE) research team at San Diego State University conducted human-centered cognitive/image mapping exercises with houseless individuals in San Diego and Los Angeles, based on principles set forth by Kevin Lynch's "Image of the City" (Lynch, 1960). This research chronicles the everyday patterns that were found among the maps and surveys which: a) applies human-centered approaches toward understanding what creates their home territories and communities, and b) gives useful insight on how we should provide better housing, accessibility, and services to the houseless.

This research uniquely captures the experiences of the houseless. Principally, we were able to learn about how the houseless perceive the environment of their daily lives – what places are important to them, and what barriers exist. Essentially we were looking at all the critical elements of their home territories – where they find food, water, satisfy their toilet needs, charge their phones, socialize, spend time with friends, etc. In sum, we captured the key components of what could be considered their homes. Allowing them to subjectively recreate their experiences through cognitive mapping enables us to gain an empathetic understanding of their daily endeavors and an opportunity to address their needs through human-centered design approaches.

Specifically, to conduct our research we went out into the field and asked houseless individuals to draw maps (on blank pieces of paper) of their surroundings and daily routines, which were marked with symbols to identify important locations. We then had them mark the important locations on printed maps so we could then geo-code this information.

Thus far, over 100 total maps have been gathered - about 90% were drawn in the San Diego area and about 10% were drawn in the Los Angeles area. From our review, we have found 13 recurring patterns. One of them is that the houseless often travel in regular routes throughout their day, sometimes using transit or bicycling, but often on foot. This speaks to the need for services to be close to where the houseless live to support their mobility restrictions. Some participants were employed, with some choosing to work to collect recyclables or to help clean floors, streets, or shops they frequented. Parks and alleys were marked as places of importance as they offered safe spaces to congregate and travel through. Some important additional findings include the need for safe storage, adequate toilet access, & better relationship with law enforcement.

This work can ultimately help promote better quality of life for the houseless by helping design and plan for better shelters and services. Through better access to services and opportunities and better ways to help them meet their most critical needs, the home territories and lives of the houseless can be justly improved.

It's not so much about what the maps say about the houseless, but what they say about us. Many see the homeless as a problem, an eyesore, something to be "solved" by being removed and simply swept away. These maps show the humanity of people at the center of their own world trying to make things work day-to-day in what we've come to call through our research, their "homes".

More here: bit.ly/HouselessMappingProject

Citations

- Lynch, Kevin. 1960. *The Image of the City*. MIT Press
- Popova Y. B. (2014). Narrativity and enaction: the social nature of literary narrative understanding. *Frontiers in psychology*, 5, 895. <https://doi.org/10.3389/fpsyg.2014.00895>
- Henry, M., de Sousa, T., Roddey, C., Gayen, S. & Joe, T. (2021). The 2020 Annual Homeless Assessment Report (AHAR) To Congress. The U.S. Department of Housing and Urban Development. Retrieved November 1, 2021, from <https://www.huduser.gov/portal/sites/default/files/pdf/2020-AHAR-Part-1.pdf>
- Appleyard, Bruce. 2017. "The Meaning of Livable Streets to Schoolchildren: An Image Mapping Study of the Effects of Traffic on Children's Cognitive Development of Spatial Knowledge." *Journal of Transport & Health, Walking and Walkability: A review of the evidence on health*, 5 (June): 27–41. <https://doi.org/10.1016/j.jth.2016.08.002>.
- Warth, G. (2021, April 21). Report: Number of new homeless people in county doubled in 2020. *San Diego Union Tribune*. <https://www.sandiegouniontribune.com/news/homelessness/story/2021-04-21/report-number-of-newly-homeless-people-in-county-doubled-in-2020>

Key Words: homeless, image maps, urban design, services, social welfare

PLANNING FOR AND REACTING TO FOOD EMERGENCIES: LESSONS FROM TORONTO AND BEYOND

Abstract ID: 1681

Individual Paper Submission

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Planners have a long history of involvement in anticipating potential emergencies through land use controls and other plans for evacuation and displacement, and even more so, involvement in addressing the impacts of emergencies, from plans for temporary settlements of refugees to reconstruction schemes for devastated neighborhoods and cities. However, while their work has dealt with a variety of urban systems over the years, the impacts of emergencies on food systems was largely left to other actors, whether offices of emergency management or disaster relief agencies. The rise of food system planning as an area of interest for planners has generally not focused on the role of sudden disruptions, whether ‘natural’ disasters, wars or epidemics.

The COVID-19 pandemic has been such a disruption at the global scale, and one that highlighted a number of deficiencies in the global food system as well as deficiencies that are grounded in the urban context – as has long been warned by food advocates (Raja 2020). Municipal actors have played a critical role in the response mechanisms to this massive disruption, including the sudden shocks to the urban food system. Meanwhile, community-based food system actors also undertook dramatic shifts in their work, whether closing, pivoting, expanding, or embarking in new directions. These shifts not only challenged both sets of actors – they also enabled new modes of operation, new flexibility, and new forms of collaboration (Cohen 2022; Jones, Hill and Beardmore 2022). This became a moment and space for highlighting the possibilities of a ‘hybrid governance’ of urban food systems (Manganelli 2022).

This paper will consider where plans, planning and planners fit within anticipation of emergencies in relation to urban food systems, and particularly, where they fit in responses to such emergencies. It will use the experience of five large cities – Toronto, Vancouver, Baltimore, New York City and Milan – to examine what preparedness (if any) was in place for the impacts of major emergencies on their food systems, and where planning may have laid a foundation for responses during COVID-19. It will then focus on the current pandemic to analyze how the hybrid responses that were rapidly put in place in different cities related to the planning frameworks in place and the work of planners. It will conclude with some directions that can help connect food systems planning and emergency planning, while highlighting how the synergy seen in the hybrid governance during crisis can inform the work of planners and other municipal actors beyond the emergency mode provided by the pandemic.

This analysis is largely based on research undertaken through a university-city partnership. The project assessed emergency response preparedness in food security practice and investigated the responses of municipal and community-based actors to address heightened food insecurity during the outbreak and recovery; it compared Toronto to the four other cities to evaluate how equity and resiliency concerns were considered before and during the outbreak. At its center were 52 interviews with 28 actors from community-based food programs in Toronto and 24 municipal actors from the five cities (including planners).

Just months before the pandemic hit, Toronto City Council had directed all City Divisions to develop a “food lens” for their respective work by the end of 2020 “to leverage divisional work to support the objectives of eliminating food insecurity and addressing the climate emergency across the City of Toronto” (City of Toronto 2019). The City’s Planning Department could have used this impetus to connect food system planning and emergency planning, ahead of a wave that it did not see coming.

Citations

- Cohen, N. (2022). Food Crisis as a Tool for Social Change: Lessons from New York City’s COVID-19 Response. *Urban Governance* (in press). <https://doi.org/10.1016/j.ugj.2022.03.001>.
- Jones, M., Hill, S., and Beardmore, A. (2022). The Value of Local Food Partnerships: Covid and beyond. UK Sustainable Food Places Evaluation Report. The University of the West of England. https://www.sustainablefoodplaces.org/news/uwe_report_value_of_food_partnerships_apr22-/.
- Manganelli, A. (2022). *The Hybrid Governance of Urban Food Movements: Learning from Toronto and Brussels*. Springer.
- Raja, S. (2020). Planning and pandemics: COVID 19 illuminates why urban planners should have listened to food advocates all along. *Agriculture and Human Values*, (37), 553–554. <https://doi.org/10.1007/s10460-020-10090-0>.
- City of Toronto (2019). Toronto Board of Health. ‘Toronto Food Policy Council 2019 Annual Report.’ 28 October. <http://app.toronto.ca/tmmis/viewPublishedReport.do?function=getDecisionDocumentReport&meetingId=15404>.

Key Words: food systems, emergency planning, hybrid governance, Toronto, COVID-19

MANDATING HEALTH EQUITY THROUGH PLANNING PRACTICE: A CRITICAL DISCOURSE ANALYSIS OF GOVERNMENT POLICIES REGULATING PLANNING FOR HEALTHY COMMUNITIES

Abstract ID: 1692

Individual Paper Submission

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Health inequities pertain to the unequal distribution of health status and resources for health that are both avoidable and unfair (World Health Organization, 2018). According to the World Health Organization (2018), health inequities can be positively influenced by government policies. Similarly, policies can be designed to specifically and explicitly prioritize marginalized populations (e.g., those experiencing health inequities) (Young, 1990). The potential for various government entities to influence health is reflected and reinforced by recommendations for those working outside of the healthcare sector to consider the impact of their work on the health of individuals and populations through a Health in All Policies approach (Corburn, 2017). In alignment with this perspective, planning practitioners, for example, have the potential to impact health equity through the provision of community resources (Corburn, 2017), such as facilitating access to basic needs (e.g., affordable housing, nutritious food) and managing well-being through infrastructure (e.g., green and blue spaces, walkable communities). Yet, a recent study indicated that opportunities for planning practitioners to support healthy community development may be limited by policies, either because such policies do not exist or because of policies with competing objectives (Pineo et al., 2020).

The purpose of this paper is to interrogate governmental policies that promote health in planned communities of the Region of Waterloo, Ontario, Canada. This case study site was selected due to the local range in urbanization and the multicultural populace, allowing for comparison of policies across landscapes within a highly diverse and regulated space. Planning policies from four levels of government and enacted since the World Health Organization's implementation of the Healthy Cities initiative in 1980 are retrieved in order to trace how healthy community priorities have changed over time. A critical discourse analysis approach guided by Bacchi's (2009) Problem Representation Framework is used to evaluate the policies over space and time. This framework facilitates the investigation of power by looking at the issues present, the assumptions embedded, and the populations considered within each policy (Bacchi, 2009).

The findings of this research expose the limits of existing planning regulations for acting on health inequities and highlights the power rooted within these policies that ultimately influence the health of residents in planned communities (Bacchi, 2009). Further, the paper discusses opportunities for various levels of government to promote healthy communities while providing suggestions to empower planners with clear mandates (Corburn, 2017). Planners may use the findings of this work to carefully reflect on their own practice as advocates and change agents in their community with respect to the health and health inequities of population sub-groups. Finally, the paper concludes with a discussion of future possibilities for planners to positively influence health and limit health inequities, as well as avenues for future research to explore indirect policies guiding the planning of healthy communities and the effective engagement of planners in contributing to place-based health decisions.

Citations

- Bacchi, C. (2009). *Analysing policy: What's the problem represented to be*. Pearson Education.
- Corburn, J. (2017). Urban place and health equity: Critical issues and practices. *International Journal of Environmental Research and Public Health*, 14, 117-126.
- Pineo, H., Zimmermann, N., & Davies, M. (2020). Integrating health into the complex urban planning policy and decision-making context: A systems thinking analysis. *Palgrave Communications*, 6(21), 1-14.
- World Health Organization. (2018). Health inequities and their causes. <https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes>
- Young, I. M. (1990). *Justice and the politics of difference*. Princeton University Press.

Key Words: Healthy communities, Health equity, Policy, Critical discourse analysis

COMMUNITY PERCEPTIONS OF SMALL-TOWN FOOD ENVIRONMENT, HOME GARDENING, AND FOOD EQUITY

Abstract ID: 1705

Individual Paper Submission

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The purpose of this paper is to understand community perceptions of local food environment, community food security (CFS), and food equity in a small town food landscape. Food equity ensures that all people have the right to grow, procure, and/or consume healthful, affordable, and culturally preferred foods. Researchers have outlined several key factors a food system must achieve to be considered equitable: nutritional adequacy; food affordability; cultural preferences; social and spatial equity in the food system; and people's agency in the food system. For planning to address issues of food equity, it must thus empower the individuals who are typically the victims in/of inequitable food systems to serve as local experts in discussing those issues and in developing solutions. Still, community food production resources may be unevenly distributed across areas limiting the successful activity of home gardening. Participation in home gardening is highly linked to home ownership and income; some or all aspects of economic advantage determine whether a person can participate in food self-provisioning.

Within this context, we ask the following three research questions: (1) Does community perceptions of food equity and community food security vary based on their micro-level location, income, and race? (2) Do residents consider home gardening as a tool to address food inequity? (3) Why do some residents succeed with home gardening while others face major challenges?

In this study, we followed a community-based participatory research approach, a form of shared leadership/participatory research under the Community Engaged Research (CEnR) framework, by forming partnerships with 15 community members including residents and representatives of cross-sector and cross-disciplinary organizations in a small college town in New Jersey. To answer our research questions, we interviewed 30 residents and stakeholders. We recruited 30 residents in a three-month home-based vegetable gardening program, which included customized gardening workshops and health coaching activities. We did a pre- and post-program surveys and follow-up interviews of the 25 participants who completed the program. The results presented here are based on an analysis of the survey and interview data using descriptive statistics, content analysis, and coding.

Our initial analysis has revealed that resident perception of place-based social issues vary according to their micro-level location (e.g., a block) regardless of their income or race. Residents living in blocks that do not have easy access to healthful and affordable food options have more negative perceptions of the status of food equity in their community. Residents in this town do not view the practice of home gardening fulfilling a neoliberal agenda. Some of our gardening program participants were more successful than others. Those who did not make a good progress with the program faced several issues, including lack of access to land, lack of time, lack of planning, and lack of commitment. Participants generally mentioned many challenges they faced with the space requirement, sun exposure, pest/animal control, weather pattern, and cost. Our analysis of interviews included the following themes directly connected to the concept of food equity: food culture, equitable access to land/food, fair and equitable prices and wages, human health, ecological sustainability, transportation access, access to health information, home resources, natural resources, technologies, government structures, laws, and policies.

We conclude by summarizing the key findings and a discussion on how our understanding of public perceptions related to food equity, community food security, and local food environment may become useful in creating planning and policy decisions at the local level.

Citations

- Anderson, C. R., Bruil, J., Chappell, M. J., Kiss, C., & Pimbert, M. P. (2021). *Agroecology now! Transformations towards more just and sustainable food systems*. Palgrave Macmillan. <https://doi.org/10.1007/978-3-030-61315-0>
- Beavers, A. W., Atkinson, A., & Alaimo, K. (2020). How gardening and a gardener support program in Detroit influence participants' diet, food security, and food values. *Journal of Hunger & Environmental Nutrition*, 15(2), 149-169.
- Chalmin-Pui, L. S., Griffiths, A., Roe, J., Heaton, T., & Cameron, R. (2021). Why garden?—Attitudes and the perceived health benefits of home gardening. *Cities*, 112, 103118.
- Minkler, M. & Wallerstein, N., Eds. (2008). *Community-Based Participatory Research for Health: From Process to Outcomes*, 2nd Ed. Jossey-Bass Publishers, New York.
- Mui, Y., Khojasteh, M., Judelsohn, A., Sirwatka, A., Kelly, S., Gooch, P., & Raja, S. (2021). Planning for regional food equity. *Journal of the American Planning Association*, 87(3), 354-369. doi:10.1080/01944363.2020.1845781

Key Words: home gardening, food equity, food justice, community food security, local food environment

PERCEIVED AND OBJECTIVE MEASURES OF AGE-FRIENDLY COMMUNITY

Abstract ID: 1736

Individual Paper Submission

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Background

Globally, there are about 720 million people in the world aged 65 years or over, and that number is expected to double in the next three decades (UN, 2020). Because the risk of developing chronic health conditions increases as people age, this demographic shift will put an increasing pressure on social and health care systems (Prince et al., 2015). In response to these challenges, increased attention has been given to the WHO's Age-Friendly Cities and Communities (AFCC) concept that focuses on local actions that create age-friendly environments to help older adults remain healthy and active in their own communities (WHO, 2007). However, there is still little consensus on how age-friendliness should be measured and operationalized, and how different measures contribute to our understanding of an age-friendly environment and its relationship to older adults' health.

Objectives

The objectives of this research are to examine perceived (e.g., people's perception) and objective (e.g., geographic data) measures of an age-friendly environment and assess their associations with older adults' health. Furthermore, this research examines whether the association between the age-friendly environments and self-reported health differs by race/ethnicity, socioeconomic status, and sex.

Methods

This research involves secondary data analysis of two data sets, the 2017 AARP Age-friendly Community Surveys and AARP Livability Index. The primary outcome is the self-rated health measure from the AARP Community Survey. The age-friendly environments are characterized by two types of measures, perceived and objective measures. For analysis, we first assess the discrepancy between the perceived and objective measures of age-friendly environment, using a Wilcoxon t-test and an Intraclass Correlation Coefficient (ICC) test. We then examine associations of perceived and objective measures of the age-friendly environment with self-reported health. Lastly, we explore potential moderating effects by including interaction terms or conducting effect modifications by race/ethnicity, socioeconomic status, and gender.

Implications

This research seeks to provide deeper insights into the characteristics of age-friendly communities that matter to older adults. The results will inform policymakers and practitioners for designing place-based interventions to promote the health and wellbeing of older adults.

Citations

- Prince, M. J., Wu, F., Guo, Y., Robledo, L. M. G., O'Donnell, M., Sullivan, R., & Yusuf, S. (2015). The burden of disease in older people and implications for health policy and practice. *The Lancet*, 385(9967), 549-562.
- United Nations. (2020). *World Population Ageing 2020 Highlights*. United Nations; Geneva, Switzerland.
- World Health Organization. (2007). *Global Age-Friendly Cities: A Guide*. World Health Organization; Geneva, Switzerland.
- Murtagh, B., Cleland, C., Ferguson, S., Ellis, G., Hunter, R., Rodriguez Añez, C.R., Becker, L.A., Hino, A.A.F. and Reis, R.S. (2022). Age-friendly cities, knowledge and urban restructuring. *International Planning Studies*, 27(1), 62-76.
- Davern, M., Winterton, R., Brasher, K., & Woolcock, G. (2020). How can the lived environment support healthy ageing? A spatial indicators framework for the assessment of age-friendly communities. *International Journal of Environmental Research and Public Health*, 17(20), 7685.

Key Words: Age-friendly communities, Measurement, Health, Older adults

EXAMINING THE COMMUNITY-LEVEL CONTEXTS OF PUBLIC SCHOOL CLOSURES, AND THE FATE OF CLOSED SCHOOL PROPERTIES, IN ONTARIO, CANADA

Abstract ID: 1755

Individual Paper Submission

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Planners have long recognized that public schools are essential elements of complete and liveable communities [1]. And yet, over the past decade, a growing number of public schools have been permanently closed across Canada, particularly in Ontario, owing to declining enrolments, aging infrastructure, and reduced government funding that is tied to enrolment numbers [2]. Ontario's Ministry of Education's Pupil Accommodation Review (PAR) guidelines

direct public school boards to assess the potential impacts of school closures on student learning opportunities and school boards' budgets [3], despite pleas from local stakeholders for more comprehensive analyses of the consequences of closures on surrounding communities [4]. The lack of attention paid by school boards to these broader consequences have led some communities in Ontario, including rural and lower-income communities, to wonder if they are being disproportionately targeted for school closures and to express concerns about the long-term liveability of their community without a school [5]. These concerns triggered intense public criticism of PAR processes, leading the Ontario government to introduce a moratorium on PARs in 2017 so that the guidelines could be revised.

While this moratorium remains in place nearly 5 years later, little is known about the characteristics of the communities in which school closures have taken place in Ontario and the fate of these closed school properties. Accordingly, the objective of this study was to document the scope of school closures in Ontario since 2011, the socio-demographic profiles of the communities in which these closures took place, as well as the current use of closed school properties. Comparable details for open school locations and surrounding communities were also gathered, to enable comparisons between communities where schools have closed to those where schools have remained open. All of these details were compiled into an SPSS dataset, and analyzed using descriptive statistics and Chi-squared tests.

A total of 406 publicly funded schools in Ontario were closed since 2011, and 4,825 schools are currently open. Of the closed schools, 27% were located in rural communities (i.e., population of under 10k), compared to just 15% of currently open schools ($p < 0.001$). Communities in which schools closed were more likely to have the highest levels of material deprivation (25% for closed school communities vs. 18% for open school communities) and social deprivation (23% vs 16%) ($p < 0.001$). The closed school properties have been repurposed in a range of ways; 16% have been converted to some form of community use, while another 16% are being used for educational purposes (typically private), and 11% have become residential properties. Of the 88 closed school properties that are currently sitting dormant or under construction, 59% are slated for residential development. There was little variation in the fate of closed school properties by community size.

This study offers critical insights regarding the contexts and consequences of public school closures in Ontario. Specifically, the findings suggest that rural and more deprived communities have indeed experienced disproportionately more public school closures in Ontario since 2011. These are communities that likely have fewer resources to mitigate harms arising from the loss of these community assets, which raises important questions about the equity implications of PAR processes in Ontario. However, the findings also indicate that closed school properties are often repurposed into other uses that may offer benefits to the wider community, such as parks, community centres, and commercial spaces. More research is needed to understand how these repurposed properties contribute to the liveability of these communities.

Citations

- 1. Vincent J. Public schools as public infrastructure: Roles for planning researchers. *Journal of Planning Education and Research*. 2006;25:433-437.
- 2. People for Education. School Closings 2017. Toronto, ON: People for Education; 2017. <https://peopleforeducation.ca/wp-content/uploads/2017/08/School-closing-report-2017.pdf>
- 3. MOE. Pupil accommodation review guideline. Toronto, Ontario: Ministry of Education, Government of Ontario; 2015.
- 4. OFA. Education. Toronto, ON: Ontario Federation of Agriculture; 2022. <https://ofa.on.ca/issues/education/>
- 5. Gollom, M. How rural school closures are 'ripping the heart out of the community'. CBC News. June 19, 2017. <https://www.cbc.ca/news/canada/rural-school-closures-1.4157059>

Key Words: school closures, asset management, deprivation, livability, Ontario

CAPTURING URBAN PUBLIC SPACE EXPERIENCES AND IN-SITU MENTAL WELLBEING FOR INDIVIDUALS LIVING WITH MENTAL ILLNESS

Abstract ID: 1757

Individual Paper Submission

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BACKGROUND: It has become increasingly vital to promote positive mental wellbeing in cities as urban residency is increasingly associated with poor mental health, linking urban public space characteristics and usage to mental wellbeing (CUDMH, 2019). Collectively, this research seems to present a 'universal' checklist of targeted urban design features to support the mental wellbeing of the general population. Less is known about how the effects of place may differently affect subpopulations, including those who may be most at risk of experiencing lower mental wellbeing

(like individuals living with mental illness), further entrenching inequalities of public space accessibility and its psychosocial benefits. Individuals living with mental illness may especially benefit from a targeted understanding of the wellness impacts of frequenting public spaces. As Toronto residents aged 18-29 are particularly at risk of experiencing lower mental wellbeing (CAMH, 2020), there is a pertinent need for further research into how urban public spaces may shape their experiences.

RESEARCH OBJECTIVE: Understand how young Torontonians living with mental illness perceive public spaces and the impact on their mental wellbeing through three themes already identified in the literature: public space as offering connection to nature; as promoting physical activity; and as facilitating social interaction.

APPROACH: Employing a social-ecological approach (Francis et al., 2012), this study recognizes the intersectional relationship between individuals and their socio-spatial environments, shaping peoples' unique perceptions of and experiences within public space. This study used experience sampling methods (ESM), a reliable data collection method that offers an opportunity to accurately study people during everyday life by capturing self-reports of experiences as they occur in-situ (Doherty et al., 2014). It removes the need for direct interaction with a researcher, reduces researcher interference and need for participant recall, all important in studying public space experiences of young adults with mental illness.

METHOD: Participants (Toronto residents aged 18-28 with diagnosed mental illness) used a smartphone application to capture in-situ understandings of their everyday experiences in public spaces over two weeks. Specifically, this research captured in-the-moment experiences, asking questions about the three main themes. This included multiple-choice sentiment questions (e.g., happy vs. sad), open-ended questions on how the spaces made them feel, and asked participants to take photos or videos to illustrate their written responses.

FINDINGS: This research revealed that spending time in a public space that fosters a sense of social connection most significantly enhanced mental wellbeing for this group, with participants noting the thematic intersectionality shaping their subjective experiences. Some participants felt connected to others without direct social interaction in the spaces they visited, while others felt secluded and isolated in spaces with similar spatial characteristics. Additionally, participants felt comfortable being active in public spaces with sports amenities and people exercising - yet felt self-conscious doing so where it could attract unwelcome attention. Participants described natural features, especially trees and open fields, as a source of relaxation, comfort, safety, and familiarity. Participants also associated lack of greenspace in the spaces they visited with a deficient sense of community or belonging. Participating in the research study may have also garnered psychosocial benefits, having increased participants' motivation to visit public spaces.

RELEVANCE: The planning research landscape has been critiqued for lacking diverse participants by age and disability, thus perpetuating the exclusion of spatially marginalized groups and resulting in poor evidence-based practices (Stafford & Baldwin, 2018). This study empirically adds to the existing literature on mental wellbeing for the general population in public spaces by offering insight into the lived experiences of a frequently marginalized group - people living with mental illness. These insights offer planning practitioners tangible ways of actualizing inclusion in public space design and programming.

Citations

- Centre for Addiction and Mental Health (CAMH). (2020). Mental Health in Canada: Covid-19 and Beyond.
- Centre for Urban Design and Mental Health (CUDMH). (2016, May). Mind the GAPS Framework: The Impact of Urban Design and Mental Health and Wellbeing. Centre for Urban Design and Mental Health. Retrieved from <https://www.urbandesignmentalhealth.com/mind-the-gaps-framework.html>
- Doherty, S. T., Lemieux, C. J., & Canally, C. (2014). Tracking human activity and well-being in natural environments using wearable sensors and experience sampling. *Social Science & Medicine*, 106, 83-92. doi:10.1016/j.socscimed.2014.01.048
- Francis, J., Wood, L. J., Knuijman, M., & Giles-Corti, B. (2012). Quality or quantity? Exploring the relationship between Public Open Space attributes and mental health in Perth, Western Australia. *Social Science & Medicine*, 74(10), 1570-1577. doi:10.1016/j.socscimed.2012.01.032
- Stafford, L., & Baldwin, C. (2018). Planning walkable neighborhoods: are we overlooking diversity in abilities and ages? *Journal of planning literature*, 33(1), 17-30. doi:10.1177/0885412217704649

Key Words: public space, mental illness, nature, physical activity promotion, social connectedness

A TALE OF TWO CITIES: UNPACKING THE SUCCESS AND FAILURE OF SCHOOL STREET INTERVENTION LAUNCHES IN TWO CANADIAN CITIES

Abstract ID: 1764

Individual Paper Submission

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To promote children's wellbeing, a growing number of cities are looking for ways to become more child-friendly (UNICEF, 2004), and street-based interventions that enable children to engage in outdoor free play and independent mobility are innovative strategies that support child-friendly cities. School streets are one such innovation that involve closing streets around elementary schools to vehicular traffic before and after the school day to improve children's safety as they come and go from school, while providing opportunities for children to safely play and socialize on the street with friends and peers (MUEC, 2020). Despite their apparent simplicity, launching these interventions in communities dominated by automobiles is enormously challenging and success is not guaranteed. However, little is known about why these interventions are successfully launched in some places but not others.

As part of the Levelling the Playing Fields project, School Streets were planned for a period of one year during the 2021-2022 school year in two Canadian cities (Montréal, Québec and Kingston, Ontario) in neighbourhoods with comparable socio-economic profiles. Site selection, stakeholder and community engagement and mobilization, and logistics planning activities were led by implementation partners in both cities, using the same participatory urban planning approach (CEUM, 2015). However, only the Kingston School Street intervention was successfully launched. Using a critical realist evaluation methodology (Pawson & Tilley, 1997), this paper documents the contextual elements and key mechanisms that enabled and constrained the launch of these School Streets in these cities.

We employed a comparative case study approach to study the contexts and mechanisms surrounding the School Street interventions in Montreal, QC and Kingston, ON. Data were collected using two qualitative methods: document analysis (i.e., emails, meeting notes, and other relevant reports produced since the beginning of the project in 2019) and semi-structured interviews with key stakeholders. We conducted a qualitative thematic analysis to code the data and used the context-mechanism-outcome framework, treating the launch of the School Streets as the intended outcome.

For both sites, community-based not-for-profits led the mobilization of elected officials, municipal staff, and school administrators to garner support for the interventions, which was characterised by frequent communication and regular events. Establishing trust, improving participants' understanding of the project, raising awareness about the need for innovation, creating a shared vision of the intervention, attributing roles, and resolving conflicts were key mechanisms at play during the mobilization phase in both cities. In Kingston, pre-existing relationships among the stakeholders and the presence of a "champion" school principal appear to have facilitated the processes and ultimately, the launch of the School Street. While the mobilization phase ultimately facilitated a change in the municipal by-laws to allow School Streets in Montreal, the inability to convince a school principal of the benefits of the intervention prevented the parents and, eventually, the whole community from moving forward with the intervention in that city.

School Streets hold considerable promise for promoting child-friendly cities. However, mobilizing community and stakeholder support for such initiatives requires considerable effort and success is not guaranteed. The findings from this study offer critical insights for planning practitioners regarding the contexts and mechanisms that support the launch of street-based initiatives, while broadening our understanding of the ways in which critical realism can be applied in evaluation research.

Citations

- CEUM. 2015. Participatory urbanism: Developing the city with and for its citizens. Montreal, Quebec: Montreal Urban Ecology Centre. https://urbanismeparticipatif.ca/sites/default/files/upload/document/rqv_guide_urba_parti_fra.pdf
- MUEC. 2020. Review of inspiring case studies: Play Streets and School Streets. Montreal, Quebec: Montreal Urban Ecology Centre.
- Pawson R, Tilley N. 1997. Realistic Evaluation. Thousand Oaks, CA: Sage.
- UNICEF. 2004. Building Child Friendly Cities: A Framework for Action. Florence, Italy: UNICEF Innocenti Research Centre. <https://www.unicef-irc.org/publications/pdf/cfc-framework-eng.pdf>

Key Words: child-friendly cities, school streets, implementation, realist evaluation, comparative case study

MOVE TO PROSPER: PATHWAYS TO MATERNAL & CHILD HEALTH IMPROVEMENT

Abstract ID: 1872

Individual Paper Submission

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Housing quality and neighborhood conditions have a profound impact on maternal and child health. In the context of the U.S. housing market, lower-income families are more likely to live in distressed housing and neighborhood environments. The likelihood of living in distressed housing or neighborhood environments is even greater for children from marginalized racial and ethnic populations. Although the literature on housing quality and child health literature is rich, there is limited research exploring the processes of how fair housing strategies, such as housing mobility, directly impact child health.

Housing mobility programs are designed to expand housing opportunities in healthier environments for lower income families. These programs utilize various forms of housing assistance to create affordable rental opportunities for families seeking to relocate from distressed neighborhood environments to high resource neighborhoods. Mobility programs generally seek to provide housing opportunities in neighborhoods that are safer, have high resource services (such as local educational systems) or are closer to employment opportunities. Housing mobility programs aim to remedy the multiple fair housing barriers facing low income communities and communities of color.

The following case analysis identifies the mechanisms influencing physical, mental and emotional health improvement for parents and children participating in a housing mobility program. Our study focuses on Move to PROSPER (MTP), a pilot housing mobility program in Columbus, OH. MTP provides access to safe housing in high resource neighborhoods and extensive life coaching. Participants volunteer for the program, agreeing to participate for three to four years of life coaching and other programming while receiving rental assistance for market rate rental units in high resource neighborhoods in the metropolitan region. The study utilizes longitudinal data generated from the experiences of ten families and 18 children over the course of four years to develop a conceptual model of the pathways to child health improvement triggered by a housing mobility intervention.

We find four dominant pathways (indoor air quality improvement, environmental stress reduction, family stress reduction, and enhanced resource access) that contributed to health improvements for families in the MTP housing mobility program. Our analysis finds a temporal aspect to the emergence of positive outcomes for children in the program. Early physical health impacts on children occurred immediately after relocation. Once established in new communities, improved educational outcomes, economic outcomes and socio-emotional health would emerge in the later years of program intervention. We conclude by discussing the intersection of our conceptual model with existing literature and the implications for planning to support maternal and child health.

Citations

- Sandel, M. Phelan, K. Wright, R. Hynes, HP. & Lanphear, BP. (2004). The effects of housing intervention of child health. *Pediatric Annals*. July; 33(7):474-481.
- Acevedo-Garcia, D., Osypuk, T. L., Werbel, R. E., Meara, E. R., Cutler, D. M., & Berkman, L. F. (2004). Does housing mobility policy improve health? *Housing Policy Debate*, 15(1), 49–98.
- Acevedo-Garcia, D., Noelke, C., McArdle, N., Sofer, N., Hardy, E. F., Weiner, M., Baek, M., Huntington, N., Huber, R., & Reece, J. (2020). Racial And Ethnic Inequities In Children's Neighborhoods: Evidence From The New Child Opportunity Index 2.0. *Health Affairs*, 39(10), 1693–1701. <https://doi.org/10.1377/hlthaff.2020.00735>
- Chetty, R., Hendren, N., & Katz, L. F. (2015). The Effects of Exposure to Better Neighborhoods on Children: New Evidence From the Moving to Opportunity Experiment. January. Working Paper Series, 21156
- Gale, Rebecca. (2018). Housing Mobility Programs And Health Outcomes, Health Affairs Health Policy Brief, June 7. DOI: 10.1377/hpb20180313.616232.

Key Words: Community Health, Housing, Community Development, Gender & Diversity

DIET QUALITY AND FRESH FRUITS AND VEGETABLES INTAKE: A STUDY OF THE DIMENSIONS OF ACCESS IN THE AFRICAN AMERICAN COMMUNITY IN LEXINGTON, KENTUCKY

Abstract ID: 1914

Individual Paper Submission

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In this study we investigate the independent and combined effects of objective and subjective dimensions of access to fresh fruits and vegetables and on diet quality as measured by the Healthy Eating Index among the African American community in a medium sized mid-western city. Utilizing a mixed-methods approach, we analyzed a more holistic

conceptualization of food access at the neighborhood scale. We found that diet quality was positively affected by the combined effects of the presence of fast-food stores, residents' age (35 years and older) and grocery stores within a 1-mile radius of residents' homes. Whereas fresh fruits and vegetables intake was positively affected by the joint effects of residents' age, Body Mass Index (BMI) above 30 (obese) and grocery store presence within the 1-mile radius. However, the combined effects of residents' BMI below 30 (non-obese) and grocery store presence within a 2-mile radius was negatively correlated with fruit and vegetable intake in residents. These findings strongly support more research to be conducted on the independent and combined effects of perception and objective measures on access to fresh fruits and vegetables and other variables to better understand the dynamics of the neighborhood food environment and how this impacts food-buying decisions.

Citations

- Usher KM (2015a) Valuing all knowledges through an expanded definition of access. *J Agric Food Syst Community Dev* 5:109–114
- Kwate NOA (2008) Fried chicken and fresh apples: racial segregation as a fundamental cause of fast food density in black neighborhoods. *Health Place* 14:32–44. doi: 10.1016/j.healthplace.2007.04.001
- Zenk SN, Lachance LL, Schulz AJ, et al (2009) Neighborhood retail food environment and fruit and vegetable intake in a multiethnic urban population. *Am J Heal Promot* 23:255–265
- Guenther PM, Kirkpatrick SI, Reedy J, et al (2014) The Healthy Eating Index-2010 Is a Valid and Reliable Measure of Diet Quality According to the 2010 Dietary Guidelines for Americans. *J Nutr* 144:399–407. doi: 10.3945/jn.113.183079
- Bodor JN, Ulmer VM, Dunaway LF, et al (2010) The rationale behind small food store interventions in low-income urban neighborhoods: Insights from New Orleans. *J Nutr* 140:1185–1188. doi: 10.3945/jn.109.113266.such

Key Words: diet quality, fresh fruits and vegetables, objective dimension, access, African American

EFFECT OF GREEN WALLS ON THE PSYCHOLOGICAL WELL-BEING OF PEDESTRIAN

Abstract ID: 1939

Individual Paper Submission

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Modern cities have faced a substantial level of land scarcity for green spaces, and in reaction to such condition, recently, greening vertical surfaces of building structures have attracted attentions in urban landscape. Plants absorb less heat compared to concrete, and make cooling effects through transpiration, thus alleviates the urban heat island effect (Balany et al., 2020). In addition, green walls provide aesthetic pleasure to pedestrians, as it is more accessible – even visually – than green roofs (Koch et al., 2020).

Most of the relevant studies have analyzed the cooling effect of green walls by measuring the operative temperature, transpiration of foliage and skin temperature (Zhang et al., 2019; Sedghikhanshir., 2022). Rather than physiological effects, only a few studies have analyzed psychological effects with some limitation to yield practical implication. First most of the studies have been conducted in indoor or virtual environment (Mostajeran et al., 2021). Limited number of studies used the actual green walls while most of the study used visual materials such as photos and videos (Mostajeran et al., 2021; Sedghikhanshir et al., 2022). The effects of the green walls, as we suppose, are made both physiologically and psychologically. First, green walls improve thermal comfort by lowering the body temperature through the cooling effect caused by transpiration of foliage. Second, green walls improve visual satisfactions or reliefs and consequently increases a comfort level.

Against this backdrop, we investigate the effect of green roof physiologically and psychologically, to discern which takes larger role in enhancing human comfort level, using electroencephalogram (EEG), the Profile of Mood States (POMS), heart rate and body temperature. EEG is a method of recording brain activity by observing neurotransmitters secreted from the cerebral cortex. EEG signals are classified according to the frequency domain, and each signal contains different physiological and psychological information. The brain wave measuring equipment to be used in this experiment is the Epoc X manufactured by Emotiv. We would analyze EEG through MATLAB's toolbox, EEGLAB. In addition, we would analyze the emotional changes of subjects through six indicators (stress, engagement, focus, interest, and relaxation) provided by Emotiv. The POMS was developed to measure mood changes of subjects with six factors: tension, anger, vigor, fatigue, depression, confusion and a total mood disturbance. We use K-POMS-B which was modified to suit South Korea culture. It consists of 30 items rated on a five-point Likert-like scale. In addition, during the experiment, we would measure the subject's heart rate and body temperature.

The study is conducted on the rooftop of Seoul National University, South Korea. In the site, three types of green walls are installed: a blank panel, a panel with living plants and a panel of artificial plants. A total of sixty healthy adults

participated in the study: 30 participants in Experiment 1 (panels without shade screen and mist spray) and 30 participants in Experiment 2 (panels with screen shade and mist spray). Each experiment involved four tasks. The general task order is: (1) blank panel task assessing participant's baseline state; (2) artificial plants panel task testing panel's visual effect on participant; (3) rear-living plants panel task testing panel's cooling effect on participant; (4) living plants panel task testing panel's visual and cooling effect simultaneously on participant. Each task consisted of staring at a panel for 7 minutes, filling out the POMS for 3 minutes. Through this study, we can discern which takes larger role in enhancing human comfort level between physiological and psychological effect of green walls.

Citations

- Balany, F., Ng, A. W., Muttill, N., Muthukumaran, S., & Wong, M. S. (2020). Green infrastructure as an urban heat island mitigation strategy—a review. *Water*, 12(12), 3577.
- Koch, K., Ysebaert, T., Denys, S., & Samson, R. (2020). Urban heat stress mitigation potential of green walls: A review. *Urban Forestry & Urban Greening*, 55, 126843.
- Mostajeran, F., Krzikawski, J., Steinicke, F., & Kühn, S. (2021). Effects of exposure to immersive videos and photo slideshows of forest and urban environments. *Scientific Reports*, 11(1), 1-14.
- Sedghikhanshir, A., Zhu, Y., Chen, Y., & Harmon, B. (2022). Exploring the Impact of Green Walls on Occupant Thermal State in Immersive Virtual Environment. *Sustainability*, 14(3), 1840.
- Zhang, L., Deng, Z., Liang, L., Zhang, Y., Meng, Q., Wang, J., & Santamouris, M. (2019). Thermal behavior of a vertical green facade and its impact on the indoor and outdoor thermal environment. *Energy and Buildings*, 204, 109502.

Key Words: Green walls, Outdoor Environment, Thermal comfort, Stress level, EEG

BEAT THE HEAT: ENGAGING COMMUNITIES TO BETTER PLAN AND PREPARE FOR EXTREME HEAT

Abstract ID: 2039

Individual Paper Submission

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The most recent climate assessment report highlights the urgent need for communities to increase their focus on both climate adaptation and climate mitigation.¹ Heat waves are projected to be one of the main climate crises impacting communities across the globe. In the United States, extreme heat is responsible for more fatalities annually than all other natural disasters combined.² Not only are heat waves increasing across cities in the United States,³ but unprecedented record-breaking heat wave events, such as the Portland heat wave of 2021, demonstrate the need for communities to create effective heat response protocols. Many cities across the United States including Midwestern cities are doing little to prepare for extreme heat. Understanding how heat waves impact local residents, and tailoring mitigation and adaption strategies to address increased heat exposure and vulnerability, enables communities to be better prepared for future extreme heat events.

In this paper, we describe a new state funded initiative: the *Beat the Heat* program. The *Beat the Heat* program is a two-year initiative working directly with two cities in Indiana (Richmond and Clarksville) to develop heat response plans tailored for their communities. The project begins with a community needs assessment. The community needs assessment consists of three parts: gathering community feedback through surveys, focus groups and heat observations; quantifying heat exposure using hyperlocal temperature mapping; and identifying priority areas for intervention. We describe the community needs assessment and detail our construction of two local heat vulnerability indices (HVI) and discuss strengths and difficulties in HVI creation for small communities. The community needs assessment is used to better understand how people in the community respond to extreme heat and identifies services and amenities residents prefer in their communities. It reveals how residents receive information about heat and uncovers social and neighborhood support structures present in the communities. We detail our process and methods for each protocol of the project and demonstrate how each city is using the community needs assessment to prototype heat response strategies for their community.

With temperatures increasing across Indiana, the *Beat the Heat* program highlights benefits of co-creating knowledge, protocols, and policies with communities. Working directly with local government leaders, we are creating tailored strategies designed to protect at-risk vulnerable residents. The communities working with the *Beat the Heat* program are not only preparing and empowering their local communities to respond to the challenges of extreme heat, but also pioneering a model that could guide heat mitigation strategies for other communities throughout the state of Indiana.

Citations

- M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegria, M. Craig, S. Langsdorf, S. Loschke, V. Moller, A. Okem, B. Rama H.O. Portner, D.C. Roberts, editor. IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press.,2022.
- Dana Habeeb, Jason Vargo, and Brian Stone. Rising heat wave trends in U.S. cities. *Natural Hazards*, 76(3):1651-1665, 2015.
- Ambarish Vaidyanathan, Josephine Malilay, Paul Schramm, and Shubhayu Saha. Heat-related deaths—United States, 2004–2018. *Morbidity and Mortality Weekly Report*, 69(24):729, 2020.

Key Words: Extreme Heat, Climate Mitigation, Climate Adaptation, Heat Response Plans, Vulnerable Populations

INTERSECTIONS (OR LACK THEREOF) OF THEORY AND FOOD SYSTEM PLANNING

Abstract ID: 2044

Individual Paper Submission

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Over the past two decades, the planning field has increasingly engaged in food systems research. The seminal article “The Food System: A Stranger to the Planning Field” brought food systems into the planning conversation and argued the discipline, by the nature of its focus on improvement of communities and the interconnections between various systems, must include food systems in its areas of study (Pothukuchi and Kaufman 2000). This call to action was met when the *Journal of Planning Education and Research* released a special issue on “Planning for Community Food Systems” (Kaufman et al. 2004). The articles from this issue paved the way for a body of work focused largely on the performance and empirical understanding of the food system. What this work lacked was a clear understanding of the context and motivation beyond broad conceptions of capitalism, efficiency, and social justice; it lacked a strong theoretical grounding. But why should we care about engagement with theory?

The issues planners seek to tackle within the food system are often thought of as “wicked problems” because of the challenges with problem formulation and solution identification, among other factors (Rittel and Webber 1973). This complexity necessitates a stronger theoretical foundation to clarify questions and identify where planners can and should intervene in the food system. In our paper, we trace the recent history of food systems planning through a systematic literature review, with elucidating case examples, to identify how theory has been both implicitly and explicitly used in food systems planning. We borrow concepts from related disciplines that are more advanced in their consideration of food systems, such as geography and sociology. We also discuss ideas such as food justice and food democracy, alongside more radical critiques (cf. Born and Purcell 2006). We find that while scholarship is evolving, as evidenced by the work of Raja et al. (2014) and others, an explicit recognition of theory in food systems planning is still new.

As the planning field works to build a more inclusive food system, this paper will strengthen the field’s scholarship by providing a more comprehensive understanding of how theory has and can enhance food systems research.

Citations

- Born, Branden, and Mark Purcell. 2006. “Avoiding the local trap: scale and food systems in planning research. *Journal of Planning Education and Research* 26 (2): 195-207.
- Kaufman, Jerome. L. (Ed). 2004. “Planning for Community Food Systems.” Special Issue, *Journal of Planning Education and Research* 23 (4).
- Pothukuchi, Kameshwari, and Jerome. L. Kaufman. 2000. “The Food System: A Stranger to the Planning Field.” *Journal of the American Planning Association* 66 (2): 113–24.
- Raja, Samina, Diane Picard, Solhyon Baek, and Cristina Delgado. 2014. “Rustbelt Radicalism: A Decade of Food Systems Planning Practice in Buffalo, New York (USA).” *Journal of Agriculture, Food Systems, and Community Development* 4 (4): 1–17.
- Rittel, Horst. WJ., and Melvin M. Webber. 1973. “Dilemmas in a general theory of planning.” *Policy Sciences*, 4 (2): 155-169.

Key Words: Food, Theory, Food Systems Planning

FOOD PRICE IMPACTS ON FOOD SECURITY: A REVIEW OF RECENT EVIDENCE ACROSS STAKEHOLDER CATEGORIES AND IMPLICATIONS FOR PLANNERS

Abstract ID: 2045

Individual Paper Submission

Abstract: The world market prices of staple crops (e.g., rice, maize, wheat, legumes) increased dramatically over 2006-07, 2010-11 and 2020-2022. This reversed the long-run pattern of declining farm-level real^[1] prices of food commodities since the past 50 years. Food prices are important for welfare since they determine the real income of the population. The food insecurity impacts of higher staple commodity prices are particularly significant for Low-and-Middle-Income Countries (LMICs), where poverty and food insecurity are highly concentrated. Low-income groups routinely spend more than half of their income on food consumption. As a result, rising food costs are impacting poverty, consumption patterns, maternal and child health and nutrition across LMICs.

At present, gaps persist in understanding intra-household (i.e., within household) and overtime (especially the short run) impacts of higher food prices across various stakeholder categories. Although the mechanisms to attain and maintain food security are constantly evolving, well-designed and well-targeted safety nets can only be achieved if the current knowledge gaps regarding food price effects at the household and individual levels can be addressed.

To summarize the existing knowledge about the welfare impacts of high food prices for different categories of stakeholders in LMICs and associated policy and planning implications, we conducted a systematic review of recent economic, planning, developmental, and sociological literature. The goals of this review are to provide a resource for the analysis of food price impacts on food security across a range of stakeholder categories in LMICs; summarize extant evidence regarding food price associations with poverty and food security issues in varying spatial and economic contexts in LMICs; and provide a framework for thinking about the role of food price analysis in research, intervention design and evaluation, and creation of public food security policy. We were guided by four main questions:

1. What is the recent evidence regarding the food security impacts of higher food prices and the associated methodological tools?
2. What are the food security impacts of higher food prices across stakeholder categories of net-food buyers (who buy more food than they sell) and net-food sellers (those who sell more food than they buy) at the household and individual levels in Global South countries?
3. What are the gaps in knowledge, policy and planning regarding the food insecurities generated by structural and seasonal changes in food prices?
4. How can research on the food security impacts of higher food price be improved in LMICs and what directions might future research on food security in LMICs in view of current gaps in understanding? Is there a role for community and regional planners in addressing these debates?

The analysis demonstrates that higher food prices espouse different welfare implications for different groups and regions in a country. For instance, food prices entail conflicting policy perspectives for farmers on the one hand (availability perspective) and for consumers (access perspective) on the other hand. This necessitates nuanced policy interventions and consensus-building across the various stakeholder categories. Moreover, causal evidence regarding the impact of food price fluctuations on males and females within a household, including information on associated coping strategies is notably lacking, especially for shorter time scales ranging from a few months to a year. In addition, findings from existing studies are undermined by methodological weaknesses. A strong case can be made for greater reliance on participatory and community-based research approaches propounded by planners for addressing such shortcomings. In addition, planners' technical skills and their expertise in mediating negotiations and agenda-setting related to politically and socially contentious issues such as food pricing can be important in addressing the present challenges.

[1] Nominal prices adjusted for inflation i.e., rising average prices.

Citations

- Headey, D. 2016. "The Impact of Food Prices on Poverty and Food Security." *Annual Review of Resource Economics*. Vol. 8:329-351.
- Ruel et al. 2010. "The Food, Fuel, and Financial Crises Affect the Urban and Rural Poor Disproportionately: A Review of the Evidence." *J Nutr.*; 140 (1):170S-6S.
- Slade, C., Baldwin, C., & Budge, T. (2016). Urban Planning Roles in Responding to Food Security Needs. *Journal of Agriculture, Food Systems, and Community Development*, 7(1), 33-48.
- Agarwal, B. 2013. "Food security, productivity and gender inequality." In: R. Herring, ed. *Handbook of Food Politics and Society*. New York: Oxford University Press. Print.

- Barichello, Richard and Rupananda Widanage, 2019. "Food Security in Rural Areas: Alternate Definitions, Measurement, and Gender Issues," Chapter 2 in Theresa W. Devasahayam, Ed., *Ensuring a Square Meal: Women and Food Security in Southeast Asia*. World Scientific: Singapore.

Key Words: Food Security, Intra-Household, Poverty, Food Prices, Community Engagement

EXAMINING SUBURBAN NEIGHBOURHOOD EXPERIENCES OF PEOPLE LIVING WITH DEMENTIA DURING COVID-19: A CASE STUDY OF OSHAWA, ONTARIO

Abstract ID: 2051

Individual Paper Submission

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Background: The WHO calls dementia "the leading cause of dependency and disability among older persons" and is an umbrella term describing symptoms like impaired memory, confusion navigating space, inability to focus, and issues with communication, reasoning, depth perception and judgement. Most environmental research on supporting PLWD takes place within congregate living settings, despite 2/3 of PLWD in Canada residing within the community. For PLWD, continued access to their surrounding neighbourhood has many benefits: improved mental/physical health, more social interaction, and sense of worth and dignity. This research is nascent and the COVID-19 pandemic has further compounded the need to study these experiences, as the pandemic has altered our access to amenities, physical activity levels and social interactions. For PLWD, it is acute - increased rates of social isolation, fear, and anxiety due to closure of social programs/activities, and interruptions in daily routines and social networks (Chirico et al., 2022, Cohen et al., 2020). COVID-19 has also disproportionately impacted our socio-spatial peripheries, prompting pleas to study the pandemic from the suburbs, instead of city centres, and from the perspective of marginalized folks. This study examines the influence of spatial arrangements and place on the wellbeing of six community-dwelling people living with dementia in Oshawa, Ontario during the COVID-19 pandemic.

Theoretical Framework: This research is informed theoretically by critical theories of urban planning, and the understanding of place as socio-spatial, and relational. Planning is not value neutral (Hamraie, 2013). This study is an opportunity to see the experiences of PLWD through the lens of the neighbourhood (Ward, Clark & Phillipson, 2021) and an expanded definition of care (Biglieri, 2021) during the COVID-19 pandemic. The pandemic has affected more than just access to these services, it has affected everyday routines in uneven ways (e.g. PLWD being more 'at-risk' than other groups, and thus more likely to restrict movement, which goes back to an ableist and ageist approach to policy).

Research Design: Using an exploratory cross case study and a variety of participatory methods (one-on-one semi-structured interviews, photovoice capture, GPS tracking and travel diaries), this study combines: (1) 'physical measures' of neighbourhood (through measuring activity-spaces and mobility patterns using GPS tracking, travel diaries and interviews) over time (by asking if this was normal, what has changed since the pandemic, what are they hoping will happen in the future); and (2) 'socio-spatial relational understandings' of the neighbourhood (through photovoice and semi-structured interviews) exploring the meaning of places, and how those places/people within them care for the PLWD and how they care for them. Analysis of the photovoice data indicates the importance of particular types of built spaces for PLWD during the pandemic in their neighbourhoods, including: green and blue spaces, proximity to infrastructures (e.g. healthcare, social care), places of remembrance and reminiscence, community connection spaces, and small personal displays in yards as a harbinger of joy. The restrictions to public spaces due to COVID-19 and busy, noisy road conditions were perceived as negative built environment aspects. Further, built environments produced feelings of both anxiety and comfort and joy, depending on its characteristics. From a social perspective, PLWD highlighted the importance of being known by more 'distant others' (the retail worker or pharmacist remembering who they were), being known by close others (family members, spiritual communities), and connections with more-than-human others (like pets). They also highlighted the negative impacts of COVID-19 restrictions on their previous ability to socialize in their communities.

Takeaways: This study worked with PLWD to identify socio-spatial barriers and supports, and will provide guidance to practitioners on creating inclusive neighbourhoods for PLWD moving forward in a 'post-pandemic' world.

Citations

- Cohen, G., Russo, M. J., Campos, J. A., & Allegri, R. F. (2020). Living with dementia: increased level of caregiver stress in times of COVID-19. *International Psychogeriatrics*, 1-5.
- Chirico, I., Ottoboni, G., Giebel, C., Pappadà, A., Valente, M., Degli Esposti, V., Gabbay, M., & Chattat, R. (2022). COVID-19 and community-based care services: Experiences of people living with dementia and their informal carers in Italy. *Health & Social Care in the Community*.

- Hamraie, A. (2013). Designing collective access: A feminist disability theory of universal design. *Disability Studies Quarterly*, 33(4).
- Ward, R., Clark, A. & Phillipson, C. (Eds.). (2021). *Dementia and place: practices, experiences and connections*. Policy Press.
- Biglieri, S. (2021). Examining everyday outdoor practices in suburban public space: the case for an expanded definition of care as an analytical framework. In *Care and the City* (pp. 88-100). Routledge.

Key Words: neighbourhood, wellbeing, dementia, suburban, COVID-19

Track 9 Posters

TOO OLD FOR RISKY PLAY? A CONCEPTUAL FRAMEWORK FOR LATER LIFE RISKY PLAY

Abstract ID: 1823

Poster

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Age-friendly community planning has become a pertinent policy issue for planning scholars and practitioners (Lee & Tan, 2019). The goal of age-friendly planning is to develop and maintain communities with supportive social and physical environments where older adults can age in place and continue to engage in community life (Scott, 2021). However, age-friendly planning has been criticized for being paternalistic, compounding ageist policies and practices, and problematizing later life (Joy, 2020). This paper broadens the theoretical and practical parameters of the age-friendly model to introduce a ludic lens to empower older adults to engage with their community and dismantle the limiting place-based and societal structural barriers to aging well. Specifically, we cross siloed disciplinary boundaries to call upon the child-friendly literature to explore the feasibility of risky play to support successful aging among older adults. Risky play is a form of play where participants face feelings of uncertainty and the potential of injury as they navigate environments that challenge their mental and physical limits (Sandseter, 2010). By engaging in activities that push these limits, older adults can strengthen their cognitive and physical functions, while mitigating risks associated with aging.

Our paper combines and expands age-friendly and risky play models to introduce a new conceptual framework for later life risky play. The framework details how the intellectual, emotional, and physical benefits of risky play can contribute to improved mental and physical wellbeing of older adults. In doing so, we demonstrate how the risky play concept is (and is not) compatible with current age-friendly planning policy and how it can be actualized into targeted community interventions to support individual older adult quality of life and broader community cohesion and wellbeing. This project is the first to examine the possibilities of risky play in age-friendly community planning. By advancing a conceptual model of later life risky play and articulating tangible recommendations for planning practice, the findings establish a new direction in age-friendly planning while contributing to the existing discourse on older adult wellbeing, loneliness, and best practices for outdoor spaces.

Citations

- Joy, M. (2020). *The Right to an Age-Friendly City: Redistribution, Recognition, and Senior Citizen Rights in Urban Spaces*. McGill-Queen's University Press.
- Lee, J. H., & Tan, T. H. (2019). Neighborhood Walkability or Third Places? Determinants of Social Support and Loneliness among Older Adults. *Journal of Planning Education and Research*.
- Sandseter, E. B. H. (2010). *Scaryfunny: A qualitative study of risky play among preschool children*. (Philosophiae Doctor), Norwegian University of Science and Technology, Trondheim.
- Scott, M. (2021). Planning for Age-Friendly Cities. *Planning Theory & Practice*, 22(3): 457–492

Key Words: age-friendly planning, risky play, older adults, ludic cities

ASSESSING ACTIVE AND HEALTHY COMMUNITY ENVIRONMENT USING PEDESTRIAN BODY RESPONSES TO ENVIRONMENT FEATURES WITH WEARABLE SENSORS

Abstract ID: 1893

Poster

Physical activity and walking can be facilitated or constrained by the conditions of built environment attributes. Residents are more active and walk more in neighborhoods that have good residential conditions, have sidewalks with few obstructions, are free from physical disorder and other safety issues, and in which locations, goods and services can be accessed by walking. Therefore the detection and collection of information about facilitators and barriers to walkable environment is a crucial element to effectively design active, safe and healthy community. Following the popularity of the research topic, a variety of pedestrian environment assessment metrics have been proposed and tested, but they are inconsistent, subjective and limited. Conventional approaches are perception interview, opinion surveys, or visual evaluation of built environment conditions. Researchers and local agencies mainly rely on field observation methods that utilize inspectors and audit questions to rate walking environment. These approaches are often influenced by respondents' emotion, experience and intimacy. Additionally these measures do not adequately capture the differences of various population groups, though barriers and facilitators to individuals' physical activity likely vary by age, physical ability, and gender. Therefore there is a critical need to develop an objective, efficient, and reliable assessment methodology.

To fill the research gap, we propose an innovative and noble approach to assess the built environment using physical body responses with wearable sensors and machine learning methods. A human interacts with environment, and a body response is the physical and automatic reaction of a body to a surrounding stimulus. Such responses can provide beneficial information that can be used to investigate the relationship between human's activities and built environments.

The objective of the research is to develop a reliable and efficient community assessment tool by integrating visual audits with sensing data measuring residents' body responses to their built environments in order to evaluate and improve the quality of these human-made spaces. It also investigates the interconnectedness among built environment conditions and body responses and walking behaviors. The research empirically identifies facilitators and barriers of walking environment.

The research findings contribute to the methodological improvement in walkable environment assessment. Previously unavailable neighborhood assessment data will be collected and analyzed using innovative geospatial technology and sensing platform. It also contributes to the knowledge territory of the interconnectedness among built environment features and physical activity.

Citations

- Ewing, R., Cervero, R. (2010). Travel and the built environment: A meta-analysis. *Journal of the American Planning Association*, 76, 265-294.
- Kim, J, Ahn, C, Nam, Y. (2019). The influence of built environment features on crowdsourced physiological responses of pedestrians in neighborhoods. *Computers, Environment and Urban Systems*. 75, 161-169.
- Daamen, W. and Hoogendoorn, S. (2005). Experimental Research of Pedestrian Walking Behavior, *Transportation Research Record*, 8128, 20-80

Key Words: Active and Healthy Community, Walkability, Human-Environment Interaction, wearable sensor

THE IMPACT OF COVID-19 LOCKDOWN ON EATING HABITS AND THEIR ASSOCIATION WITH SOCIO-DEMOGRAPHICS AND BUILT ENVIRONMENT

Abstract ID: 1978

Poster

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The COVID-19 lockdown has totally changed everyone's lifestyle and our eating habit is clearly one of those things that were affected. Studies on the eating habit changes during the pandemic commonly point out that our dietary behaviors became healthier: people have been eating more both in quantity and frequency, particularly snacks, sweets, and food with poor nutrition, but eating less fruits and vegetables. The sedentariness due to teleworking and home-schooling made it difficult for people to motivate themselves to keep their healthy, regular eating patterns. Moreover, the lockdown-induced, negative psychological states (e.g., anxiety, tension, stress, depression, or boredom) made people end up with high sugar intake and food addiction symptoms.

What is much less discussed in the literature is how the changes vary by different socio-demographic populations and built environments. Both socio-demographics and the built environment are essential factors that contribute to our eating behaviors: studies claim that people with lower educational background and income are more likely to have unhealthy dietary habits due to high priority on price and familiarity; race and ethnicity are significantly correlated with the food choice; there is a strong association between the built environment, dietary behavior, physical activity,

and obesity. Therefore, it is plausible to expect that the changes in eating habits due to the pandemic may have been different by neighborhoods because of those factors. However, there is little research that examined the relationship in the U.S. context. Moreover, most studies have relied on online survey data, yet no study has explored the 'revealed' dietary preference.

Therefore, this study seeks to examine 1) how the COVID-19 pandemic has affected eating habits and 2) how the changes in eating habits vary by neighborhoods with different socio-demographic populations and the built environment. By utilizing 117,000 Points-of-interest (POIs) and 15 million visitor pattern data in the Atlanta region provided by SafeGraph, the study analyzes and visualizes people's restaurant visiting patterns (e.g., type of food, dine-in/take-out, visiting frequency, and distance from home) before and during the pandemic. The study then employs a regression model to explain eating habit changes based on socio-demographics and built environment factors (e.g., density, land use, network connectivity, walkability, food access, and transportation options) at the visitors' home neighborhood (i.e., Census Tract) level.

Our preliminary analysis focusing on the fast-food consumption behavior shows intriguing results: people have been eating more fast-food during the pandemic. Even though the total number of restaurant visits as well as the total number of dine-ins have returned to the before-pandemic level since March 2021, the unhealthier eating habit still persists in 2022. In addition, the trend is significantly correlated with the neighborhood characteristics in terms of both socioeconomic status (e.g., income and race) and the built environment (e.g., distance to the nearest grocery store and walkability). The findings add to the literature by demonstrating the characteristics of neighborhoods that are vulnerable/resilient to a crisis like the pandemic lockdown in terms of food access and community health.

Citations

- Papas, M. A., Alberg, A. J., Ewing, R., Helzlsouer, K. J., Gary, T. L., & Klassen, A. C. (2007). The built environment and obesity. *Epidemiologic reviews*, 29(1), 129-143.
- Chen, L., Li, J., Xia, T., Matthews, T. A., Tseng, T. S., Shi, L., ... & Su, D. (2021). Changes of Exercise, Screen Time, Fast Food Consumption, Alcohol, and Cigarette Smoking during the COVID-19 Pandemic among Adults in the United States. *Nutrients*, 13(10), 3359.
- Alkerwi, A. A., Vernier, C., Sauvageot, N., Crichton, G. E., & Elias, M. F. (2015). Demographic and socioeconomic disparity in nutrition: Application of a novel Correlated Component Regression approach. *BMJ open*, 5(5), e006814.
- Cummings, J. R., Ackerman, J. M., Wolfson, J. A., & Gearhardt, A. N. (2021). COVID-19 stress and eating and drinking behaviors in the United States during the early stages of the pandemic. *Appetite*, 162, 105163.
- Konttinen, H., Sarlio-Lähteenkorva, S., Silventoinen, K., Männistö, S., & Haukkala, A. (2013). Socio-economic disparities in the consumption of vegetables, fruit and energy-dense foods: the role of motive priorities. *Public health nutrition*, 16(5), 873-882.

Key Words: COVID-19, Eating Habit, Fast-food Consumption, Point-of-Interest, Food Access

Track 10 – Planning Education & Pedagogy

Track 10 Pre-Organized Session Summaries and Abstracts for the Sessions

BLACK PLANNING: CENTERING BLACK KNOWLEDGE AND EXPERIENCES IN PLANNING EDUCATION

Pre-Organized Session 48 - Summary

Session Includes 1407, 1408, 1409, 1693, 1813

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This session brings together planning educators and community-based practitioners who have engaged in pedagogical approaches that centre Black planning practices and knowledge. The authors reflect on examples of coursework, course redesign, and/or curricular changes that have sought to centre the diverse planning work and experiences of Black communities, advance anti-racism discussions in planning, and help develop professional competencies through an explicit anti-racism lens. The session pays particular attention to the role that community-university collaborations and community-engaged research can play in supporting the planning work of Black communities and organizations, providing planning students with experiential learning opportunities that raise awareness about systemic discrimination and strengthen their commitment to challenge them through their practice, and providing educators with an enhanced capacity and knowledge to engage with Black communities and organizations, as well as to deliver the transformative training that is needed to disrupt longstanding patterns of exclusion and anti-Black racism in planning.

Objectives:

- Increased knowledge about the complicity of planning with anti-Black racism.
- Increased knowledge about the potential and limits of community-engaged teaching in advancing anti-racism discussions in planning education.
- Preliminary insights about student experience in the context of experiential learning courses that centre Black experiences with planning.

BLACK URBANISM IN CANADA: EXPANDING PLANNING AND ANTI-RACISM COMPETENCIES THROUGH COMMUNITY-ENGAGED RESEARCH AND DIGITAL STORYTELLING

Abstract ID: 1407

Abstract within Pre-Organized Session 48

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Planning has a contentious history with/in Black communities, shaped by a legacy of settler colonialism, racial capitalism, and White supremacy that has created inequitable outcomes for Indigenous, Black, and other communities of color until this day (Dorries, Hugill, and Tomiak, 2019). Since even before the establishment of planning as a profession, tools and practices that now fall under the umbrella of planning – including the creation of the Indigenous reserve system, restrictive covenants, residential segregation, exclusionary zoning, urban renewal-induced displacement, and the location of polluting facilities in historically racialized areas – have shaped informal and formal practices of settlement, land tenure and use, urban and regional planning, and development that have marginalized Black communities (Thomas, 1994; Agyeman, 2020; McKittrick, 2011). The impacts of such practices continue today, and are in part reproduced through planning education approaches and curricula that do not centre the planning work and experiences of Black communities historically and today, overlook planning's past and present role in anti-Black practices, and center White narratives in planning (Bates et al., 2018) Sandercock, 1998; Ahsan et al., 2020; Lundi, 2020).

This paper reflects on a collaborative course re-design project called Black Experiences with Planning in Canada, which brought together five Black-led community organizations leading planning, place-making, and community building work in different Canadian cities and the School of Urban and Regional Planning (SURP) at X/Toronto Metropolitan University. We critically examine different aspects of the project and what this experience might mean for deeper, longer-term transformations in planning pedagogy and curricula that centre the experiences and work of Black communities and organizations.

Between January and December 2021, the Black Planning Project (BPP) formally collaborated with SURP to co-redesign two core courses – Advanced Planning Studio and Advanced Field Research. Four organizations were invited as community partners for the courses: Akoma Holdings Inc., Hogan’s Alley Society, A Different Booklist Cultural Centre, and Black Futures Now TO. Substantively, the courses’ goal was to examine planning’s role in anti-Black racist urban practices in Canada, centre Black urbanism and the work of Black-led organizations historically and today, and de-privilege White narratives in planning education. Pedagogically, the courses sought to deepen experiential learning and community-engaged teaching by engaging students in community-based research with a partner organization to learn about their work and connect it to broader discussions about planning, anti-Black racism, Black resistance, Afrofuturism, and Africentric design. Methodologically, students received training and explored digital storytelling as a means to share their research, producing short mini-documentaries that foreground the planning work of their partner organization. Ultimately, the purpose of Black Experiences with Planning in Canada was to open up spaces in the planning curriculum to train planners that are more aware and ethically committed to planning for racial justice and equity.

The paper shares preliminary learnings from our collective reflection process, which was also informed by the results of a post-course survey circulated among students to gather their experiences. First, we explore the pedagogical potential and challenges of community-engaged audiovisual methodologies to explore discussions of anti-Black racism in planning. Second, we discuss the complexities of assessing student learning when the goal is to foster a concern for and commitment to racial justice among future planning professionals. The paper ends with a discussion about what is required from universities to ensure collaborations of this kind – which seek to embody respectful and ethical relationships in service-learning by sharing responsibilities, ensuring partner organizations are adequately compensated, and supporting the community partners’ agendas – can be sustained over time.

Citations

- Bates, L.K., et al. (2018). Race and Spatial Imaginary: Planning Otherwise. *Planning Theory & Practice*, 19(2), 254-288.
- Levkoe, C. Z., Brail, S., Danieri, A. 2014. “Engaged Pedagogy and Transformative Learning in Graduate Education: A Service-Learning Case Study.” *Canadian Journal of Higher Education* 44 (3): 68–85.
- Lundi, D. (2020). Rewriting the Urban Planning Canon. *Planning*. Available from <https://www.planning.org/planning/2020/feb/intersections-viewpoint/>
- Thomas, J. M. (1994). Planning History and the Black Urban Experience: Linkages and Contemporary Implications. *Journal of Planning Education and Research*, 14(1), 1–11.
- Williams, R. A. (2020). From racial to reparative planning: Confronting the white side of planning. *Journal of Planning Education and Research*, 0739456X20946416.

Key Words: Black planning, Black experiences, Anti-Black racism, Experiential learning, Community-engaged teaching

TEACHING DIGITAL CURATION AS PLACE PRESERVATION

Abstract ID: 1408

Abstract within Pre-Organized Session 48

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The author will share her pedagogical innovations and challenges encountered when introducing digital curation as a research method to future preservationists, designers, and planners. More specifically, she recounts the challenges which have emerged and the insights gleaned from integrating The Texas Freedom Colonies Atlas and Survey—a virtual and engaged research project with social justice aims—into assigned coursework. She shares evaluations and written reflections that indicate that some students value direct engagement with communities. In contrast, others perceive lectures and assignments centering on African American placemaking and planning as peripheral to the canonical content in Planning History and Theory courses. She reveals ways that coursework which includes engagement directly with grassroots African American preservationists and planners, both advances and complicates project-based learning for planning students. Applying the digital humanities in her pedagogy has led her to conclude that these platforms offer educators creative strategies for integrating social theory and humanistic inquiry into social science and professional teaching. In addition, she has made visible communities and equity issues not otherwise apparent to future planners by foregrounding the humanities.

Citations

- Nieves, A., Gallon, K., Kim, D. J., Nesbit, S., Carter, B. W., & Johnson, J. (2017). *Black Spatial Humanities: Theories, Methods, and Praxis in Digital Humanities* (A Follow-up NEH ODH Summer Institute Panel). DH.
- Risam, R., & Josephs, K. B. (Eds.). (2021). *The Digital Black Atlantic*. U of Minnesota Press.
- Sandercock, Leonie. (1998). Framing Insurgent Historiographies for Planning. In *Making the invisible visible: A multicultural planning history*. University of California Press; /z-wcorg/.
- Roberts, A. R. (2018). Performance as place preservation: The role of storytelling in the formation of Shankleville Community's Black counterpublics. *Journal of Community Archaeology & Heritage*, 5(3), 146-165.
- Hooks, B. (2014). *Teaching to transgress*. Routledge.

Key Words: Historic Preservation, Project-Based Learning, Black Communities, Planning Theory, Planning History

YOUTH, RACE, AND FAITH IN TORONTO'S REGENT PARK

Abstract ID: 1409

Abstract within Pre-Organized Session 48

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Urban studies researchers across the world have been studying Regent Park's billion-dollar redevelopment process in Toronto and how the newly "revitalized" mixed-income neighborhood has affected long-time social housing residents, who are primarily Black and Muslim immigrants (Brail and Kumar, 2017; August, 2014; Laughlin and Johnson, 2011). However, few of these studies incorporate the perspectives of Black and Muslim residents, specifically youth. This article analyzes the pedagogy of a course collaboration from 2019 and 2020 in which undergraduate Urban Studies students and youth members of a neighborhood media arts non-profit sought to design research projects about the rapidly changing community. The class was committed to principles of "knowledge justice" and participatory action research (PAR), in which academics and community residents are collaborative partners in the process of designing an inquiry for the purposes of social change (Torre et al, 2012). In this paper, I ask: What did Black and Muslim youth media from Regent Park uncover about their neighborhood's redevelopment that academic scholarship missed?

Undergraduate students and youth residents envisioned and co-produced their own media projects addressing gentrification in Regent Park from the Black Muslim youth perspective. These projects included a podcast which explores how the Rap and Hip Hop culture of the neighborhood disintegrated during redevelopment; a YouTube mockumentary that exposes how inaccessible the neighborhood's new public amenities are to long-time social housing residents; a zine documenting subversive art and memorabilia of the rapidly changing neighborhood; a photography exhibition that counters mainstream media stereotypes; and a video that contextualizes what it means to be a young Muslim woman from Regent Park in the broader narrative of Islamophobia in Toronto. Analysis of these media projects, participant observation, focus groups, and students' written reflections reveal that practitioners and scholars need better strategies to understand intersectional identities and how they influence experiences of the built environment. The pedagogy of this collaboration highlights innovative ways for educators to teach students how local knowledge about the city can be shared and understood across different population groups.

Citations

- August, M. (2014). Challenging the rhetoric of stigmatization: the benefits of concentrated poverty in Toronto's Regent Park. *Environment and Planning A*, 46(6), 1317-1333.
- Brail, S., & Kumar, N. (2017). Community leadership and engagement after the mix: The transformation of Toronto's Regent Park. *Urban Studies*, 54(16), 3772-3788.
- Laughlin, D. L., & Johnson, L. C. (2011). Defining and exploring public space: perspectives of young people from Regent Park, Toronto. *Children's Geographies*, 9(3-4), 439-456.
- Manouchehrifar, B. (2018). Is planning 'secular'? Rethinking religion, secularism, and planning. *Planning Theory & Practice*, 19(5), 653-677.

Key Words: youth, media, community development, race, faith

BLACK PLANNING AT MIT

Abstract ID: 1693

Abstract within Pre-Organized Session 48

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What is planning? Who or what institutions have had the formal capacity to ‘plan’ in the modernist, rationalist sense of the term? What does it mean to ascribe to planning a racial, ethnic, or national descriptor, such as “Black”? In this course we explore how bringing together the terms ‘Black’ and ‘planning’ expands our understanding of the history of planning as an organized activity, the relationships among planners and institutions like “the state,” and ways that subjugated populations enact plans that imagine possible futures against, alongside, and beyond structures of oppression. We trace multiple genealogies of Black planning in relation to the emergence of imperial capitalism, colonialism, neocolonialism, and neoliberalism, primarily in a trans-Atlantic (or what Édouard Glissant calls an African archipelagic) context. By exploring “Black Planning” (or planning in Black), we recognize that Black and Blackness are contested identities, embodied racial monikers, sociopolitical locations, material and geographic spaces, processes, legal statuses, and grounds for generative creativity that have changed temporally and globally. We review select examples of how Blackness has been deployed discursively to inform geopolitics and the formal practice of planning historically. We also analyze cases and spaces of Black Planning. If, as the work of Afrofuturist writers suggests, Blackness is a state of mind that engenders the capacity to shapeshift physically, spiritually, and otherwise, what does this mean for planners, designers, architects, and others seeking to plan in Black? We plan to present details about a class with the following learning objectives:

- Describe the purpose and value of desire-based frameworks that center Black people’s aspirations, acts of creation, and intellectual traditions for studying and working with Black communities
- Articulate key ideas, frameworks, and movements associated with the Black Radical Tradition, and the sociohistorical and political economic contexts that give rise to them
- Characterize and critically assess different approaches to community planning and development at a variety of social and spatial scales, through the lens of different Black radical formations
- Draw from a diversity of sources, media, and knowledge traditions that reflect the diversity of Black epistemologies and ideologies in order to make claims about strategies and struggles for justice, self-determination, and freedom
- Create a safe and healthy learning environment that values and engages in practices of care, self-reflection, political education, and imagination

Citations

- Karla Slocum, *Black Towns, Black Futures: The Enduring Allure of a Black Place in the American West*
- Octavia E. Butler, *Parable of the Talents*
- Saidiya Hartman, *Wayward Lives, Beautiful Experiments: Intimate Histories of Riotous Black Girls, Troublesome Women, and Queer Radicals*
- Katherine McKittrick, “On Plantations, Prisons, and a Black Sense of Place,” *Social & Cultural Geography*, Vol. 12, No. 8 (2011): 947–963.
- Justin Hosbey and J. T. Roane, “A Totally Different Form of Living: On the Legacies of Displacement and Marronage as Black Ecologies,” *Southern Cultures*, Vol. 27, No. 1 (2021): 68–73.

Key Words: Black Planning, Radical Planning, Urban History, Black Feminism, Black Nationalism

CENTRING THE BLACK EXPERIENCE IN PLANNING COURSES

Abstract ID: 1813

Abstract within Pre-Organized Session 48

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Historically the discipline of planning has been called to task for its investment in plantation logics and willful annihilation of Black and indigenous spaces across the Americas and the rest of the diaspora. While the abolition of slavery more than 400 years ago, scholars like Hartman (2019), Sharpe (2016), Walcott (2021), and Gilmore (2007) reminds us of the unrelenting violence in “the afterlife of slavery.” Planning educators and urbanist have been working attentively to reverse this course and chart a new trajectory— one that centres anti-colonialism, Blackness, and antiblackness as a means to dismantle repressive learning that upholds the logics of white supremacy. The classroom offers educators an important venue to cultivate such critical discussion regarding Black people’s humanity to inspire and cultivate the courage in students to resist planning practices that help negate Black people’s humanity. How might planning educators make use of analytical categories such as the human to inspire students to resist the

dehumanization, social and literal death of Black people? This paper provides an intervention into current planning pedagogical practices that contributes to the reckoning of white supremacy in the discipline and helps provide insights on how to improve the lives of Black, Indigenous, and other people of colour.

Courtney E. Knapp (2018) appropriately notes, becoming and remaining an anti-racist planner requires tremendous “guts.” Some planning educators proffer various pedagogical approaches including storytelling, and personal testimonies, autobiography, and memoirs to examine socio-spatial issues that help keep Black and other racialized spaces underdeveloped (Knapp 2018, Lung-Amam et al. 2015, Forester 1987). However, these approaches often centre discussions solely on racism without distinguishing the unique experience of Black people’s oppression. In fact, some scholars argue antiblackness must be distinguished from racism to capture the unique dehumanization of Black people and the underpinning logic that renders Blackness as abject (Jung and Vargas 2021).

This article offers a critical reflection on the re-design of a graduate seminar titled Housing and Redevelopment at a Canadian university. Unlike, traditional housing courses that seek to provide students insight on pressing housing issues in Canada without centring Black humanity, miss opportunities to inspire them to value the experiences of Black people. By centring Black humanity in the course, students are able to develop critical perspective regarding various planning procedures and practices that serve to oppress and dehumanize Black people. Additionally, examining key housing problems such as housing affordability, racial discrimination, banishment, financialization, gentrification, evictions, and dispossession through an antiblackness framework allow students to see how these issues facilitate the negation of Black humanity. The paper closes with a discussion on how planning educators could potentially centre Black humanity to inspire and develop the courage in students to begin planning for a just society that is no longer predicated on antiblackness.

Citations

- Forester, John. 1987. "Teaching and Studying Planning Practice: An Analysis of the "Planning and Institutional Processes" Course at MIT." *Journal of planning education and research* 6 (2):116-137.
- Jung, Moon-Kie, and João H. Costa Vargas. 2021. "Antiblackness of the Social and the Human " In *Antiblackness* edited by Moon-Kie Jung and João H. Costa Vargas, pp. 1-14. Durham: Duke University Press.
- Knapp, Courtney E. 2018. "Integrating Critical Autobiography to Foster Anti-Racism Learning in the Urban Studies Classroom: Interpreting the “Race and Place” Stories of Undergraduate Students." *Journal of planning education and research*:739456.
- Lung-Amam, Willow, Stacy Anne Harwood, Gerardo Francisco Sandoval, and Siddhartha Sen. 2015. "Teaching Equity and Advocacy Planning in a Multicultural “Post-racial” World." *Journal of Planning Education and Research* 35 (3):337-342.
- Walcott, Rinaldo. 2021. *The long emancipation: moving toward black freedom*. Durham, England: Duke University Press.

Key Words: Antiblackness, Blackness, Black humanity, Planning education

Track 10 Roundtables

TEACHING DATA SCIENCE IN URBAN PLANNING

Abstract ID: 1248

Roundtable

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JIANG, Shan [Tufts University] shan.jiang@tufts.edu, participant

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GIS and statistics have long been mainstays of planning curricula. However, more schools are complementing these courses with offerings in data science, urban informatics, urban and spatial analytics, and similar topics. A hallmark of these courses is that they typically teach students to code in languages such as Python or R, as well as introducing analytical methods and discussing the theoretical underpinnings and planning applications.

This roundtable is the first in a proposed two-part roundtable on technology, planning, and data science. It will not only reflect pedagogical approaches, contents, and skills taught in data science-related courses in planning programs

but also discuss why and how they matter for planning curricula in a broader sense, and how diversity, equity, inclusion, and justice (DEIJ) can be addressed and taught in analytical-heavy courses.

More specifically, roundtable participants will discuss their first-hand perspectives from teaching and curriculum development, including:

- What planning schools teach in data science. Most data science courses emphasize basic coding and data wrangling skills. Beyond that, instructors have a broad range of topics that they emphasize, including but not limited to spatial analysis, machine learning, image processing, and natural language processing. How are the analytical skills taught in ways to connect with planning applications? How have instructors integrated critical approaches and reflections?
- Analytical skills that matter for urban planning students and graduates. Roundtable participants will reflect on the broader learning goals and skills that data science courses seek to build, and the balance between familiarity with specific packages and a deeper understanding of algorithms and methods such as machine learning. How does data science fit into a planner's constellation of tools? How have these analytical skills helped planning students in their career development?
- Pedagogical approaches. How have instructors engaged students with a wide range of coding experience coming into the course? How have they taught noncoders to code for the first time? What pedagogical innovations have proved most effective?
- Curricular development. How do data science and urban informatics courses fit into the broader landscape of planning curricula? How do they complement courses in GIS, statistics, and other planning methods? What are the possibilities to address diversity, equity, inclusion, and justice in these courses?

Citations

- Boeing, G., Batty, M., Jiang, S. and Schweitzer, L., 2021. Urban analytics: History, trajectory, and critique. Trajectory, and Critique. In Rey, S., and Franklin, R. (Eds.), *Handbook of Spatial Analysis in the Social Sciences*, Cheltenham, England: Edward Elgar
- Kang, W., Oshan, T., Wolf, L. J., Boeing, G., Frias-Martinez, V., Gao, S., Poorthuis, A., & Xu, W. (2019). A Roundtable Discussion: Defining Urban Data Science. *Environment and Planning B: Urban Analytics and City Science*, 46(9), 1756–1768. doi: 10.1177/2399808319882826
- Kaufman, Sanda and Robert Simons. 1995 "Quantitative and Research Methods in Planning: Are Schools Teaching What Practitioners Practice? *Journal of Planning Education and Research* 15(1): 17-33. doi: 10.1177/0739456X9501500102
- Kontokosta, C. E. (2018). Urban Informatics in the Science and Practice of Planning. *Journal of Planning Education and Research*, 41(4), 382–395. doi: 10.1177/0739456x18793716

Key Words: data science, pedagogy, urban informatics

ZONING FOR EQUITY: DISMANTLING EXCLUSIONARY LAND USE AND DEVELOPMENT PRACTICES, ONE STEP AT A TIME

Abstract ID: 1505

Roundtable

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PFEIFFER, Deirdre [Arizona State University] Deirdre.Pfeiffer@asu.edu, participant
GOETZ, Edward [University of Minnesota] egoetz@umn.edu, participant
MONKKONEN, Paavo [University of California Los Angeles] paavo.monkkonen@ucla.edu, participant

In 2021, a group of planning educators launched a multi-campus course titled "Zoning for Equity." The idea was to use the classroom as a vehicle for developing and introducing concrete and practical solutions to push local and state-level land use, zoning, and development practices toward greater equity, ultimately dismantling exclusionary land use and development patterns from the ground up. Accordingly, the course has been deliberately designed to be picked up by additional planning programs, propagating the incremental and grass-roots challenges to established land use and development practices.

This year marks the second year of Zoning for Equity. As new and returning campuses join us, we will discuss the local projects that have been, are, and will be taken up by each campus. We will start building a repository of the scope and scale of local projects, possible ranges and scale of practical solutions, and effective strategies for implementing the proposed changes. We will compare the challenges and opportunities faced in each local context to start identifying the conditions under which changes can be implemented. These conditions may include but are not limited to local and state administrative capacity, the political makeup of elected officials, strength of community and advocacy organizations, local and state political culture, and regulatory contexts. We strongly welcome interested planning educators to join us at this Roundtable and further consider joining the collective in the future.

Citations

- Andrew H. Whittemore, “Exclusionary Zoning,” *Journal of the American Planning Association* 87, no. 2 (April 3, 2021): 167–80, <https://doi.org/10.1080/01944363.2020.1828146>.
- Michael Manville, Paavo Monkkonen, and Michael Lens, “It’s Time to End Single-Family Zoning,” *Journal of the American Planning Association* 86, no. 1 (January 2, 2020): 106–12, <https://doi.org/10.1080/01944363.2019.1651216>.
- Lydia Lo et al., “Land Use Reforms for Housing Supply: Case Studies on the Process for Passing and Implementing Regulation Changes” (Washington, D.C.: Urban Institute, October 27, 2020).
- Edward G. Goetz and Yi Wang, “Overriding Exclusion: Compliance With Subsidized Housing Incentives in the Massachusetts 40B Program,” *Housing Policy Debate* 30, no. 3 (May 3, 2020): 457–79, <https://doi.org/10.1080/10511482.2020.1726984>.

Key Words: Exclusionary Zoning, Land use reform, zoning for equity

NOTES FROM THE TRENCHES: REFLECTIONS FROM RECENT PH.D. GRADUATES ON NAVIGATING THE ACADEMY

Abstract ID: 2038

Roundtable

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GAUGER, Bri [Chalmers University of Technology] bgauger@umich.edu, participant
GELBARD, Sarah [McGill University] sarah@gelbard.ca, participant
REYES, Ariadna [University of Texas at Arlington] ariadna.reyessanchez@uta.edu, participant
KAYANAN, Carla [University College Dublin, Ireland] carla.kayanan@ucd.ie, participant

Dr. Joanna Ganning recently published an important analysis of the planning doctoral job market with the goal of informing prospective students and job seekers about employment prospects and spurring pedagogical discussions in the discipline (Ganning, 2022). Her article provides quantitative insights into an “over-supplied academic job market [that] exerts a sorting process on its applicants” (Ganning, 2022, np). While it is critical to quantitatively understand this topic, we felt it left out perceptions from recent Ph.D. graduates who are making complicated decisions about remaining in academia, pursuing multiple pathways following graduation, and navigating demoralizing academic job markets.

After reflecting on Ganning’s analysis, we thought it important to provide a more nuanced description of the landscape that planning graduates encounter based on our collective experiences. This roundtable discussion brings together recent graduates from Research 1 (R1) Ph.D. planning programs across the United States and Canada to shed light on the complicated, often blurry paths, and ever-changing expectations that recent graduates face. We intend to discuss the increasingly competitive academic job market and the pragmatic implications of the shifting expectations for graduates, evolving training and support needs, and suggestions for a more compassionate tenure-track market. We will also situate this conversation in a larger reflection on the neoliberal academy that promotes a culture of competitiveness over care and production over purpose that is always present but especially visible in the “sorting process” described by Ganning (Ganning, 2022; Museus & Sasaki, 2021). We will unpack how people navigate these systems that are seemingly antithetical, or even hostile, to the very type of transformative and radical planning work needed to address the most pressing planning issues of our time (Corbera et al., 2020; Mountz et al., 2015; Porter et al., 2012).

During our roundtable session we will ask participants to reflect on the following questions: As you were finishing your Ph.D., what did you envision for your future, and what paths did you end up taking? What were your experiences in various job markets? What do you wish you knew about those markets while pursuing your Ph.D.? As a more critical scholar, how do you view the contradictions between your work, our discipline, and the academy? How do those contradictions inform or complicate your decisions to stay or leave academia? What do we need to unsettle or transform to co-create a discipline and a future that centers justice, care, and compassion?

Citations

- Corbera, E., Anguelovski, I., Honey-Rosés, J., & Ruiz-Mallén, I. (2020). Academia in the Time of COVID-19: Towards an Ethics of Care. *Planning Theory & Practice*, 21(2), 191-199.
- Ganning, J. (2022). Doctoral Education and the Academic Job Market in Planning. *Journal of Planning Education and Research*, 0739456X211067271.

- Mountz, A., Bonds, A., Mansfield, B., Loyd, J., Hyndman, J., Walton-Roberts, M., ... & Curran, W. (2015). For slow scholarship: A feminist politics of resistance through collective action in the neoliberal university. *ACME: An International Journal for Critical Geographies*, 14(4), 1235-1259.
- Museus, S. D., & Sasaki, C. T. (2021). Creating spaces of refusal in the neoliberal academy. *International Journal of Qualitative Studies in Education*, 1-11.
- Porter, L., Sandercock, L., Umemoto, K., Umemoto, K., Bates, L. K., Zapata, M. A., ... & Sandercock, L. (2012). What's love got to do with it? Illuminations on loving attachment in planning. *Planning Theory & Practice*, 13(4), 593-627.

Key Words: Doctoral education, Academia, Job market

Track 10 Individual Paper Submissions

“WALK IT LIKE I TALK IT”: A CASE STUDY OF COMMUNITY-BASED SERVICE LEARNING IN PLANNING CLASSROOM IN COLLABORATION WITH THE LOCAL GRASSROOTS ORGANIZATIONS

Abstract ID: 1031

Individual Paper Submission

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Participatory pedagogy engages students in the process of learning and empowers them to play an active role during the learning experience. It provides an approach with a student-centered learning experience and enables the students to become part of the content as well as the structure of the educational process (Andersen & Ponti, 2014). The value of participatory pedagogy is particularly important in the field of urban planning, where emphasizing the importance of the democratic process holds a fundamental meaning to the learning outcome. From citizen participation to citizen empowerment (Arnstein, 1967; Rocha, 1997), planning theory recognizes the importance of public engagement in urban planning practice and education, and calls for creating the capacity of engaging in the process (Nussbaum, 2013). This is especially important while the planning paradigm shifts from the rational technician to the communicative action and interactive practice in planning (Innes, 1995). In a multicultural world that we live in, the meaning of teaching equity and advocacy planning with the awareness of reflexivity and positionality is increasingly acknowledged (Beebejaun, 2006, 2022; Botchwey & Umemoto, 2020; Lung-Amam et al., 2015; Tate, 2021; Wilson, 2020). Informed by the importance of participatory pedagogy, teaching practices such as service learning and experiential learning have been applied in the urban planning classrooms in recent years, especially in collaboration with local planning organizations across the public sector, private sector, non-profit and grassroots organizations (Deeley, 2010; Tyson & Low, 1987). Particularly, service learning is one form of experiential learning. It combines academic coursework with various degrees of service work within the community (Deeley, 2010). As an outcome, students gain in-depth knowledge about the community while embedding themselves in the process of problem-identification and problem-solving.

This study provides a case study of service learning in an undergraduate class in urban planning. The step-by-step case analysis demonstrates how service learning helps to achieve the outcome of citizen engagement in the local urban planning project in collaboration with a local grassroots organization in Arlington, TX, through a Walk Audit project. A walk audit is an activity in which a team, or an individual, intentionally observes the surrounding environment in a participatory way and evaluates the condition of the walkability of the examined area. In this case, the walk audit project was co-conducted with the local grassroots organization, Walkable Arlington, through an informal partnership from Summer 2021 to Spring 2022. Using the ArcGIS survey tool (“Survey123”) and field notes, two different groups of students were led by the Walk Audit guide to walk around the area, observe the pedestrian and walkability-related built environment, and document the observational outcome. This case study demonstrates that how participatory pedagogy, in partnership with the local grassroots organization, could help empower the students to critically evaluate the process of the planning project, the procedures of public participation, and how the project outcomes could be fundamentally influenced by the degree of citizen engagement through service learning experience in urban planning classroom.

Citations

- Andersen, R., & Ponti, M. (2014). Participatory pedagogy in an open educational course: Challenges and opportunities. *Distance Education*, 35(2), 234–249. <https://doi.org/10.1080/01587919.2014.917703>
- Beebejaun, Y. (2006). The participation trap: The limitations of participation for ethnic and racial groups. *International Planning Studies*, 11(1), 3–18. <https://doi.org/10.1080/13563470600935008>

- Botchwey, N., & Umemoto, K. (2020). A Guide to Designing Engaged Learning Courses in Community Planning. *Journal of Planning Education and Research*, 40(3), 332–344. <https://doi.org/10.1177/0739456X18772075>
- Lung-Amam, W., Harwood, S. A., Sandoval, G. F., & Sen, S. (2015). Teaching Equity and Advocacy Planning in a Multicultural “Post-racial” World. *Journal of Planning Education and Research*, 35(3), 337–342. <https://doi.org/10.1177/0739456X15580025>
- Nussbaum, M. (2013). *Creating Capabilities: The Human Development Approach*. Belknap Press. <https://www.hup.harvard.edu/catalog.php?isbn=9780674072350>

Key Words: planning pedagogy, participatory planning, service learning, walk audit, citizen participation

OPEN EDUCATIONAL RESOURCES (OER): AN OPPORTUNITY WE SHOULD NOT MISS IN URBAN PLANNING EDUCATION

Abstract ID: 1242

Individual Paper Submission

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Open educational resources (OER) are at the core of the global open education movement which seeks to enhance equity and democratize education through quality educational content accessible online for free. It is also part of a larger movement aiming “to establish tertiary education and lifelong learning as a human right” (Blessinger and Bliss 2016, 15). The U.S. OER movement grew in response to the escalating costs of college textbooks and the pressure from coalitions of student organizations, academic and research libraries, and stakeholder advocates (Sparks, 2017). Within urban planning education rising costs are not only a barrier to entry for traditionally underrepresented groups but also a challenge to expanding and diversifying the urban planning profession. In recognition of equity and inclusion issues, states have passed legislation endorsing OER programs, and the U.S. Department of Education’s Fund for the Improvement of Postsecondary Education (FIPSE) has funded OER projects since 2018. Enabling Transportation Planning Professional Advancement was one of the four FIPSE awardees of 2020-21 (Audirac, et al., 2022). The project seeks to create quality industry-vetted transportation planning OER materials with the goal of lowering the barriers to educational attainment and career entry.

The aim of this paper is twofold. First, to describe the landscape analysis of existing urban planning-related OER materials—through a search of international, national, and state OER repositories—and the resulting landscape’s dearth of urban planning content, which points to an opportunity that planning education should not miss. Second, to report on the findings of a five-step systematic literature review (SLR) (Okoli and Schabram 2010) of the barriers and incentives of OER creation and adoption in higher education and in urban and transportation planning. It discusses primary barriers to OER adoption and several incentives to potentially overcome these barriers, including student cost benefits (monetary and course withdrawal reduction) and pedagogical benefits related to student success.

Other disciplines are leveraging OER to improve access to relevant and affordable education, however, urban planning has lagged in these efforts. Adoption of OER materials in planning education can contribute to leveling access to urban planning, a high-demand profession (BLS 2021) in a way that promotes social justice, defined by Fraser (2005) as “parity of participation.” Additionally, adoption of OER textbooks in urban planning, especially in low gender development index (GDI) countries, may help amplify the voices of female instructors and professors and promote more gender equality and representation in the field.

Citations

- Audirac, I., Raley, A. B., Rosenberger, J., Pan, Q., Reyes, A., Etminiani-Ghasrodashti, R., Mozaffarian, L., Sharifi, S., Chen, P., Williams, K., Boyd, T., Pade, A., & Tanvir, S. (2021). Enabling transportation planning professional advancement through open educational resources. Presented at the Transportation Review Board Annual Conference, January 2022, Washington, D.C.
- Blessinger, P. and Bliss, T.J. (2016) Introduction to open education: towards a human rights theory, in P. Blessinger and T.J. Bliss, *Open education: international perspectives in higher education* (pp. 16-30) Cambridge, UK: Open Book Publishers. <http://dx.doi.org/10.11647/OBP.0103>
- Fraser, N. (2005). Reframing Justice in a Globalizing World. *New Left Review*, 36, 69–88. Retrieved from <https://newleftreview.org/II/36/nancy-fraser-reframing-justice-in-a-globalizing-world>
- Okoli, C., & Schabram, K. (2010). A guide to conducting a systematic literature review of information systems research. *SSRN Electronic Journal*, 10: 1-49.

- Sparks, S. D. (2017, April 12). Open educational resources (OER): Overview and definition. Education Week. Retrieved July 15, 2022 from <https://www.edweek.org/teaching-learning/open-educational-resources-oer-overview-and-definition/2017/04>

Key Words: Open Educational Resources, Urban Planning Education, Transportation Planning, OER Adoption, OER Barriers and Incentives

THE PLANNING STUDIO SERIES: AN INTER-DISCIPLINARY, PROBLEM-SOLVING APPROACH

Abstract ID: 1412

Individual Paper Submission

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How do planning studios adjust to the need for an increasingly inter-disciplinary approach to problem-solving, integrating students from various areas of study, a diverse faculty, and partners with cross-cutting knowledge and needs? This research leverages a longitudinal design comprising a detailed analysis of three successive studios undertaken in Puerto Rico between 2019 and 2022. We obtained empirical material for analysis through interviews, focus groups, studio presentations, reports, geo-spatial analysis, asset mapping, and validation exercises. This methodology allowed us to draw lessons conducive to more fruitful and complex studios

These lessons, which challenge the conventional studio wisdom, may be divided into four studio stages: preparation, pre-fieldwork/travel course delivery, fieldwork/travel, and post-fieldwork/travel course delivery. When it comes to the preparation stage, our findings caution against hierarchical “one-shot” studios that involve the selection of local partners based on their close connection to faculty and the unilateral definition of priorities and activities by faculty. Instead, a studio series, consisting of multiple consecutive iterations in the exact location, is likely to better serve an inter-disciplinary approach to problem-solving. So is a process for partner selection conducted systematically, involving surveys, in-depth interviews of “finalists,” student feedback, and an approach to studio priority and deliverable definition that heavily relies on students in direct negotiation with selected partners.

In terms of the pre-fieldwork/travel course delivery stage, our research highlights the drawbacks of adopting a narrow conventional planning focus, limiting collaborations to the selected partner, and concentrating communications with partners in faculty hands. Instead, to foster inter-disciplinary problem-solving, planning studios should embrace work with various local and international actors and selected partners. This approach should include invited lectures by faculty and other guests with sundry areas of expertise related to studio activities; and devolve responsibility for client communications to studio students, if possible, in collaboration with local students associated with the selected partner. It should also promote parallel activities and deliverables (i.e., activities and deliverables not directly supported by the studio) that complement and broaden the impact of studio products.

For the fieldwork/travel stage, our findings reveal the limitations of conventional studios heavily reliant on a narrow range of data collection activities (i.e., community tours, interviews) and whose preliminary results are validated through a general presentation at the end of the period of fieldwork. We propose fieldwork involving a wide range of activities, including tours and interviews, community mapping initiatives, joint design projects (e.g., solar energy delivery, organizational website), volunteering in ongoing partner events, and visiting other “model” communities. Notably, intense interaction with local experts and university alumni is a critical component. Furthermore, our findings favor an ongoing validation process involving tailored presentations to different audiences and interactive data-gathering events.

Finally, our research underscores the benefits of a post-fieldwork/travel course delivery stage that prioritizes ongoing progress reviews with partners and other collaborators and a final presentation delivered to a broad, interdisciplinary audience. That runs counter to more conventional approaches that support student-centered analysis of empirical fieldwork material and targeted final presentations to partners and planners.

Citations

- Balassiano, K. (2012) “Tackling ‘Wicked Problems’ in Planning Studio Courses,” *Journal of Planning Education and Research* 31(4): 449-460.
- Christensen, K. (1993) “Teaching savvy,” *Journal of Planning Education and Research* 12: 202-212.
- Lang, J. (1983) “Teaching Planning to City Planning Students: An Argument for the Studio/Workshop Approach,” *Journal of Planning Education and Research* 9(3): 155-163.
- Long, J. (2012) “State of the Studio: Revisiting the Potential of Studio Pedagogy in U.S.-Based Planning Programs,” *Journal of Planning Education and Research* 32(4): 431-448.
- Neuman, M. (2016) “Teaching collaborative and interdisciplinary service-based urban design and planning studios,” *Journal of Urban Design* 21(5): 596-615.

PLACING PUBLIC SCHOOLS IN PLANNING EDUCATION

Abstract ID: 1488

Individual Paper Submission

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Schools are physical, social, and political infrastructure, integral to healthy and resilient communities. The links between planning and public education run deep, with volumes of empirical research documenting the intersections of housing and school segregation, school quality and housing markets, transportation equity and school travel, and schools and community development. Despite its connections to the core activities and goals of planning practice, the topic of planning for or with schools and school districts remains absent in planning graduate programs. Certainly, individuals with formal training in planning find themselves working in school districts across the country (see e.g., the American Planning Association's Public Schools Interest Group). Further, individual courses have over the years engaged young people in schools in planning projects (see e.g., (McKoy & Vincent, 2007). But as a field, planning has and does not systematically apply the technical or theoretical tools of planning to the public education sector.

In this paper, I provide in-depth reflection and analysis of two instructional efforts at the planning-education nexus. The first is a practicum course designed to engage graduate planning students in research and design of school facilities planning in Philadelphia. Students explored the historical and contemporary interrelationships among metropolitan policy, neighborhood conditions, planning practice, and public education; learned about school facilities planning, management, and inequities; and analyzed trade-offs of different participatory planning and governance models for school facilities planning and management. Working in response to parent and community organizers fighting for safe and healthy school buildings, the students developed a toolkit and recommendations to address the concerns of direct and indirect stakeholders around planning for the Philadelphia School District's facilities, including a participatory framework and governance model.

The second effort is a course for mid-career education leaders pursuing a doctorate in education (EdD). In this course, students learn and use frameworks, tools, and knowledge from planning and urban studies to turn a spatial lens on schools. They grapple with the "place" of schooling within neighborhoods, cities, and regions. Substantively, they examine non-school arenas (i.e., housing, transportation, neighborhood development) and the ways these contextual factors set conditions for learning. They practice using GIS, asset-based community mapping techniques, and power-mapping tools to situate their school-based problems-of-practice in broader metropolitan geographies of opportunity.

I first establish theoretical alignments between planning and public education, in both pragmatist (Schon, 1984) and emancipatory traditions (hooks, 1994). Then, I describe the courses' student compositions, learning goals, pedagogical approaches, and course outcomes. I demonstrate how my pedagogy draws on learning theories of metacognition (Pintrich, 2002) and communities of practice (Wenger, 1998) along with planning theories of reflective practice (Schon, 1984) to support professional development of both planning and education graduate students. I argue that teaching courses at the nexus of planning and education to both graduate planning and education students requires careful attention to the units of analysis, vocabularies, orientations, and politics of two fields of practice. Based on students' reflective assignments, I identify how these kinds of interdisciplinary courses inform and transform professional identity and practice. I conclude with discussion and recommendations about how theoretical traditions across the fields of planning and education can strengthen leadership development in both arenas. Specifically, I suggest ways that planning educators can foster a pipeline of planning practitioners who are competent in and sensitive to school planning issues and how planning education can be integrated into professional development for education leaders.

Citations

- hooks, bell. (1994). *Teaching to transgress: Education as the practice of freedom*. Routledge.
- McKoy, D. L., & Vincent, J. M. (2007). Engaging Schools in Urban Revitalization The Y-PLAN (Youth—Plan, Learn, Act, Now!). *Journal of Planning Education and Research*, 26(4), 389–403.
- Pintrich, P. R. (2002). The Role of Metacognitive Knowledge in Learning, Teaching, and Assessing. *Theory Into Practice*, 41(4), 219–225.
- Schon, D. A. (1984). *The Reflective Practitioner: How Professionals Think In Action* (1st ed.). Basic Books.
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning, and Identity* (1st ed.). Cambridge University Press.

Key Words: planning pedagogy, public education, reflective practice, leadership development, public schools

WRESTLING WITH THE CANON: URBAN THEORY FOR MASTER OF PLANNING STUDENTS IN THE UNITED STATES

Abstract ID: 1509

Individual Paper Submission

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Students earning master's degrees from PAB-accredited programs must learn some urban theory, along with planning theory. This paper addresses urban theory, describing an exercise in wrestling with what is canonical knowledge in this area.

Recent literature calls for changes to the texts assigned in various areas of planning education, documenting lack of diversity of authors assigned, for example, in courses on sustainability (Millard-Ball et al 2021). A comparative study of how the global south was presented in five geography texts finds that coverage of the south was limited in both quantity and quality—and as exceptions rather than “[sites] from which to develop (universal) theory” (Lawhon and Le Roux 2019, 11). A subsequent paper by the same authors and their students (from the global south) discusses the problem of maintaining notions of “northern” and “southern” urbanism. For an urban geography class, this would mean including “less of the canon” and more perspectives from the south as central to any urban geographical theme” (Lawhon et al 2020, 7).

Lack of diversity in the curriculum contributes to perceptions of bias among students of color, as so well documented by García et al (2021). Their research reinforces the need for planning curricula to not only include courses about diversity and inclusion in planning, but also to “integrate diversity throughout” core curricula. Parallel movements in many academic disciplines have gathered momentum, as characterized by the title of an uprising of provocative student videos in the U.K, such as.: Why is my Curriculum White (UCL)? Why is my Curriculum White (LSE)?

Many planning students learn urban theory in courses that have adopted LeGates and Stout's City Reader, now in its 7th edition. The textbook is irresistible to instructors, as it crams so much of the canon into a single 8-part volume. Excellent essays introduce each part, and a shorter essay introduces each of about 8 readings in each part. Readings are excerpted from classic articles and books. I supplement the Reader with diverse sources and topics as well as writers who directly challenge canonical ideas. My supplements do not come wrapped in the essays, and are not excerpted, so students have to read more than the “essence” of the ideas presented.

In 2020, I engaged first year master's students (majority non-white) in developing decolonized reader materials. Early in the term, students formed book clubs, choosing from a list I provided. Students read *Slavery by Another Name*, *Color of Law*, *Folklore of the Freeway*, *Empire of the Summer Moon*, *Caste*, and *My Name is Red* (a novel, not on my list). Clubs made presentations for the midterm, arguing for where in the Reader ideas from their book would address omissions or provide a needed perspective—and which existing reading it should replace. For the final, each student excerpted their book and wrote the accompanying introductory essay.

Although their excerpting skills may need work, students' insights in their introductory essays demonstrate that they care about the omissions and missing perspectives in the *Reader*. Their essays identify alternative knowledge and perspectives of value to their understanding of forces shaping urbanism. This paper analyzes the parts of the reader chosen by students and the themes they develop in their essays.

The book club exercise has many limitations as a means of decolonizing a syllabus. Pedagogically, it carries additional burdens, such as developing a sense of community under pandemic/remote instruction conditions, and learning to work as a team. Nonetheless, especially in a program where the majority of students are non-white, students need to be engaged in the greater project of decolonizing the syllabus.

Citations

- I. Garcia, A. Jackson, S. A. Harwood, A. J. Greenlee, C. A. Lee and B. Chrisinger (2021). "Like a Fish Out of Water:" The Experience of African American and Latinx Planning Students. *Journal of the American Planning Association* Vol. 87 Issue 1 Pages 108-122.
- M. Lawhon and L. Le Roux (2019). Southern urbanism or a world of cities? Modes of enacting more global urban geographical textbooks, teaching and research. *Urban Geography* Vol. 40 Issue 9 Pages 1251-1269.
- M. Lawhon, L. Le Roux, A. Makina, G. Nsangi, A. Singh and H. Sseviiri (2020). Beyond southern urbanism? Imagining an urban geography of a world of cities. *Urban Geography* Vol. 41 Issue 5 Pages 657-667.
- A. Millard-Ball, G. Desai and J. Fahrney (2021). Diversifying Planning Education through Course Readings. *Journal of Planning Education and Research* (March).
- J. Wesely and A. Allen (2019). De-Colonising Planning Education? Exploring the Geographies of Urban Planning Education Networks. *Urban Planning* Vol. 4 Issue 4 Pages 139-151.

Key Words: decolonizing planning education, urban theory, pedagogy

EXPLORING LEARNING CIRCLES AS A TEACHING METHOD FOR TEAM BUILDING AND REFLECTION

Abstract ID: 1544

Individual Paper Submission

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This paper and presentation explore the use of learning circles as an approach to teaching team building and for facilitating reflective practice, two central learning goals for planning programs (the first of which is explicitly required by Planning Accreditation Board (PAB) standards). It presents a case study of the redesign and delivery an early graduate-level course on planning practice and ethics using learning circles to improve course and program outcomes around these two goals. The redesign was undertaken in response to feedback from both faculty and students at the end of the graduate program that identified the need for more explicit training in these two areas, particularly teamwork.

Planning practice often involves working as part of a team. In planning education, students are prepared for this through courses and assignments that require teamwork. In many programs, this includes a core or culminating workshop or studio experience. Despite many opportunities to work in teams in secondary school or undergraduate programs, students do not always arrive in a planning program prepared to form effective teams or to navigate the challenging interpersonal dynamics of teamwork. Indeed, they often arrive having experienced more dysfunctional than effective team environments and are apprehensive about future teamwork. Students are often thrust into team environments with little instruction, with the belief that they either have already learned about teamwork or will figure it out by doing, a situation as likely to reinforce unproductive behaviors as productive ones. Reflection has been discussed in planning as an important skill to facilitate learning and ongoing improvement, including for teamwork (Willson, 2021). Yet reflection, like teamwork, is often something that students are asked to do as part of a course, but there may not be explicit teaching, time set aside, or opportunities for group reflection. It may be difficult to find time for this teaching within a program given all the other important information and skills that must also be taught.

The above might not be the case at all planning schools, but were the circumstances at my school that led to the redesign of a second term (in a trimester system) course on planning practice and ethics. The teaching method chosen was learning circles. Learning circles use cooperative, team-based learning as a means to explore together significant questions or create a meaningful project. Research has consistently shown that people remember more details and understand concepts better when they learn by doing and discussing instead of passively listening. The approach is adapted from “literature circles”, a technique based on the idea and backed by experience that student learning gains are improved “when given choices, time, responsibility, a little guidance, and a workable structure” (Daniels, 2002, 1).

This paper describes the use of learning circles as a method for teaching and practicing both teamwork and reflective practice. In learning circles, students work perform a rotating series of roles that model important teamwork skills, while collaboratively working to investigate a problem. For the course discussed, these problems were weekly planning scenarios that prompted students to consider dynamics of planning practice and individually and collectively reflect on the ethical questions they raised. After describing the model and case, the paper uses student and instructor reflections to discuss the benefits and challenges of the model and suggest ways that planning faculty interested in the model might incorporate it into courses, with specific considerations of teaching in an online and hybrid environment.

Citations

- Daniels, Harvey. 2002. *Literature Circles: Voice and Choice in Book Clubs & Reading Groups*. Portland, Maine: Stenhouse Publishers.
- Willson, David. 2021. *Reflective Planning Practice: Theory, Cases, and Methods*. New York, New York: Routledge.
- Dalcher, Darren. *Rethinking Project Management for a Dynamic and Digital World*. New York, New York: Routledge.

Key Words: Learning Circles, Teamwork, Reflective Practice, Planning Ethics, Planning Practice

THE LIMITS OF THE LIVING LABORATORY: A CASE STUDY ON THE UNIVERSITY CAMPUS AS A TESTBED FOR URBAN TECHNOLOGY DEVELOPMENT

Abstract ID: 1685

Individual Paper Submission

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With the increased adoption of technological and data-centric practices in cities, universities have responded by creating programs in urban data science, urban informatics, smart cities, and civic technologies. At the same time, city governments seeking to partner with the so-called innovation sector have worked to incubate startups and new practices. These forces have made the “living laboratory” a popular term as each has sought to test these technological solutions in situ, outside of the traditional laboratory environment, and as a means of collective discovery. However, with the general public exposed to the benefits and costs of these explorations, questions have emerged on how and whether this engagement model can satisfy the needs to protect citizens and enable exploration.

Instigated by the creation of a degree program that centers on the design and development of technological solutions to urban and civic problems, a living laboratory for student experimentation is being proposed on the campus of the University of Michigan. This endeavor seeks to provide a pedagogical environment where students can access large campus datasets and offer a physical place to situate sensors and surveillance systems that support classroom and research exercises. These technologies would have the campus occupants as research subjects through their everyday inhabitation of the academic spaces. Although its campus lacks the traditional harms found in communities, ethical questions remain about creating such an experimental environment.

This paper presents findings from interviews with diverse stakeholders during the discussion phase of this learning ecosystem and raises the conflicting concerns of different groups within the university. It presents the widely-varied perspectives on research governance, transparency and privacy, facilities and public safety, and equity and inclusion. These findings offer a view on the more significant governance issues and harm to larger communities outside the academic ecosystem. It presents a more complex picture of innovation governance for cities.

Citations

- Kontokosta, C. E. (2018). Urban Informatics in the Science and Practice of Planning. *Journal of Planning Education and Research*, 41(4), 382–395. doi: 10.1177/0739456x18793716
- Kaufman, Sanda and Robert Simons. 1995 “Quantitative and Research Methods in Planning: Are Schools Teaching What Practitioners Practice? *Journal of Planning Education and Research* 15(1): 17-33. doi: 10.1177/0739456X9501500102
- Nesti, G. (2018). Co-production for innovation: The urban living lab experience. *Policy and Society*, 37(3), 310–325. <https://doi.org/10.1080/14494035.2017.1374692>
- Gascó, M. (2017). Living labs: Implementing open innovation in the public sector. *Government Information Quarterly*, 34(1), 90–98. <https://doi.org/10.1016/j.giq.2016.09.003>
- Karvonen, A., & van Heur, B. (2014). Urban laboratories: Experiments in reworking cities: introduction. *International Journal of Urban and Regional Research*, 38(2), 379–392. <https://doi.org/10.1111/1468-2427.12075>

Key Words: Urban Technology, Urban Informatics, Pedagogy, Living Laboratory

FINDING THE ART IN THE ART AND SCIENCE OF STAFF REPORTS

Abstract ID: 1718

Individual Paper Submission

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Staff reports are the most ubiquitous written document created by planners working for local governments around the world. Little is known about them, but they are often not easy to read. Their purpose is to take applications made by property owners for changes to the use of their land or build buildings on their property (from residential housing to commercial shops, maintaining or altering historic features, a temporary building and parking lot, for example), analyze their viability in terms of governmental policies and goals, and then provide that analysis to elected or appointed boards to make their decisions. Previous research shows that staff reports have not changed much over time (Johnson & Lyles, 2016). The conundrum with these reports, and others that planners are known for, is best said by Sandercock (2003, p. 21) who notes that policy reports are “dry as dust. Life’s juices have been squeezed from them.” How can we bring life to these lifeless documents?

For this study, I am working with planning students to understand if using art (Pinder, 2008), “fashion thinking” (Nixon & Blakley, 2012; Särämäkari & Vänskä, 2020), and avant-garde (Jagodzinski, 2013) versions of staff reports result in better day-to-day staff reports. My hypothesis is that staff reports will not change unless we activate different ways of thinking about them. With students, I used a new technique of teaching based on “fashion thinking” including a mood board (McDonagh & Storer, 2004), avant-garde versions of a staff reports, and a traditional but “new” type of video staff report. The results indicate that the process does break down some preconceived notions of how staff reports must be written. The process allows student planners to “pull back the curtain” on their internal dialogues and “expert ways of knowing” (Wiske, 1998). Results of yet unpublished research with planning

commissioners across the country indicates that this is the exact sort of information they are looking for in the staff reports they get. Unexpected results are students indicating that the process of creating the avant-garde staff reports helped with their mental health (Schweitzer, 2016).

Citations

- Jagodzinski, J. (2013). Art and Its Education in the Anthropocene: The Need for an Avant-Garde Without Authority. *Journal of Curriculum and Pedagogy*, 10(1), 31-34. <https://doi.org/10.1080/15505170.2013.790000>
- Johnson, B. J., & Lyles, W. (2016). The Unexamined Staff Report: Results From an Evaluation of a National Sample. *Journal of the American Planning Association*, 82(1), 22-36. <https://doi.org/10.1080/01944363.2015.1109471>
- McDonagh, D., & Storer, I. (2004). Mood Boards as a Design Catalyst and Resource: Researching an Under-Researched Area. *The Design Journal*, 7(3), 16-31. <https://doi.org/10.2752/146069204789338424>
- Nixon, N. W., & Blakley, J. (2012). Fashion Thinking: Towards an Actionable Methodology. *Fashion Practice*, 4(2), 153-175. <https://doi.org/10.2752/175693812X13403765252262>
- Pinder, D. (2008). Urban Interventions: Art, Politics and Pedagogy. *International Journal of Urban and Regional Research*, 32(3), 730-736. <https://doi.org/10.1111/j.1468-2427.2008.00810.x>

Key Words: staff report, pedagogy, avant-garde, art, mental health

THE MILL CREEK INITIATIVE. AN EXPERIMENTAL PEDAGOGICAL APPROACH

Abstract ID: 1787

Individual Paper Submission

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The School of Planning at the University of Cincinnati has undertaken an ambitious initiative – Mill Creek | Reviving an Urban Waterway – that presents an experimental approach to planning education using multiple studio-based and theory courses focused on the Mill Creek for two consecutive years. The overall goal of the initiative is to (a) shine a spotlight on Mill Creek as a regional and multi-jurisdictional entity, (b) conduct multi-scalar analysis and propose multi-disciplinary solutions and recommendations, and (c) revive the waterway and the communities around it. The initiative provides a unique experience to the students as well as generates analysis, recommendations, ideas, and design proposals for the watershed where the school is located. We anticipate that the [hyper]topical and iterative pedagogical approach combined with knowledge sharing, replication and scaling can add significant breadth and depth to the discourse around the Mill Creek.

The Mill Creek is a 28.4-mile stream in Southwest Ohio that flows through Butler County (OH) and Hamilton County (OH) into the Ohio River. According to the Mill Creek Alliance, the Mill Creek watershed includes 37 townships, cities, and villages in Greater Cincinnati and more than 450,000 people who live in the watershed ⁽¹⁾. The Mill Creek has been critical to Cincinnati's growth but after two hundred years of intense economic growth and unmitigated pollution, the Mill Creek was designated as one of North America's most endangered urban waterways in 1996 ⁽²⁾.

The School of Planning recognizes the Mill Creek Watershed as an ideal laboratory for planning education and study at an urban university that can add real and tangible value to the community. Several issues addressed in planning education, including natural resource protection, housing, economic development, social equity, environmental justice, health, design, transportation, infrastructure, recreation, and others are prominent in the valley. The inter-relationship of these topics and the correlation to community outcomes is well researched ⁽³⁾ but this initiative creates a unique opportunity to proactively model the impacts and solution using the Mill Creek watershed as a proving ground for our pedagogical model. It is also an opportunity to model stewardship for our students and impact the future of the urban waterway through service learning.

This multi-semester catalog of multi-scalar and multi-disciplinary courses involving undergraduate and graduate programs in planning and landscape architecture is conducted in collaboration with local and regional partners such as Mill Creek Alliance, Green Umbrella/Tri-State Trails, City of Cincinnati, Hamilton County, Butler County/West Chester Township, Cincinnati Parks, Metropolitan Sewer District and OKI. This collaborative approach represents the new landscape of university-based community research and action but brings potential conflicts of interest as a result of varying participant motivations and the imperative to balance the interests and values of the community with pedagogical needs ⁽⁴⁾.

The paper will reflect on the current state of the initiative with examples of how the region has been considered in studios and classes outcomes and with a summary of the reactions from the stakeholders, the faculty, and the students involved. We will also discuss ways to synthesize the collective outcomes from the courses to benefit the

school, community, and our partners. Multiplicity of audiences and complexity of content requires telescoping communication that allows for varying degrees of engagement. This paper will present our thoughts and process for the same.

Citations

- Mill Creek Alliance. <https://www.themillcreekalliance.org/about-the-creek>
- Hedeon, S., Rivers Unlimited Mill Creek Restoration Project., & Blue Heron Press. (1994). *The Mill Creek: An unnatural history of an urban stream*. Cincinnati: Blue Heron Press.
- Dannenberg, A. L., Jackson, R. J., Frumkin, H., Schieber, R. A., Pratt, M., Kochtitzky, C., & Tilson, H. H. (2003). The impact of community design and land-use choices on public health: a scientific research agenda. *American journal of public health*, 93(9), 1500–1508. <https://doi.org/10.2105/ajph.93.9.1500>
- Dorgan, K. A. (2008). *Principles of Engagement: (mis)Understanding the Community-Design Studio*. *Cityscape*, 10(3), 9–19. <http://www.jstor.org/stable/20868667>

Key Words: pedagogical approach, Watershed, Urban waterway, Community research, endangered

PROMOTING A SUSTAINABLE FUTURE FOR AND WITH THE MIDDLETOWN COMMUNITY: UNIVERSITY-COMMUNITY PARTNERSHIP THROUGH PLANNING EDUCATION

Abstract ID: 1799

Individual Paper Submission

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Higher education institutions have a vested interest in building strong relationships with the communities that surround their campuses. University-Community partnerships are frequently used to enhance translational research efforts and education for students while benefiting the community. These collaborative relationships ideally involve a mutually beneficial exchange in which community agency partners provide knowledge concerning vulnerable populations, their most urgent needs, and the best methods for meeting those needs (Minkler, 2005). However, challenges remain in evaluating such efforts when it comes to the small and midsized towns and cities of the US which usually struggle in attracting innovation and social changes. This study focused on the unique community-university partnership created between the city of Muncie, Indiana, and Ball State University (BSU) through Immersive Learning.

Muncie, Indiana, home of BSU, has known as “Middletown” by Robert and Helen Lynd ()’s sociological case studies of the social life of the community titled and is said to be one of the most studied cities of its size in the US. Muncie has established its manufacturing and industrial reputation since the Indiana Gas Boom of the 1880s. However, after decades of industrial decline starting around the 1980s, many of its flagship industries moved out of the region resulting in many underutilized former industrial sites, often called brownfields. According to US Environmental Protection Agency (EPA), there are more than 30 brownfields in Muncie.

BSU is Indiana’s only public higher education institution with a college of architecture and urban planning. Since its founding in 1966, the College of Architecture and Planning has established and promoted programs that combine teaching, research, and service activities that focus on community-based projects. BSU declares itself as a community-engaged institution, defining community engagement as the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity with communities. To promote educational excellence through community-engaged activities, BSU provides a unique learning opportunity for students by creating a university-community partnership to address the challenges of the community through immersive learning. Department of Urban Planning has been shown a strong record of successful immersive learning activities creating a partnership with Muncie and East

Against the above backdrop, PLAN203 Regional Analysis and Design Studio was designed under the theme of promoting a sustainable future for and with the community. Since 2018, partnering with Sierra Club Hoosier Chapter’s Beyond Coal Campaign, PLAN203 studio has implemented the “Brownfields to Brightfields” Project to assess the solar potential of brownfields in Muncie for finding sustainable development potentials.

This research case will case study a community-engaged planning education endeavor of the department of urban planning at BSU, Muncie, IN, using the “Brownfields to Brightfields” immersive learning project. This immersive learning project was designed to assess the solar energy production potentials of brownfields in the area to promote a sustainable future for the community as well as to promote the community-university partnership. This research will show how the planning program – community partner project was designed based on a holistic and comprehensive understanding of a community, how this innovative pedagogy improved the planning education, and how this approach created benefits for students and the community. The matrix of success will be assessed using the Association of American Colleges and University’s VALUE rubric for students, the community, and the project.

Citations

- Minkler, M. 2005. Community-based research partnerships: Challenges and opportunities. *Journal of Urban Health* 82(2), ii3–ii12.
- Lynd, R. S., Lynd, H. M. 1929. *Middletown: A Study in Contemporary American Culture*. New York: Harcourt, Brace and Company.
- Harris, R. L., Tarchak, L. Small-Town America Is Dying. How Can We Save It?, *New York Times*, Retrieved from: <https://www.nytimes.com/2018/12/22/opinion/rural-america-economy-revive.html>

Key Words: University-Community partnership, planning education, GIS, Regional Planning, Brownfield

DELIBERATE – DECIDE - DISCUSS: FLIPPING CASE STUDY LEARNING WITH A PRACTICAL JUDGMENT SIMULATION

Abstract ID: 1812

Individual Paper Submission

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Active learning prepares planning students to recognize the grounded, multi-paradigmatic, ethical-political aspects of practice. The gold standard for active learning is community-based projects, but there are other ways to use active learning in a planning curriculum. Case studies are an important element, but the predominance of descriptive case studies does not fully reveal the potential of cases. As historical accounts, descriptive cases generally do not engage students in moments of reflection-in-action and practical judgment (see Fischler 2012 on reflective practice). This paper explains the structure and use of a multi-media learning object (MMLO) that presents a scenario, asks for a decision among plausible courses of action, and structures individual and group reflection.

Cases are receiving attention in planning scholarship and education (e.g., Lincoln Land Institute case study series), and in planning for racial equity and justice (Krumholz & Wertheim Hexter 2018). A previous paper (Willson 2020) argued that planning educators should “wake up” case studies by organizing them around a reflection framework concerning key practical judgments. Only a small number of the Lincoln Land Institute case series are termed “inquiry cases” in which the case reader is posed with a question about how to proceed (for example, Finn 2020). This MMLO differs from others in providing discrete choices of planning approach so that users of the MMLO can make direct comparisons.

The MMLO includes: 1) a reflection framework (Willson 2021), 2) a planning scenario that presents plausible courses of action and a user prompt for an initial choice, 3) information on possible outcomes of each choice and a user prompts to assign likelihoods to each one, 4) an opportunity to confirm the initial choice or choose differently, and 5) individual reflection and group discussions on the choices made. Small group conversations focus on each user’s reasoning for their initial and final choice, revealing differences in assumptions about context, personal commitments, and ways of reasoning.

The MMLO was a collaboration between the author and Cal Poly Pomona’s Center for Faculty Development, which provides pedagogical and programming assistance. It addresses issues in developing the MMLO including ensuring that the framework is intuitive for the user, confirming that all courses of action are plausible, and brevity so that the MMLO worked on a computer screen. The paper presents an analysis of student results from using the MMLO. It includes information on the distribution of choices across different groups of students, frequencies with which students change their initial judgment after reflection on outcomes, and the results of user satisfaction surveys of the MMLO.

The MMLO is intended for use in planning education and in professional development. While not initially developed for ethics questions, it is well-suited to use with AICP Code of Ethics cases. The MMLO currently has four cases and can be accessed at <https://elearning.cpp.edu/learning-objects/practical-judgments/>

The paper finds positive results from the “deliberate - decide – discuss” model. Having completed the MMLO, students enter small group discussion having already made a reflective practical judgment, creating a rich environment for learning. Simulation tools such as the MMLO described here provide an opening for students to develop a capacity for reflective choice that will be helpful throughout their practice careers.

Citations

- Fischler, Rafaël. 2012. “Reflective Practice.” In *Planning Ideas That Matter*, S. Sanyal, Bishwapriya, Lawrence J. Vale, and Christina D. Rosan, Eds. Cambridge, MA: MIT Press.

- Krumholz, N. and K. Wertheim Hexter. 2018. *Advancing Equity Planning Now*. Cornell NY: Cornell University Press.
- Willson, Richard. 2020. "Waking Up Case Studies with Reflection on Practical Judgments." Paper 720, presented at the Association of Collegiate Schools of Planning Conference, Virtual conference, November 6, 2020.
- Willson, Richard. 2021. *Reflective Planning Practice: Theory, Cases, and Methods*. New York: Routledge.

Key Words: cases, reflection, pragmatism, practice, pedagogy

WHAT TEACHING STRATEGIES HELP PLANNING STUDENTS FIND CULTURAL COMMUNITY RESEARCH MEANINGFUL?

Abstract ID: 1964

Individual Paper Submission

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In 2016, Association of Collegiate Schools of Planning, Planners of Color Interest Group researchers published a diversity climate survey of planning students in the *Journal of Planning Education and Research* (Greenlee et al. 2008). Their findings included a gap between the value of diversity to planning departments and the experiences of students. The study called for planning educators to make planning education more inclusive and provide better preparation for serving diverse audiences (Greenlee et al., 2008).

Students entering planning programs have a limited perception of the profession and awareness of the impacts of structural racism. They are motivated to change the world through community engagement but may not see a path to accomplish change. Students want to be prepared for the work world but may not be interested in disinvested neighborhood revitalization that demands the input of disfranchised people for a successful outcome. Selecting a pedagogical process that acknowledges inclusive values through meaningful actions and community capacity building is challenging for faculty when they are tasked to impart knowledge, achieve some understanding, and guide student experiences in less than one semester's course.

To address the research question of, "What teaching strategies help planning students find cultural community research meaningful?" the authors reflect upon community-based teaching and learning as a scaffolded approach to increasing student capacity for intercultural learning. Intercultural learning is often described as leading to intercultural competence or sensitivity (Bennett, 1986; Bennett, 2008).

When residents appear to have similar values, economic means, and education backgrounds as students, they may feel familiar enough to navigate a community project. But there is always a need to dig deeper into multicultural residents' disconnections, disillusionment and discontent, community climate and mistrust to help students make meaning of the work they do in communities. If students are not thoughtfully prepared, then working in culturally diverse communities without cultural understanding will result in less effective engagement strategies for the community they serve and/or less meaningful student learning outcomes (Greenlee et al., 2018).

The authors use a reflective, participatory action approach to develop, refine and communicate their practice in the classroom and with communities, where students experience intercultural encounters through community-based learning. Authors' strategies for preparing students to work with diverse community partners will be presented through three examples:

- Building intercultural competence through defined and evolving approaches, beginning with freshman students;
- Overcoming structural institutional barriers in community-based learning in a planning and design competition for Nicodemus, Kansas, a historic Black agrarian community in the Midwest; and
- Partnering with diverse stakeholders on design and planning dialogues for a pocket park to commemorate a complex Civil Rights event in Wichita, Kansas.

Planning faculty should be preparing their students to inclusively serve broad audiences. This session will offer strategies including classroom activities and reflective questions for students gleaned through community development projects in a higher education, community-based learning context. These case studies demonstrate how meaningful community change can also result in self-discovery for the students.

Citations

- Bennett, M.J. (1986). A developmental approach to training for intercultural sensitivity. *International Journal of Intercultural Relations*, 10 (2), 179-95.
- Bennett, M. J. (2008). Transformative training: Designing programs for culture learning. In *Contemporary leadership and intercultural competence: Understanding and utilizing cultural diversity to build successful organizations*, ed. M. A. Moodian, 95-110. Thousand Oaks, CA: Sage.
- Greenlee, A. J., Jackson, A., Garcia-Zambrana, I., Lee, C. A., & Chrisinger, B. (2018). Where Are We Going? Where Have We Been?: The Climate for Diversity within Urban Planning Educational Programs. *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X18815740>

Key Words: intercultural, community-based, learning, teaching

CITIES AND CLIMATE CHANGE PEDAGOGIES: FROM KNOWLEDGE TO SKILLS AND ABILITIES WHEN ADDRESSING THE WICKED PROBLEM

Abstract ID: 1997

Individual Paper Submission

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Teaching cities and climate change mean more than transferring knowledge and skills beyond the effects of the phenomena. Planners and professionals must deal with sustainability, poverty, extreme heat, sea-level rise, habitat loss, drought, water scarcity, and food deserts. These are topics that matter to everyone. It has been included across broader social contexts and in courses about planning for climate change, cities and climate change, sustainability, energy, and green infrastructure.

Theoretical analyses have recognized the complexity of climate change and the contextual features of a climate change pedagogy across countries, and the different scholarly visions for education learning techniques (Perkins, et al, 2018). Also, the sophisticated understanding of the scientific basis of climate change affects the corresponding disciplines of future professionals, which gives the students a newfound sense of personal responsibility and agency for addressing climate change (Coleman, et al, 2017). Therefore, universities have engaged in understanding the phenomena and the complex interactions between social, economic, and environmental systems with programs that lack coherence. Moreover, teaching often focuses on climate problems rather than progressively scaffolding students' skills for finding practical solutions. (Cross and Congreve, 2020).

This research evaluates the primary skills and actions when planning to deal with a wicked problem. By considering the research question: is teaching cities and climate change the key to advancing climate actions through activism among students? The research uses a sequential exploratory mixed method design with former students of the Cities and Climate Change course at the Central American University Jose Simeon Cañas - UCA, by its Spanish acronym - in El Salvador. The sample considered active students enrolled in the course for four semesters from 2020 to 2021. The objective is to understand the primary learning outcomes after taking the course. This study derives from semi-structured interviews and surveys with a sample of former students enrolled in the course. The sample collected and analyzed data in two consecutive phases within one study. In the quantitative phase, the sample comprised 150 of 618 students enrolled, and the results were analyzed using exploratory factor analysis. The qualitative data derives from 32 semi-structured interviews.

In the qualitative phase, great themes included that the classes promote the application of theory to concrete situations and set up the basis for other courses that were not specifically designed around climate change as a central focus in the curriculum of their careers. Also, the complex approach to climate change teaching was not easily understood by all levels of students, which makes it challenging to engage students with wicked problems. In the quantitative phase, several factors were obtained that classified the skills into two groups: "knowledge skills" that relate to the scientific basis of climate change and specific skills for their professions and critical thinking; and "skills and abilities" that include changes in some personal practices that include flexibility and adaptability, interactions with other social, political, and cultural access, and a minimum degree of agency.

This paper highlights the importance of the pedagogy used as a tool for integrating cities and climate change into courses from multiple disciplines to increase agency among students. The contribution of the research helps to identify more appropriate methods that include skills and complexity in the programs that foster and improve students' preparedness for cities under climate change and meaningful climate change. Finally, any given course should be "solution-focused" applied to mitigation, adaptation, and resilience to climate change.

Citations

- Perkins, Krystal M., et al. "International perspectives on the pedagogy of climate change." *Journal of Cleaner Production* 200 (2018): 1043-1052.

- Coleman, K., Murdoch, J., Rayback, S., Seidl, A., & Wallin, K. (2017). Students' understanding of sustainability and climate change across linked service-learning courses. *Journal of Geoscience Education*, 65(2), 158-167.
- Cross, I. D., & Congreve, A. (2021). Teaching (super) wicked problems: authentic learning about climate change. *Journal of Geography in Higher Education*, 45(4), 491-516.
- Jamal, T., & Watt, E. M. (2013). Climate change pedagogy and performative action: Toward community-based destination governance. In *Tourism Governance* (pp. 171-188). Routledge.
- Leal Filho, W., Morgan, E. A., Godoy, E. S., Azeiteiro, U. M., Bacelar-Nicolau, P., Ávila, L. V., ... & Hugé, J. (2018). Implementing climate change research at universities: Barriers, potential and actions. *Journal of Cleaner Production*, 170, 269-277.

Key Words: Climate Change, Cities, Climate Change Pedagogies

LEARNING FROM COLLABORATIVE PRACTICE: THE NEHEMIAH INITIATIVE AND COLLEGE OF BUILT ENVIRONMENT'S FIRST THREE YEARS OF SHARED CLASS DEVELOPMENT

Abstract ID: 2007

Individual Paper Submission

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This paper examines student, instructor, and mentor experiences with a university-community collaboration built on preventing displacement and building Beloved Community. We find that students, faculty, and administrators recognize the transformational capacity of interdisciplinary, team-based, real-world learning within the context of collaboration and intercultural communication.

Our collaborative exercise differs from most because it is simultaneously:

1. Interdisciplinary by design, including all five college departments.
2. A multi-year project, entailing commitment and coordination at the college level.
3. Co-created with the community partner, including regular teaching, community visits, and organizational meetings.

Despite the challenges of un-inclusive educational and professional spaces in urban planning, our study shows that enabling professional, cross-cultural, and interdisciplinary work coupled with intercultural communication training holds promise for changing classrooms and workplaces. Students, faculty, and administrators alike recognize the potential and appropriateness of this work. Community partners have found that they can leverage municipal and university resources to move community goals forward. Through the Nehemiah Initiative Seattle-UW College of Built Environments (NI-CBE) collaboration, we provide educational and professional training for graduate students and assist with pre-development service needs of local Black churches.

This paper discusses how we are changing teaching and learning in our college. We examine the NI-CBE collaboration in the context of parallel efforts toward supporting equity, diversity, and inclusion (EDI) at the University of Washington and as a part of a broader move toward more equitable and inclusive communities. We introduced the collaboration and its model of community-based redevelopment in a previous paper (Born, Berney et al., 2021), and are now interrogating the collaboration from the planning education and pedagogy perspective. This paper provides takeaways for planners working towards anti-racist futures.

We use course evaluations and a follow-up survey, community partner and mentor feedback, and reflective discussions among the faculty of each of the classes involved to evaluate impact. We find that the professional development aspects are important and well-supported by students. And, leadership from both partners combined with a commitment to a long-term engagement helps navigate the complexity of the university-community relationship. Challenges include the short duration of classes, cross-cultural and cross-disciplinary communication, different values, and the culture and bureaucracy of the university.

We examine our practices against the planning pedagogy literature, particularly studio-based education opportunities, interdisciplinarity, and university-community collaborations, and working and teaching in cross-cultural settings. Finally, we examine challenges, catalysts, and successes over the last three years of teaching. Our

contributions to planning academics and practitioners are in two main areas: the impacts of the collaboration on the CBE and our professional training, and our engagement with the growing professional need for interdisciplinarity and intercultural competency.

Citations

- Born, B., Berney, R., Baker, O., Jones, M.R., King, D., & Marcus, D. (2021). Pushing back on displacement: Community-based redevelopment through historically Black churches. *Societies*, 11(1), 1-20. <https://doi.org/10.3390/soc11010010>
- García, I., Jackson, A., Hardware, S.A., Greenlee, A.J., Lee, C.A., & Chrisinger, B. (2020). Like a fish out of water. *Journal of the American Planning Association*, 87(1), 108-122. DOI: 10.1080/01944363.2020.1777184
- Greenlee, A.J., Jackson, A., García-Zambrana, I., Lee, C.A., & Chrisinger, B. (2018). Where are we going? Where have we been? The climate for diversity within urban planning educational programs. *Journal of Planning Education and Research*, 1-19 DOI: 10.1177/0739456X18815740
- Long, J. (2012). State of the studio: Revisiting the potential of studio pedagogy in US-based planning programs. *Journal of Planning Education and Research* 32(4), 431-48. DOI: 10.1177/0739456X12457685
- Yocom, K., Proksch, G., Born, B. & Tyman, S.K. (2012). The Built environments laboratory: An interdisciplinary framework for studio education in the planning and design disciplines. *Journal for Education in the Built Environment*, 7(2), 8-25, DOI: 10.11120/jebe.2012.07020008

Key Words: Anti-racist futures, intercultural communication, interdisciplinary studio pedagogy, university-community collaboration, planning education

MOUND UP NEIGHBORHOOD REVITALIZATION PLAN: LESSONS FROM A REPARATORY COMMUNITY - UNIVERSITY PARTNERSHIP

Abstract ID: 2071

Individual Paper Submission

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For the last two years, the Rhodes College Urban Studies program has been working with a coalition of community based organizations and activists to take a more reparatory approach to participatory planning. This approach acknowledges the systemic violence and trauma enacted on the Orange Mound neighborhood, the oldest Black neighborhood in Memphis and one of the first in America with a large number of land owners as early as the 19th, early 20th century. Since the 1960s, local, state, and federal policies have crippled community infrastructure and systems, while in the recent years the neighborhood is becoming landlocked by appreciating housing sub-markets.

This research tells the story of this community-university partnership that builds from the recognition of longstanding histories of extractive partnerships, in both universities and greater planning processes, that often reflect a top-down approach that does not fulfill this potential. This study aims to determine what it looks like to build power through integrating a participatory approach to neighborhood planning. To build out this idea of Reparatory Community - University Partnership, interviews with community stakeholders, professors working on the partnership, and students involved in the work were analyzed alongside content analysis of similar neighborhood revitalization plans. The results suggest that this approach positions residents as meaningful developers and may act as a roadmap to future partnerships seeking to create a collaborative neighborhood development plan. The impact on urban planning pedagogy is also considered.

Citations

- Dozier, D. (2018). A Response to Abolitionist Planning: There's No Room for 'Planners' in the Movement for Abolition. *Progressive City*, 9.
- Reardon, K., & Raciti, A. (2018). Building the Progressive City One Neighborhood at a Time: The Story of the East St. Louis Action Research Project (USA). *Tracce urbane. Rivista italiana transdisciplinare di studi urbani*, (4).
- Winkler, T. (2013). At the coalface: Community-university engagements and planning education. *Journal of Planning Education and Research*, 33(2), 215-227.

Key Words: Community-University Partnerships, Reparatory Planning, Planning Pedagogy

TEACHING REFLECTION: MIXED METHODS PEDAGOGY RESEARCH TO BUILD SOCIAL AND EMOTIONAL SKILLS

Abstract ID: 1601

Poster

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In planning we typically discuss reflection as a tool to cement learning from practice-based or experiential learning opportunities. Reflection is often a core component of community-engaged projects and classroom experiences and we consider ‘reflection-in-action’ an important frame for effectively engaging communities in planning practice (Baldwin & Rosier, 2017; Botchwey & Umemoto, 2018; Das et al., 2020). However, we rarely (1) center reflection as an activity in which to directly build specific metacognitive, relational, and social/emotional skills, and (2) provide students with sufficiently structured practices to support their development as reflective practitioners. Educators often lack the tools to effectively support students in building their capacity for reflection, and by failing to center it in the classroom we tacitly communicate that reflection is not actually important.

This project analyzes the effectiveness of structured reflection activities at supporting planning students in developing critical social and emotional capabilities. These capabilities support planners in engaging in embodied praxis and in effectively leveraging their expertise to support communities develop a vision for their shared futures.

Specifically, this research leverages a mixed methods design which includes qualitative data coding of master’s students’ work (N=40) as well as quantitative data collected using pre-existing psychometric scales for cognitive development, emotional intelligence, and holistic thinking. Results of the work show student growth in reflective capabilities and in psychometric constructs. This work suggests that educators should integrate more structured reflection activities into required coursework and makes a methodological contribution by leveraging educational and psychological scales into planning pedagogy research.

Citations

- Baldwin, C., & Rosier, J. (2017). Growing Future Planners: A Framework for Integrating Experiential Learning into Tertiary Planning Programs. *Journal of Planning Education and Research*, 37(1), 43–55. <https://doi.org/10.1177/0739456X16634864>
- Botchwey, N., & Umemoto, K. (2018). A Guide to Designing Engaged Learning Courses in Community Planning. *Journal of Planning Education and Research*, 40(3), 332–344. <https://doi.org/10.1177/0739456X18772075>
- Das, P., Tadj, Y., Cloudwatcher, S., & Ho-Schar, C. (2020). Future Planning Practitioners and the “Waipahu Talk Story”: Learning from and Reflecting on Participation. *Journal of Planning Education and Research*, 0739456X20954536. <https://doi.org/10.1177/0739456X20954536>

Key Words: pedagogy, reflection, emotions, embodied praxis

Track 11 - Planning Process, Administration, Law and Dispute Resolution

Track 11 Pre-Organized Session Summaries and Abstracts for the Sessions

PERFORMING PUBLIC PARTICIPATION - SESSION 2: CRITICAL PERSPECTIVES ON EMERGING TECHNOLOGIES FOR PARTICIPATORY PLANNING

Pre-Organized Session 40 - Summary
Session Includes 1513, 1514, 1515, 1516

MILZ, Dan [University of Hawaii] dmlz@hawaii.edu, organizer

This panel focuses on the expanding role that information and communication technologies play in participatory planning processes. Technology should broaden the reach of participatory planning processes, but it is not clear that the benefits outweigh the costs. The pandemic has illustrated the distinctions between the strengths of planning technologies and their drawbacks, making this an opportune time to ask: are planning technologies deepening engagement or are they reproducing the performative approaches of in-person participation? Have planning theories kept pace with the technological advances, and if not, where should planners turn for theoretical insights? How might planning technologies be designed to fulfill the goals of public participation? This panel is part of a series of pre-organized sessions grouped under the heading, Performing Public Participation: Reinvigorating a Critical Research Agenda for Urban Planning and Public Policy. These sessions aim to ‘take-stock’ of significant changes to the theory and practice of public participation and to establish an agenda for research and practice for the middle of the twenty-first century.

Objectives:

- Articulate the benefits and and threats of technology for participatory planning
- Identify potential opportunities for technology to improve participatory planning practices
- Describe theoretical limits and advancements that need to be considered to integrate technology into participatory planning processes

BIGGER, BETTER, FASTER: PICK TWO – EXAMINING THE OPPORTUNITIES AND CHALLENGES OF PARTICIPATION TECHNOLOGY IN PLANNING PRACTICE

Abstract ID: 1513
Abstract within Pre-Organized Session 40

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In 2020 (Johnson et. al, 2020), we conducted research on how municipal deployment of smart city technology was titling the relationship between residents and city hall towards one that was more transactional. This research was conducted before the COVID-19 pandemic which served as an accelerant for technology adoption in public participation processes (Robinson and Johnson, 2021).

Now, more local governments are returning to in-person work, and re-commencing in-person public meetings. The Government of Canada is also gearing up to launch a second round of the Smart Cities Challenge. How have the past two years of technology adoption shaped the channels of communication between government and citizen? Right now is an appropriate time to examine what kinds of technology urban planners are using as part of their work with the public, and to evaluate what the impacts of these technologies might be on planner-resident relationships. The timing of this examination is driven by advances in technology, pandemic-driven technology uptake and by a broader movement in planning questioning the impacts of technology on our practice (Potts, 2020). We ask what are the conceptual and practical implications for the introduction and increased reliance on mediating technologies to shape these relationships? This paper will explore opportunities and challenges presented by the rapid adoption of participatory technologies within a comparably short time period. We identify the impacts of digital technologies on the quality, speed, and spread of citizen participation, and the potential for these technologies to shift participation

towards a transactional mode, and away from deeper modes of engagement. We conclude with recommendations for future planning research and guidance for practicing planners.

Citations

- Johnson, P. A., Robinson, P., & Philpot, S. (2020). Type, tweet, tap, and pass: How smart city technology is creating a transactional citizen. *Government Information Quarterly*. Volume 37, Issue 1, January 2020, 101414, <https://doi.org/10.1016/j.giq.2019.101414>
- Robinson, P., & Johnson, P. A. (2021). Pandemic-Driven Technology Adoption: Public Decision Makers Need to Tread Cautiously. *International Journal of E-Planning Research (IJEPR)*, 10(2), 59-65. doi:10.4018/IJEPR.20210401.0a5
- Potts, R. (2020). Is a New 'Planning 3.0' Paradigm Emerging? Exploring the Relationship between Digital Technologies and Planning Theory and Practice. *Planning Theory & Practice*, 0(0), 1–18. <https://doi.org/10.1080/14649357.2020.1748699>

Key Words: public participation, civic engagement, smart cities, technology

DIGITAL PARTICIPATORY GOVERNANCE: RESOLVING OR HARD-CODING COMMUNICATIVE PLANNING'S DEMOCRATIC DEFICITS?

Abstract ID: 1514

Abstract within Pre-Organized Session 40

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Digitally mediated participation in planning processes has grown significantly, particularly during the COVID era (Milz & Gervich, 2020) and, in an emergent, although belated, digital turn for participatory planning theory, there is a growing body of research attempting to trace this growth and grapple with its implications (e.g., Afzalan & Muller, 2018; Evans-Cowley & Hollander, 2010; Wilson & Tewdwr-Jones, 2022). Despite these efforts, digital participatory planning has not been fully drawn into the productive debates around theories of participation for democratic planning. Of those planning scholars engaged with this work, many are focused on implementation questions for digital tools and whether Internet Communications Technologies (ICTs) or digital Planning Support Systems (PSS) can help achieve the *deliberative* democratic goals of participatory planning, with little interwoven critique of participation itself. This conceptual paper will interrogate the digital modality of deliberative planning more critically by drawing it into debates that have emerged in participatory theory between communicative and agonistic approaches.

Communicative and agonistic positions form opposing pillars of our contemporary theoretical conceptualizations of participatory planning. The dialectic between these pillars, including critiques of collaboration from the postpolitical lens and the tensions between conflict and consensus, are key elements of planning theory. More recently, various efforts to bridge or dismantle the communicative-agonistic divide have emerged while continuing debates in deliberative political theory, not always reflected in planning debates, have brought further nuance. However, despite their growing prominence in planning theory and practice, examinations of digital technologies for participatory process have not been fully structured onto this dual foundation. In fact, it appears that conceptions of digital participatory planning have sailed past some of these elemental debates, risking in digital engagement theory and practice a replication, or perhaps an exacerbation, of the limitations of the communicative approach. There is an under-recognized danger, for example, that digital participatory governance may be yet another way for state actors to simultaneously claim to empower citizens while using a participatory mechanism to bring order to a process or bracket out dissent.

In addition, this paper examines how a digitized politics itself might address some of the democratic deficits of deliberative participation identified by postpolitical critiques. Digital participatory planning literature and postpolitics/agonistic planning literature seem to have been insulated from one another to their mutual disbenefit. Following Smith (2017), with the advent and near ubiquity of networked communications technologies, this may be the first time democratic agonistic disruption and a thorough politicization of deliberative spheres is actually possible, opening new sites of resistance as well as cooperation in participatory planning.

Citations

- Afzalan, N., & Muller, B. (2018). Online Participatory Technologies: Opportunities and Challenges for Enriching Participatory Planning. *Journal of the American Planning Association*, 84(2), 162–177.
- Evans-Cowley, J., & Hollander, J. (2010). The New Generation of Public Participation: Internet-based Participation Tools. *Planning Practice & Research*, 25(3), 397–408.

- Milz, D., & Gervich, C. D. (2021). Participation and the pandemic: how planners are keeping democracy alive, online. *The Town Planning Review*, 92(3), 335–341.
- Smith, T. G. (2017). *Politicizing Digital Space: Theory, the Internet, and Renewing Democracy*. University of Westminster Press.
- Wilson, A., & Tewdwr-Jones, M. (2022). *Digital Participatory Planning: Citizen Engagement, Democracy, and Design*. Routledge.

Key Words: public participation, deliberative democracy, agonism, digital participatory planning, postpolitics

THE UPS AND DOWNS OF TECHNOLOGY IN PLANNING

Abstract ID: 1515

Abstract within Pre-Organized Session 40

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There are two competing narratives about technology in planning, one utopian and the other dystopian. The utopian worldview includes open-source software, voting, public testimony, virtual reality, social media, social networks, et cetera (Afzalan, 2012; Al-Kodmany, 2001) and sees promise that technology can expand participation and empower citizens. The dystopian perspective includes smart cities technology and blends computer science, human computer interaction, big data, and engineering (Batty, et al; 2012). Some speculate that data collected from or given by citizens and the Internet will become the new city infrastructure — from mitigating crime, to monitoring pollution levels — technology will literally make the city smarter (Batty, et al, 2012). These scholars see a new and unavoidable dawn approaching where human settlements will be interconnected for the betterment of all. The dystopian view — that technology will exacerbate existing inequalities and power dynamics can be found in a variety of fields as well — Information studies, human computer interaction, geography, gender studies and so on (Sadowski, 2020).

Drawing on Gandy's (2005) ideas on Cyborg Urbanization, this research is synthesizing these two viewpoints. Gandy encourages planners to work the concept of the Cyborg, 1) this in between and not fully developed space of what cities could be and 2) reactionary to what cities have become where old abandoned technology (i.e., train-hards, steel mills, etc.) meets new cybernetics; an incomplete digitization process that's changing human settlements (Gandy, 2005). In other words, the city of the future will not wholly be a tech utopia or dystopia; it will be something of a "Frankenstein" instead. How will planning practice contribute to this integration, and how might these ongoing efforts create a Utopia for some and Dystopia for others as kluge together the city of the future — how can grassroots and community planners sift these various binaries to create their ideal future within this Cyborg Landscape?

Because of my unique position in the geography of community planning and technology, I am able to actively study the technologists who are working to create the Cyborg City. I have conducted interviews with technologists from the Progressive Coders Network, and the Detroit Community Technology Project, who are contributing to grassroots and civic urban planning projects and have been creating educational materials for grassroots communities to ownership of their technology needs. I have also conducted auto-ethnographic research based on my first-hand experience as a program director and kumu (teacher) for the Purple Mai'a Foundation in Honolulu Hawai'i. In this capacity I have engaged, supported and watched the Native Hawaiian community use technology and entrepreneurship to revitalize their culture, language and organize against the larger U.S. hegemony for further land rights.

Analysis of interview and observational data, raises new questions and presents critical possibilities on what cyborg participatory planning can look like within this shifting topology; a praxis of real world problem solving on how to make technology work for marginalized communities and community planning, to create new interventions that can help community planners rethink technology, the internet, smart cities, and public participation.

Citations

- Al-Kodmany, K. (2001). Visualization Tools and Methods for Participatory Planning and Design. *The Journal of Urban Technology*, 8(2), 1–37.
- Afzalan, N., & Muller, B. (2018). Online Participatory Technologies: Opportunities and Challenges for Enriching Participatory Planning. *Journal of the American Planning Association*, 84(2), 162–177.
- Batty, M., Axhausen, K. W., Giannotti, F., Pozdnoukhov, A., Bazzani, A., Wachowicz, M., Ouzounis, G., & Portugali, Y. (2012). Smart cities of the future. *The European Physical Journal Special Topics*, 214(1), 481–518. <https://doi.org/10.1140/epjst/e2012-01703-3>
- Gandy, M. (2005). Cyborg Urbanization: Complexity and Monstrosity in the Contemporary City. *International Journal of Urban and Regional Research*, 29(1), 26–49. <https://doi.org/10.1111/j.1468-2427.2005.00568.x>
- Sadowski, J. (2020). *Too smart: How digital capitalism is extracting data, controlling our lives, and taking over the world*. MIT Press.

PARTICIPATORY MODELING FOR COLLABORATIVE PLANNING: FROM POTENTIAL TO REALIZATION

Abstract ID: 1516

Abstract within Pre-Organized Session 40

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Participatory modeling is a collaborative approach to formalize shared representations of a problem and, through the joint modeling process, design and test solutions to that problem. This approach is particularly well-suited to address complex social and environmental problems like climate change, social and economic justice, and sustainable resource management, where interaction effects among multiple actors and factors make the causes and consequences of the problem unclear, and where a diversity of values and perspectives may lead to conflict about concrete pathways forward. Engaging in participatory modeling with different modeling techniques helps elicit diverse stakeholder knowledge (formal/informal, explicit/tacit, scientific/experiential) and harnesses this diversity to move from conflict to solutions as the collaboration strengthens relationship-building, empathy, trust, systems thinking, and collective agency for decision-making.

In recent years, scholars and practitioners developing and conducting various forms of participatory modeling have come together as a community and coalesced this rapidly growing application of knowledge co-production. This effort has contributed to streamlining the field in terms of standards for consistent reporting of participatory modeling cases (Gray et al., 2018), lessons learned in the cumulative experience of participatory modelers (Sterling et al., 2019), a guide to align approaches with problem types (Voinov et al., 2018), and future directions and recommendations for improvement (Hedelin et al., 2021; Jordan et al., 2018). Publication of cases contribute to the accumulation of experience on the various dimensions highlighted for improvement, most notably, assessment of the modeling products and outputs.

Despite the potential of participatory modeling to inform planning and policy, this practice has yet to become a mainstream approach in our field. The reasons are several. First, it is hard to standardize the approach, as it must be heavily tailored to the characteristics and context of each planning problem, including the stakeholders engaged in the process. Second, it is onerous; it requires long-term commitment and a broad range of skills (e.g., modeling, visualization, facilitation) that can only be attained through extensive training and collaboration. Finally, there are multiple dimensions in participatory modeling to attend to beyond engagement and modeling. The first two reasons are currently being addressed with a resurgence of knowledge co-production and ethical participation in scholarship, in practice, and more recently in funding agendas. Still, most of the development of the practice has focused on modeling tools and engagement techniques, and often without a clear articulation between them. We propose a framework that articulates these and other necessary dimensions of participatory modeling to further evolve and scale up this approach for planning and decision-making. We build on prior work to structure our participatory modeling framework around the iterative steps involved and the outcomes guiding the design of each step, from problem definition to preference elicitation, to collaborative model building and simulation, to deliberation of tradeoffs across solutions, to implementation (figure will be attached). Engagement and assessment traverse the entire participatory modeling process to support collaborative sense making and synthesis, and to provide the information necessary for evaluation and adjustment.

We use this framework to identify gaps and the interdisciplinary scholarship to draw from, to move this practice from potential to realization. Here, we highlight aspects of interface design and model biases, value elicitation and inclusion, management of diversity and innovation through facilitation, and the potential and need for novel assessment methodologies. We anticipate that this framework can account for the increasingly complex, diverse, and interconnected social systems, and harness it for social learning, creative solution-building and democratic decision-making.

Citations

- Gray, S., Voinov, A., Paolisso, M., Jordan, R., BenDor, T., Bommel, P., Glynn, P., Hedelin, B., Hubacek, K., Introne, J., Kolagani, N., Laursen, B., Prell, C., Schmitt Olabisi, L., Singer, A., Sterling, E., & Zellner, M. (2018). Purpose, processes, partnerships, and products: Four Ps to advance participatory socio-environmental modeling. *Ecological Applications*, 28(1), 46–61. <https://doi.org/10.1002/eap.1627>
- Hedelin, B., Gray, S., Woehlke, S., BenDor, T. K., Singer, A., Jordan, R., Zellner, M., Giabbanelli, P., Glynn, P., Jenni, K., Jetter, A., Kolagani, N., Laursen, B., Leong, K. M., Schmitt Olabisi, L., & Sterling, E. (2021). What's left before participatory modeling can fully support real-world environmental planning processes: A

case study review. *Environmental Modelling & Software*, 143.
<http://urn.kb.se/resolve?urn=urn:nbn:se:kau:diva-85356>

- Jordan, R., Gray, S., Zellner, M., Glynn, P. D., Voinov, A., Hedelin, B., Sterling, E. J., Leong, K., Olabisi, L. S., & Hubacek, K. (2018). Twelve questions for the participatory modeling community. *Earth's Future*, 6(8), 1046–1057.
- Sterling, E. J., Zellner, M. L., Jenni, K. E., Leong, K., Glynn, P. D., BenDor, T. K., Bommel, P., Hubacek, K., Jetter, A. J., Jordan, R., Schmitt Olabisi, L., Paolisso, M., & Gray, S. (2019). Try, try again: Lessons learned from success and failure in participatory modeling. *Elementa: Science of the Anthropocene*, 7(1), 9-.
<https://doi.org/10.1525/elementa.347>
- Voinov, A., Jenni, K., Gray, S., Kolagani, N., Glynn, P. D., Bommel, P., Prell, C., Zellner, M., Paolisso, M., & Jordan, R. (2018). Tools and methods in participatory modeling: Selecting the right tool for the job. *Environmental Modelling & Software*, 109, 232–255.

Key Words: participatory modeling, complex system modeling, participatory planning, democratizing decision-making

PERFORMING PUBLIC PARTICIPATION - SESSION 3: LEARNING THE ROPES OF PARTICIPATION FROM THE GRASSROOTS

Pre-Organized Session 85 - Summary

Session Includes 1454, 1455, 1456, 1457, 1458

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Community members' engagement in participatory planning requires an investment of tremendous amounts of time and emotional labor that is not well recognized within the planning profession (Inch 2015). What would participatory planning look like if planners listened more closely to citizen experiences? As several scholars note (Legacy, 2017, Beebejaun & Vanderhoven 2010, Laskey, 2019), the best sources of inspiration for overcoming the perceived crisis in participatory planning lie in the informal organizing of community groups, whose efforts often stand in stark contrast to the increasingly bureaucratic approaches used by professional planners. In this panel, we draw together scholars who are building new practices and theories of participatory planning from the ground up. This panel is part of a series of pre-organized sessions grouped under the heading, Performing Public Participation: Reinvigorating a Critical Research Agenda for Urban Planning. These sessions aim to 'take-stock' of significant changes to the theory and practice of public participations and to establish an agenda for research and practice for the middle of the 21st century.

Objectives:

- Appreciate citizen experiences of public participation and citizen-led processes
- Learn about how this could be used to improve current practice

REVISITING THEORIES OF “PARTICIPATION” TO ADDRESS THE FAILURES OF “REPORTING BACK”

Abstract ID: 1454

Abstract within Pre-Organized Session 85

RIVERA, Danielle [University of California Berkeley] dzrivera@berkeley.edu, presenting author

Best practices for participation in planning and policymaking suggest that practitioners “report back” to participants as the final stage of any participatory process. This constitutes a critical recognition of the time and energy participants expend on participatory processes. While an indispensable goal, reporting back remains elusive, as evidenced by critiques from community-based organizers and scholarly evaluations of participation in practice (Hamideh, 2020; Karner, et al., 2019). Many of these studies have long eluded to foundational and procedural errors in how participation is defined and conceived (Cornwall, 2008; White, 1996). Here, community input on the problems with dominant participatory approaches are examined through feedback from heavily over-researched communities in California and Texas. To support these insights, student input from the author's own course on “Participation + Engagement” is also reviewed. Of note, there is a widespread lack of resources and tools aimed specifically at defining or identifying how to “reporting back.” While it is considered “best practice” to report back to participants, the question posed here is: why is it so difficult to undertake reporting back in practice? For both practitioners and researchers?

Building upon these observations from the field and from the author's teaching, this paper systematically examines alternative participatory approaches which better integrate efforts to report back to participants and community

partners from the outset. Such approaches largely diverge from dominant participation frameworks (from IAP2 and other similar organizations), instead using a fundamentally different theoretical basis for framing “participant” and “participation” relative to the community. After proposing a typology of these approaches, the paper concludes with suggestions for how our teachings and theorizations of participation must be reframed to eliminate the issues of “reporting back” by re-envisioning the relationship between practitioner/researcher and community from the outset. Ultimately, what is questioned is whether reporting back, itself, is a symptom of the very issues widely-identified with participation.

Citations

- Hamideh, S. (2020). Opportunities and Challenges of Public Participation in Post-Disaster Recovery Planning: Lessons from Galveston, TX. *Natural Hazards Review*, 21(4), 1-16.
- Karner, A., et al. (2019). The View from the Top of Arnstein’s Ladder: Participatory Budgeting and the Promise of Community Control. *Journal of the American Planning Association*, 85(3), 236-254.
- Cornwall, Andrea. (2008). Unpacking ‘Participation’: Models, Meanings and Practices. *Community Development Journal*, 43(3), 269-283.
- White, Sarah C. (1996). The Uses and Abuses of Participation. *Development in Practice*, 6(1), 6-15.

Key Words: Public Participation, Community Engagement, Teaching, Community Development

COMMUNITY KNOWLEDGE SLAPS BACK: WHEN RESIDENTS DISRUPT PLANNING THROUGH SELF-ORGANIZED INSURGENCY

Abstract ID: 1455

Abstract within Pre-Organized Session 85

LASKEY, Allison [Wayne State University] ablaskey@wayne.edu, presenting author

After her group issued a set of demands to “Stop Displacement, Resegregation, and Gentrification” in Detroit, Toyia Watts, president of the grassroots neighborhood organization Charlevoix Village Association (CVA), began using the phrase “Knowledge is Power” to guide their activity. Traditionally, planning and policy relied heavily on expert knowledge to make decisions, but mass movements of the 1960s won measures to hold the state accountable, enforce transparency, and gain input in policy processes. Ms. Watts and CVA were trying to employ these mechanisms of public participation to make the state-directed planning and revitalization process for their neighborhood answer the needs and wants of long-term working class Black residents. However, CVA found that they had to disrupt the planning process to make their voices heard (e.g. by publicizing demands for equitable development, transforming the structure of planning meetings, and shutting down meetings altogether). These insurgent modes of engagement relied on an analysis of power that built residents’ collective understanding of not only why it was necessary to battle developers and the state, but also how to intervene strategically, so they would not get coopted, neutralized, or crushed but actually win concessions and shift the terms of engagement in their favor.

This paper uses CVA’s example to engage with planning’s theories of knowledge. How is community knowledge distinct from, and how does it interact with, other types of planning knowledge? How can working class and oppressed communities use their knowledge to promote justice in the planning process?

This paper examines the role of community knowledge in planning theory to investigate how planning uses knowledge as a tool of power, and how disadvantaged communities can collectively engage their own power to contest the state when planning is not meeting their needs. The example of CVA demonstrates how a self-organized insurgent group can intervene with disproportionate influence to challenge neoliberal planning. Ethnographic data collected through participant observation, interviews, and document analysis from 2017-2019 demonstrate that the state engaged with community knowledge by restricting and channeling it. Residents learned from this experience how to break through these restrictions and bypass bureaucratic channels to demand more resources for their community. Residents learned how to strategically target their collective critique to achieve significant results (e.g. increasing the affordability of developments, stopping a neighborhood development, and elevating issues such as home repair grants into a political hot-button). By sharing knowledge with other grassroots organizations around housing justice, they leveraged their impact and elevated their struggle to a city-wide level. CVA offers an example of how working class and oppressed communities can “flip the script” on institutional public participation by building planning theory from the grassroots.

Citations

- Huq E (2020) Seeing the insurgent in transformative planning practices. *Planning Theory*. SAGE Publications Sage UK: London, England: 1473095219901290.

- Jacobs F (2019) Black feminism and radical planning: New directions for disaster planning research. *Planning Theory* 18(1): 24–39. DOI: 10.1177/1473095218763221.
- Sweet E (2015) Latina kitchen table planning saving communities: intersectionality and insurgencies in an anti-immigrant city. *Local Environment* 20(6): 728–743.
- Laskey AB and Nicholls W (2019) Jumping Off the Ladder: Participation and Insurgency in Detroit's Urban Planning. *Journal of the American Planning Association* 85(3): 348–362.
- Mirafteb F (2009) Insurgent Planning: Situating Radical Planning in the Global South. *Planning Theory* 8(1): 32–50. DOI: 10.1177/1473095208099297.

Key Words: Grassroots planning theory, Insurgent knowledge, Insurgent planning, Detroit, Public participation

WORKING WITH THE GREY AREAS: BUILDING AN ADVOCACY GRASSROOTS NETWORK IN DOUGLAS COUNTY, KS

Abstract ID: 1456

Abstract within Pre-Organized Session 85

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Should planners use planning processes to catalyze and/or enhance grassroots networks so they can become anchors in community decision making, especially when it comes to promoting equity? If yes, how can they do so? This paper aims to help answer these questions by 1) engaging with ongoing theoretical debates about planner roles, administrative discretion, and public engagement while also 2) providing empirical evidence from a regionally groundbreaking local climate adaptation planning process.

Existing public engagement scholarship helps construct our conceptual framework. Lessons from collaborative planning indicate that strong local champions are an important component of effective collaborations (Innes and Booher 2010). Studies within hazards and climate scholarship show that local planning capacity, commitment among decision-makers, and broader community capacity rooted in wealth and education can result in stronger planning efforts (Woodruff 2018). Meanwhile, scholarly debates over the use of administrative discretion among street-level bureaucrats (Maynard-Moody and Musheno 2000) overlaps in many ways with debates about different roles for planners (e.g., technician, advocate, community organizer). Increased attention to the role of emotions, relationship, identity – and their relationships to the use and exercise of power – raise novel and pressing questions on the importance of so-called soft skills in public engagement (Lyles and White 2019). Our core research questions explore if and how planners foster stronger grassroots networks and with what effect?

Climate planning spaces are natural and appropriate settings for exploring innovative and collaborative public engagement practices that engage grassroots groups. Arguably the poster child for “wicked problems” climate change poses significant risks to all of us and yet also threatens to impact the most vulnerable among us, often along the same land use lines that were established by institutional practices such as red lining and urban renewal. In many states and localities climate planning now takes place in a super-charged political environment where violent resistance to relatively benign interventions, like wearing masks to prevent disease spread in a pandemic, do not portend well for effective climate interventions.

Our research arises from an ongoing longitudinal study that has unfolded concurrently with a local climate adaptation planning process in a midwestern city. Our deep case study design includes conventional data sources like participant observation (hundreds of hours of multiple years), document review (plans, news, etc.), online surveys (led by the local government), interviews (conducted by local community coordinators), and “practice-focused oral histories” (Forrester, 2006) from local officials and grassroots organizers about their experience as part of a collaborative public engagement process. Our research approach also includes active participation in the design and implementation of the planning process by the authors. As a result, we analyze and integrate qualitative and quantitative data to help shed light into one the gray areas of planning practice. We also describe and reflect on the myriad adjustments made in the face of the COVID-19 disruption, local elections, and staff shakeups, among other real-world, messy constraints that many planners face when seeking to foster deep long-term collaborative engagement.

Our analysis provides broadly applicable theoretical insights, while also sharing innovative practices of tremendous relevance to planners and policy makers. Our findings indicate that long-term relationship building, entrepreneurial leadership, and empowered administrative discretion can help take formal public engagement from a mere box to be checked, to the driving force and focus of a planning process. They also highlight the importance of keeping resources in the community, fostering relationships through storytelling and conversation, and managing up within local governments.

Citations

- Forester, John. "Making participation work when interests conflict: Moving from facilitating dialogue and moderating debate to mediating negotiations." *Journal of the American Planning Association* 72, no. 4 (2006): 447-456.
- Innes, Judith E., and David E. Booher. *Planning with complexity: An introduction to collaborative rationality for public policy*. Routledge, 2010.
- Lyles, Ward, and Stacey Swearingen White. "Who Cares? Arnstein's Ladder, the Emotional Paradox of Public Engagement, and (Re) imagining Planning as Caring." *Journal of the American Planning Association* 85, no. 3 (2019): 1-14.
- Maynard-Moody, Steven, and Michael Musheno. "State Agent or Citizen Agent: Two Narratives of Discretion." *Journal of Public Administration Research and Theory* 10, no. 2 (2000): 329-358
- Woodruff, Sierra C. "City membership in climate change adaptation networks" *Environmental Science & Policy* 84, no. 6 (2018): 60-68.

Key Words: public engagement, advocacy, collaborative planning, grassroots organizing, climate planning

COUNTER-PROFESSIONAL HISTORIES AND COMMUNITY ACTION IN THE UK

Abstract ID: 1457

Abstract within Pre-Organized Session 85

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Critical scholarship has long problematised the manifold ways repressive power relations are reproduced under the cover of calls for public participation in planning (e.g. Huxley, 2013). Disenchanted with promises of inclusive governance, much recent planning theory has followed John Friedmann's injunction to explore "the great counter-tradition to state centric planning that ...emerged from within civil society" (Friedmann, 2011, 60). The turn towards civil society as a locus of progressive agency in planning theory, whilst not uncontested, has tended to decentre the role of both professional expertise and the state in favour of 'citizen planners' whose insurgent practices creatively challenge hegemonic social relations (Mirafteb, 2009; Huq, 2021). Sandercock's (1998) call for the development of 'counter-histories' to uncover the myriad insurgencies through which people have collectively struggled for the futures of their communities remains central to these debates.

This paper seeks to contribute to the building of critical counter-histories of public participation in planning by reconsidering the role in insurgent practices of those Robert Goodman (1972) labelled 'counter-professionals'. Partly inspired by ideas of advocacy planning emanating from the United States, from the late 1960s onwards a generation of students, activists, planners and architects became heavily involved in the community action movement in the United Kingdom. By lending their time, effort and support to community-based movements these 'counter-professionals' sought to build a counter-tradition, challenging the paternalism of the post-war state, developing new models of radical planning practice and laying the foundations for a new and more democratic society beyond the limits of then newly introduced requirements for public participation.

Although this period arguably reshaped the political imagination of planning in the UK, the historical record of the movement remains patchy and has tended to focus on relatively few high-profile episodes and individuals. The energies the community action moment generated were often intense and episodic, their legacies were not always fully recorded and hopes for social transformation were largely defeated in struggles against the rise of neoliberalism in the 1980s. The paper addresses these gaps by drawing on a series of around thirty oral history interviews with key figures involved in these initiatives, along with analysis of the magazine *Community Action* that was published from 1972-1990.

For many of those involved their experiences proved formative, whether leading to disillusion with the planning project and its prospects for effecting real political change, or to long careers spent 'working the spaces of power' in and against various state projects as horizons of possibility shifted over time (Newman, 2012). Although the archive we have constructed is inevitably partial and parochial, tracking the values, tactics, lived experiences and subsequent careers of our interviewees generates rich insight into wider struggles for a more radically participatory planning. Drawing on this, the paper reconsiders debates about counter-professional practices as they have figured in successive understandings of advocacy, radical and insurgent planning. We conclude by reflecting on the seemingly constrained conditions of possibility for counter-professional practice in the UK today and the lessons that might be drawn from the community action moment for contemporary attempts to construct a counter-hegemonic planning project.

Citations

- Friedmann, J. (2011) *Insurgencies: Essays in Planning Theory*, Routledge, Abingdon.

- Goodman, 1972 *After the Planners*, London, Penguin Books, Harmondsworth
- Huq, E. (2020) Seeing the insurgent in transformative planning practices, *Planning Theory*, 19 (4), 371-391
- Newman, J (2012) *Working the Spaces of Power*, London, Bloomsbury
- Sandercock, L. (1998) *Towards Cosmopolis*, Chichester, Wiley

Key Words: Community Action, Counter-histories, Radical planning, Public participation

POST-RATIONAL PLANNING ENGAGEMENT-OPPORTUNITIES FOR RENEWING PRACTICE

Abstract ID: 1458

Abstract within Pre-Organized Session 85

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Public engagement should be about supporting broader public goals, including strengthening democracy and fostering social justice. Yet for planners working in public sector agencies, engagement goals can often be obscured by pragmatic agency needs, which can take precedence. Of particular concern is when neighborhood planning exercises are configured to promote equal but not equitable input (Fainstein, 2010; Fainstein and Lubinsky, 2020; see also Quick & Feldman, 2011). Activists as well have experienced problems with engagement, particularly if past dialogue processes have been used to manipulate them (see Ganesh & Zoller, 2012). In this context, there is growing recognition that a focus on dialogue alone may not suffice to foster good and socially just outcomes through community planning (Fainstein).

This presentation discusses the value of renewing public engagement practice through a post-rational outlook focused on practical competencies and sensibilities. A post-rational renewal builds on existing legal recognition, in such jurisdictions as Washington State and California, that good planning practice requires additional public engagement beyond public hearings.

Post-rational engagement acknowledges the role of rising inequality along with time and lifestyle pressures which pose yet further obstacles to robust and equitable engagement processes. This includes recognizing populism and polarization as ways of thinking and protesting –responses which require more nuanced reflection and counter-response from those conducting engagement. On a related note, post-rational engagement entails becoming more comfortable with the emotional side of engagement (Lyles and White, 2019). Furthermore, it recognizes what new understandings from other disciplines including communication, adult education, psychology, and cognitive science might have to offer. For example, adult education provides a helpful set of constructs for presenting information used in engagement processes, while communications studies help us more effectively unpack how social media and legacy media both shape the social reality(ies) in which engagement occurs.

The presentation responds to this evolving interdisciplinary literature, and also gives an overview of the author's emerging empirical research in this area. This research base provides a platform for better targeting refinements to community engagement related to land use planning processes. It reflects a structured approach for gathering new evidence, including evidence which considers both participants' experiences of, and outcomes from, engagement processes structured by public sector agencies, including local, state, and provincial levels of government. The proposed new approach recognizes a need for mixed methods approaches, which can shed light on both processes and outcomes together. The presentation illustrates this approach with a comparative document analysis case study, to be drawn from two communities in British Columbia, both outside the Metro Vancouver region. It then examines what a post-rational lens can tell us (and alternately what it omits) about where engagement methods need to go next. The presentation concludes with recommendations for future research in this area.

Citations

- Fainstein, S. (2010). *The Just City*. New York: Cornell University Press.
- Fainstein, S. & A. Lubinsky. (2020). The Relationship between citizen participation and the just city. In M. Laura & C. Slotterback (eds). *Learning from Arnstein's Ladder: From Citizen Participation to Public Engagement* (Chapter 8). New York: Routledge.
- Ganesh, S. & Zoller, H. (2012). Dialogue, activism, and democratic social change. *Communication Theory*. 22: 66-91.
- Lyles, W. & White, S. (2019). Who cares? *Journal of the American Planning Association*. 85(3), 287-300.
- Quick, K. & Feldman, M. (2011). Distinguishing participation and inclusion. *Journal of Planning Education and Research*. 31(3): 272-290.

Key Words: community engagement, public engagement, post-rational planning, planning practice, social justice

PERFORMING PUBLIC PARTICIPATION - SESSION 1: EXPLORING THE ONGOING CRISIS IN PARTICIPATORY PLANNING

Pre-Organized Session 90 - Summary
Session Includes 1478, 1479, 1481, 1482

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Has participatory planning reached a tipping point that borders on a full-blown theoretical and practical crisis? Despite the fact that planning students train to design and implement public engagement opportunities, the efficacy of the tools of participation are questionable and Arnstien's promise of citizen empowerment remains unfulfilled. The push to frame participatory planning as a set of standardized skills may reinforce rather than challenge technocratic plan-making. Participatory planning is often an entrenched bureaucratic process and box-ticking exercise that does not represent a genuine opportunity for residents to sway public decisions. It may even reproduce racial and socio-economic inequities. COVID-19 heightens threats to engagement, making this an opportune time to ask: is participatory planning working, or is it performative? This panel is part of a series titled: Performing Public Participation: Reinvigorating a Critical Research Agenda for Urban Planning and Public Policy. These sessions take-stock of changes to the theory and practice of public participation and establish a contemporary agenda for research and practice.

Objectives:

- Describe the inextricable link between planning and participation
- Explain how participatory planning is at a point of crisis
- Evaluate participatory planning as it is currently practiced and in light of the ways it is and is not living up to its potential

THE INTERNATIONAL ASSOCIATION FOR PUBLIC PARTICIPATION AND THE PLANNING PRACTITIONER: NEW CONFLICTS IN PARTICIPATORY PLANNING

Abstract ID: 1478

Abstract within Pre-Organized Session 90

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Across its evolution as a practice and profession, planning has remained in various states of tension with ideas of public participation. The trajectory of planning, from the period of modernism onwards, has involved the recognition of participation as a core part of planning (Lane 2005). Some would even go so far as to suggest that participation is not simply a part of planning; it is planning (Frediani & Cociña 2019). Yet, the design and facilitation of public participation processes is increasingly done by non-planners, with specially trained community engagement practitioners stepping into this role (Bherer, Gauthier & Simard 2017). This shift in responsibilities needs to be set within the context of new complexities and dynamics that are emerging out of a simultaneous expansion of public participation in some contexts and processes, and its narrowing through formalisation in others. As we have argued elsewhere, the formalization of public participation, through the setting of various standards and institutional requirements, is part of broader efforts to legitimize the practice. In this paper, we consider the extent to which this quest for legitimacy extends to individual practitioners and raises questions about the tensions that specialized training and specialized practitioners pose to transformative planning practice.

We report results from an ongoing research project that explores the intersections between the International Association of Public Participation (IAP2) and professional planning practice in Canada and Australia. IAP2 has become one of the most recognizable providers of specialized training and has created new certification schemes for public participation professionals. We trace this evolution and use exploratory interviews with professional planners to highlight how the profession is responding to the emergence of these new forms of expertise and certification schemes. Our interviews with both IAP2-involved planning practitioners and planners who are experienced community engagement practitioners but who have not sought IAP2 training reveal several points of tension, including the possibility of a bifurcation between or a consolidation of planning and public participation professionals. We use these findings to ask critical questions about the degree to which IAP2 training courses and certification schemes support or constrain the further evolution of participatory planning theory and practice.

Citations

- Bherer, L, Gauthier, M. and Simard, L. (Eds) (2017) *The Professionalization of Public Participation*. New York and Abingdon: Routledge.
- Frediani, A. A., & Cociña, C. (2019). 'Participation as planning': Strategies from the south to challenge the limits of planning. *Built Environment*, 45(2), 143-161.
- Lane, M. B. (2005). Public participation in planning: an intellectual history. *Australian geographer*, 36(3), 283-299.

Key Words: public participation, training, certification, professionals

SHAPING ENGAGEMENT WITH EVIDENCE- A NEW APPROACH TO ASSESSING WHAT DOES AND DOES NOT WORK

Abstract ID: 1479

Abstract within Pre-Organized Session 90

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For several North American communities facing housing affordability issues, there have been corresponding concerns about the role of problematic engagement processes in creating or compounding those issues. For example, in some US states, perceptions about engagement and its impact on affordability have led to proposals for automatically enabling moderate density increases “by right”, without engagement. These proposals include sweeping state-wide or municipal-wide provisions to allow accessory dwelling units (secondary suites); duplexes; triplexes; four-plexes; and other multi-family units without requiring public input on such projects (see Kuhlmann, 2021). Several Canadian jurisdictions are considering similar proposals (Canada-BC Expert Panel, 2021). In all cases, however, there may be a missed opportunity for deeper consideration of how to improve the caliber of engagement, rather than discarding it altogether.

Within the planning scholarship, discussions of the link between land use decisions, public engagement and democracy have long been influenced by Habermasian-informed principles of deliberative democracy, as interpreted by communicative and collaborative planning scholars like John Forester, Patsy Healey, and Judith Innes. These interpretations, and the others they inspired, carried an implicit presumption that effective dialogue was crucial for socially just, equitable outcomes. Yet, even highly attentive and thorough engagement structures appear today to remain insufficient for addressing equity gaps that remain unresolved during, or perhaps exacerbated through, land use engagement processes (Fainstein and Lubinsky, 2020). It is now time to unpack where, when and how such dialogues can impede socially just outcomes, in order to work towards remedying these problems. Our goal is to avoid having engagement relegated as a “frill”, instead of being treated as a crucial component of the land use decision process.

We are researchers with interests in engagement and its implications for good planning, democracy, and socially just outcomes across jurisdictions. Understanding these relationships is increasingly crucial, in light of growing global perceptions that current systems are failing average people (Edelman, 2019:15). Our proposed project will explore the need and potential for new engagement processes in ways that better validate community concerns, while acknowledging more fundamental questions about whether or not democratic systems are working for people. As part of our process, we acknowledge a need for approaches which are sensitive to local contexts, and which seek to avoid globalizing recommendations --even as they address problems which are beginning to seem increasingly universal. In this paper, we will consider the more recent literature on engagement concerns together with parameters for a new process, in the hopes of eventually generating a stronger evidence base on current barriers to socially just outcomes through engagement processes.

In exploring these new parameters, we will use a mixed-methods process gathering evidence from specific jurisdictions, beginning with British Columbia (BC). Our research will include a scientific public opinion poll, aimed at better understanding the barriers to participating in land use engagement processes (including, but not limited to public hearings). Such an approach is seldom used in planning research; and yet the practice of including independent public opinion data to inform government agency policies is quite common (see Birch and Petry, 2012). Our process will also entail interview and document analysis research in five distinct BC communities, in order to triangulate results for more relevant BC practice recommendations. Once our work in BC is complete, we hope to launch a subsequent phase to consider practices and evidence from other North American jurisdictions, using a similar (but not identical) process applied in other local contexts. Presenting this research at ACSP will be a key part of the process, helping us to obtain feedback, and to make comparisons with others who share these concerns.

Citations

- Birch, L. & F. Petry. (2012). The use of public opinion research by government. Insights from American and Canadian research. Pp. 342- 353 in Lees-Marchment, J. (ed). Routledge Handbook of Political Marketing. Oxon and New York: Routledge.
- Canada- BC Expert Panel on the Future of Housing Supply and Affordability. (2021). Opening doors: unlocking housing supply for affordability. Final report. Accessed online at: https://engage.gov.bc.ca/app/uploads/sites/121/2021/06/Opening-Doors_BC-Expert-Panel_Final-Report_Jun16.pdf
- Edelman. (2019). 2019 Edelman Trust Barometer. Web report, accessed at: www.edelman.com/research/2019-edelman-trust-barom
- Fainstein, S. & A. Lubinsky. (2020). The Relationship between citizen participation and the just city. In M. Laura & C. Slotterback (eds). Learning from Arnstein's Ladder: From Citizen Participation to Public Engagement (Chapter 8). New York: Routledge.
- Kuhlmann, D. (2021). Upzoning and Single-Family Housing Prices. Journal of the American Planning Association. 87:3, 383-395, DOI: 10.1080/01944363.2020.1852101

Key Words: public engagement reform, evidence in planning

THE GOOD PROCESS AND THE BAD PLAN

Abstract ID: 1481

Abstract within Pre-Organized Session 90

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How can a good process produce a bad plan? The City of Plattsburgh, New York's efforts to develop a plan to revitalize its downtown might provide some answers to this question. In the fall of 2016 and spring of 2017, Plattsburgh developed a plan to revitalize its central business district. The process was funded through the State of New York's Downtown Revitalization Initiative, and the goal was to develop a strategy for allocating nearly \$10 million for projects to catalyze private-sector investment in the City's downtown core. The controversy around the plan has grown over the last five years, and community members remain unsatisfied with the City's approach to prioritizing the various projects and allocating the State's funds.

This research uses Plattsburgh as an exploratory case to emphasize the connection between participatory processes that are well-designed (i.e., good processes) and resulting plans that are poorly suited to a community's needs and values (i.e., bad plans). We rely on empirical data gathered during the process, including interviews with key participants, audio/video records of public planning meetings, and public documents to tell this story. Through analysis of this evidence, we explore the ways in which this controversy is rooted in both a well-designed process and a plan that sought consensus through compromise. We found that a highly active and thoughtful citizenry was able to see through the ways in which local political elites manipulated the process to achieve predetermined outcomes. From this case, we draw important theoretical and practical insights for planning scholars and practitioners.

The realization that planners are more than "apolitical problem solvers," coupled with decades of empirical observations that planners do more than apply scientific procedures to urban and social problems, ushered in a new era of planning practice. Over the last several decades, planners have been taught the importance of community organizing and outreach, they learned to design planning processes that included and depended upon public participation, and they cultured facilitation and dispute resolution skills. To wit, planners began to host public meetings that went above and beyond the formalized rituals of public hearings. Now, under the best circumstances, members of the public engage in hands-on planning activities that encourage their active participation in the plan-making process. The innovations to practical methods are indeed many and profound. Nevertheless, recent research demonstrates the ways in which even these highly innovative participatory planning processes have failed to live up to their own hype and expectations. Planning processes are critiqued on the grounds that they are highly polished performances of democratic action that do not allow the public to make meaningful contributions to the plan itself. The case of Plattsburgh's DRI is another critical piece of evidence supporting these arguments, and it suggests that participatory planning theories and practices deserve greater attention.

Citations

- Bryson, John M., Kathryn S. Quick, Carissa Schively Slotterback, and Barbara C. Crosby. 2012. "Designing Public Participation Processes." *Public Administration Review* 73 (1): 23–34. <https://doi.org/10.1111/j.1540-6210.2012.02678.x>.
- Forester, John. 1999. *The Deliberative Practitioner: Encouraging Participatory Planning Processes*. Cambridge, MA: MIT Press.

- Hoch, C. 1994. *What Planners Do: Power, Politics, and Persuasion*. Chicago, IL: Planners Press: American Planning Association.
- Legacy, Crystal. 2017. "Is There a Crisis of Participatory Planning?" *Planning Theory* 16 (4): 425–42. <https://doi.org/10.1177/1473095216667433>.
- Milz, Dan. 2022. "The Hidden Benefits of Facilitated Dialogue." *Journal of Planning Education and Research* 42 (1): 19–35. <https://doi.org/10.1177/0739456X18798903>.

Key Words: Participatory Planning, Facilitation, Process Design, Community Engagement, Planning Theory

BREAKING THE FOURTH WALL ON PLANNING BOARD MEETINGS: GOFFMAN'S DRAMATURGICAL METAPHOR AND PLANNING PRACTICE

Abstract ID: 1482

Abstract within Pre-Organized Session 90

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Erving Goffman's dramaturgical metaphor (1959) views everyday social interactions through the lens of theatrical performance. People are actors. The social-ecological landscape is a stage. Societal norms and values provide direction and semi-script the dialogue. Goffman's theory is useful for considering how people present themselves to others. For example, the roles people play shift with context, and our abilities to adapt the characters we play and the ways we interpret others are crucial for managing our expectations in social relationships. The dramaturgical metaphor also facilitates our progress through interactive processes such as meeting a new person, making a bank transaction or enjoying a cup of coffee with a friend. By understanding the plotlines in which we are embedded we move through these stories successfully, accomplishing and constructing social life as we go. The metaphor also helps us avoid conflict, adapt when things go awry and build and maintain integrity in social institutions (Kivisto and Pittman, 2013).

The research described in this presentation views municipal planning board meetings as performative, theatrical events. They include staging, scripts, and props, alongside a healthy dose of improv. Board members sit at the dias, chairpersons bang the gavel, Robert's Rules of Order structures the dialogue, and members of the public and those with applications before the board sit in a gallery and speak from the podium. These common features of staging, script, direction and roles provide organization for conducting public business, reinforce power and authority, create shared meaning and send signals about community values (Kertzer, 1988; McComas, Besely and Black, 2009). Similar to the ways that playwrights, actors and audience members co-construct meaning from a live performance in real time, planning board meetings co-construct democracy, community and civic space as they occur. And, just as COVID-19 transformed live performance from Saturday Night Live to community theater, the pandemic transformed planning board meetings. How planning board meetings were transformed by the shift to online video conferencing, and what this transition means for practitioners, is not yet clear. This study uses Goffman's dramaturgical metaphor to explore how five communities recognized for innovation and leadership in urban planning adapted their planning processes over the course of the pandemic.

Strong Towns is a nongovernment organization that "supports people across the United States and Canada who are advocating for a radically new way of thinking about the way we build our world." The organization awards an annual "Strongest Town" award to communities that are actively working to build resilience through urban design and financial planning. This research examines the experience of adapting to virtual planning meetings through case studies of five recent "Strongest Town" award recipients. Our case studies are built upon video records of planning board meetings before and during the pandemic, and examined through the dramaturgical lens. Put simply, we explore the ways that planning processes in five communities changed throughout the pandemic by paying attention to changes in the ways that Robert's Rules of Order are carried out; planning props such as maps and documents are used; and the move from physical to virtual space alters interactions and relationships. We seek to understand the outcomes of these changes on planning decisions, civic space, community relationships and democracy.

Goffman's dramaturgical lens provides a new angle for exploring the transformations that are occurring in planning practice as a consequence of the pandemic. Art often imitates life, and viewing planning board meetings as performance peels back the curtain on the values and priorities of planning practitioners and community stakeholders, providing an opportunity for critical reflection.

Citations

- Goffman, E. 1959. *The Presentation of Self in Everyday Life*. Garden City, New York. Doubleday.
- Kertzer, D. I. 1988. *Ritual, Politics and Power*. Yale University Press.

- Kivisto, P., & Pittman, D. 2013. Goffman's dramaturgical sociology: personal sales and service in a commodified world. In P. Kivisto Illuminating social life: Classical and contemporary theory revisited (pp. 297-318). SAGE Publications, Inc.
- McComas, K., Besley, J.C. and Black, L.W. (2010). The Rituals of Public Meetings. Public Administration Review, 70: 122-130.

Key Words: Online Participatory Planning, Community Engagement, Planning Board, Process, COVID-19 Pandemic

PERFORMING PUBLIC PARTICIPATION SESSION #4: EXPLORING THE POTENTIAL OF PLURIVERSAL PLANNERS TO ADVANCE JUST AND REGENERATIVE FUTURES

Pre-Organized Session 95 - Summary

Session Includes 1696, 1697, 1698, 1699, 1700

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Our field teaches that planners have an ethical responsibility to “listen to the community,” and solve “community problems” through their participation. Yet professional development generally fails to prepare planners with tools, embodied practices, stories from progressive social movements, and theories of pluriversal planning that would build their capacity to navigate complex power dynamics and address wicked problems. Papers in this session explore paradigm shifts, stories from the field, frameworks, engagement practices, and technologies available to support planners in cultivating the relational, situated awareness and collective power required for public participation to catalyze systems change for just and regenerative development. This panel is part of a series of pre-organized sessions under the heading, Performing Public Participation: Reinvigorating a Critical Research Agenda for Urban Planning and Public Policy. These sessions aim to ‘take-stock’ of significant changes to the theory and practice of public participations and to establish an agenda for research and practice for the middle of the twenty-first century.

Objectives:

- By the end of this session, participants will be able to apply theories, frameworks, methodologies, and practices to their individual scholarship and praxis as agents of systemic change and personal, social, and ecological resilience

RELATIONAL ENGAGEMENTS AND EMBODIMENTS: EXPLORING PLURIVERSALITIES OF COMMUNITY-BASED SCHOLARSHIP IN PLANNING

Abstract ID: 1696

Abstract within Pre-Organized Session 95

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Pluriversal planning scholarship (PPS) refers to the theoretical and community-based contributions of an evolving stream of critical planning research that embraces multiplicity, coexistence, and situated learning (Vasudevan and Novoa, 2022). Drawing from a literature review conducted between 2019-2020 that assessed 300 articles in top planning journals, we suggested that this group of scholars move beyond traditional conceptions of citizen participation and community engagement that have maintained, and at times reinforced, oppressive planning systems, to re-examine their own ways of being and understanding (ontologies) and ways of knowing (epistemologies) vis a vis community member they work with. To do so, these scholars embrace messy entanglements that develop through complex positionalities, acknowledge the history(ies) of the place(s) they are working in, and use innovative and embodied methodologies that decenter western modes of thinking and being, instead listening and responding to community members to inform the theory and process.

Whereas PPS offers a theoretical framework that reflects the plurality of ways in which critical planning scholarship can reimagine the role and imperative for the planner to learn from and collaborate with engaged urban residents, we found that specific tools and tactics used for engagement were less discussed in the top planning journals. Therefore, over the past year we have reached out to early career and more established scholars to conduct surveys (n=40) and semi-structured interviews (n=20) to examine the following: What is the process of community engagement for pluriversal planning scholars, from initial engagement, to negotiating a realistic project, to building and maintaining relationships? How do these scholars engage in critical reflexivity and positionality while ‘in the field’ and within the university setting? What types of indirect and direct contributions do pluriversal planning scholars offer the communities they work with?

In this paper, we offer three findings for community-based research and praxis. First, the concept of ‘relational

entanglements' usefully describes the ways in which the researcher is constantly engaged in a process of critical reflexivity that acknowledges the multiple and often shifting power dynamics between themselves, community-members, and other state/non-state agents. In other words, through a process of critical and grounded (in time and place) self-reflection, the researcher is able to actively react to the shifting nature of power dynamics between and amongst participants in the service of being responsive to community needs. Second, the iterative work, as well as the direct and indirect contributions that engaged scholars make to the communities they work with not only establishes and builds trust over time, but enables the co-production of knowledge such that theory building itself becomes iterative and responsive. We see a particular potential in this aspect of community engaged work, as it not only reimagines who theorizes but is actually more immediately responsive to and reflective of present-day priorities, social movements, and organizing. Third, from a pedagogy perspective, community engaged scholars are not only providing a space for students to become reflective and active participants in the learning process, but actually become co-producers of knowledge themselves, offering one reimagination of what participatory planning may entail. The constant negotiation of relationships between professor, students, and community members in and of itself teaches students important lessons about the opportunities and limitations of planning practice.

Citations

- Vasudevan R and Novoa M (2022) Pluriversal planning scholarship: Embracing multiplicity and situated knowledges in community-based approaches. *Planning Theory*. 2022;21(1):77-100.
- Escobar A (2018) *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*. Durham: Duke University Press.
- Sletto, B. (2010). Educating reflective practitioners: Learning to embrace the unexpected through service learning. *Journal of Planning Education and Research*, 29(4), 403-415.
- Libby Porter, Leonie Sandercock, Karen Umemoto, Karen Umemoto, Lisa K. Bates, Marisa A. Zapata, Michelle C. Kondo, Andrew Zitcer, Robert W. Lake, Annalise Fonza, Bjorn Sletto, Aftab Erfan & Leonie Sandercock (2012) What's Love Got To Do With It? Illuminations on Loving Attachment in Planning, *Planning Theory & Practice*, 13:4, 593-627.

Key Words: Pluriversal planning, community engagement, activist scholarship, participation, reflexivity

TOWARD THRIVING CITIES: EXPLORING SYNTHESIS AND THE ROLE OF THE PLANNER

Abstract ID: 1697

Abstract within Pre-Organized Session 95

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One of the central questions of contemporary planning scholarship and pedagogy remains, “how can we enable planners to more securely struggle with the messiness of societal problems?” (Baum, 1996: 134). This is particularly important in the context of participatory planning, where the quality of the outcomes depends so heavily on the planners’ own social, emotional, and relational capacities. There are important, emerging tools and practices planning pedagogy can impart to planning students, equipping them to build and hone these capacities (Lyles and Swearingen White, 2019). Yet, there is also an important perspective from planning theory that suggests that students’ capabilities are derived also from the kinds of theories we share and teach (which is intimately related to the need for and notion of pluriversal planning presented in this pre-organized session). Campbell (2012) argues that we must engage “synthesis” or integration, as well as normative questions about what ought to be done in the face of all this complexity. Friedmann (2000) similarly called for taking a normative stance on the “good city” – rather than continuously producing “rationale” for policy-makers – in his defense of utopian thinking.

This theory paper takes up the scholarship of these theorists and others, arguing that as a discipline, we have an ethical imperative to re-engage synthesis as a central role for and capability of planners (where synthesis is understood both as a skill for integrating ideas across disciplinary boundaries, but also in terms of an integrated mind, body, and heart, after Patrick Geddes definition of the term; see Walsh, 2021). The paper leverages theory and empirical work from discourses both within and beyond planning to demonstrate how planning is already being pushed towards more integrative approaches from many different scholarly fields, and has been from its earliest days as a field. And finally, this paper offers a notion of cities for human thriving as an example of a synthetic approach grounded in the public health, psychology, and planning literatures. By re-engaging synthesis and normative theory-building, the field can help provide future planners with important paradigms which in turn will support them in their participatory endeavors.

Citations

- Baum, H. S. (1996). Why the Rational Paradigm Persists: Tales from the Field. *Journal of Planning Education and Research*, 15(2), 127–135. <https://doi.org/10.1177/0739456X9601500205>
- Campbell, H. (2012). Planning to Change the World: Between Knowledge and Action Lies Synthesis. *Journal of Planning Education and Research*, 32(2), 135–146. <https://doi.org/10.1177/0739456X11436347>
- Friedmann, J. (2000). The Good City: In Defense of Utopian Thinking. *International Journal of Urban and Regional Research*, 24(2), 460–472. <https://doi.org/10.1111/1468-2427.00258>
- Lyles, W., & Swearingen White, S. (2019). Who Cares?: Arnstein's Ladder, the Emotional Paradox of Public Engagement, and (Re)imagining Planning as Caring. *Journal of the American Planning Association*, 85(3), 287–300. <https://doi.org/10.1080/01944363.2019.1612268>
- Walsh, Elizabeth (2021). "Beyond the 'Planner's Triangle' and 'Ladder of Citizen Participation': Navigating with a Compass of Collective Power and Wisdom for Equitable, Regenerative Development," Paper in pre-organized session, "Resilience is a Net We Weave: Regenerative Praxis for Environmental & Climate Justice" at Association of Collegiate Schools of Planning (ACSP) Conference, Virtual, October 7, 2021.

Key Words: planning theory, healthy places, embodied praxis, thriving

VALVERDE MOVEMENT PROJECT: AN INTERSECTIONAL, COMMUNITY-ENGAGED, MULTI-SECTOR APPROACH TO REPARATIVE AND REGENERATIVE PLANNING PRAXIS

Abstract ID: 1698

Abstract within Pre-Organized Session 95

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In response to the complex social and ecological crises posed by climate change, resilience planning has emerged with multi-sector strategies for mitigation and adaptation. Resilience planning holds promise, yet it is in danger of falling prey to the same myopic professional culture that limited 1970s environmental planning. Climate justice leaders rightly observe that resilience planning must come from the intersectional leadership of communities on the frontlines of climate change who have time, and time again, demonstrated their resilience in the face of adverse social and ecological conditions (Walsh & Wilson, 2020).

Scholar-activists working with communities on the frontlines of intersectional struggles have increasingly been using critical cartographic methods such as counter-mapping and vulnerability mapping. While these cartographic tools are necessary to make oppression and vulnerability to displacement legible, they are insufficient to redress inequities or generate socio-ecological resilience. Since the inception of social vulnerability mapping thirty years ago, researchers have questioned whether the same institutions that created conditions of precarity for marginalized communities can be trusted to use social vulnerability maps to protect people they have made to be vulnerable. Moreover, social vulnerability mapping risks framing marginalized people solely as victims, while methodological constraints have failed to (1) center community knowledge and strengths enabling resilience, (2) identify intersectional oppressions and name them as such, and (3) advance community activism (Jacobs, 2019).

To address this outcome gap, this paper proposes that resilience planners and researchers expand their toolbox with methods based on a radical understanding of the cartographic gaze behind maps, and underlying assumptions about power. Instead of seeing like a State (Scott, 1999), we are called to sense like a sovereign body. Drawing upon Indigenous thought, sovereignty is embodied (Harjo, 2019). The idea of returning to our bodies, our embedded and emplaced lived experiences, and our differences as a source of power and wisdom is core to epistemologies produced at the center of intersectional struggles, though marginal in planning practice (Sandercock, 2004). While counter-mapping practices are essential in identifying drivers of precarity and naming intersectional oppression, sovereign approaches to knowledge production are essential in identifying drivers of vitality, recognizing mutually flourishing relationships, and cultivating resilience in the face of displacement pressures.

Drawing on literature from critical Indigenous studies, Black feminist theory, environmental justice, radical planning, embodied praxis, and regenerative development, we offer a novel conceptual framework for intersectional participatory planning that we call "regenerative mapping." Epistemologically, ontologically, and axiologically, this intersectional approach focuses on naming harm, centering joy, and building on collective strengths. Methodologically, it provides a set of tools and processes – asset mapping, story mapping, promise mapping, and kinship mapping – for planners to unite with counter-mapping.

To illustrate the practical application of these tools in applied radical resilience research, we offer a case study of the Valverde Movement Project (VMP). Supported by the National Science Foundation, VMP is a collaboration between neighborhood leaders, advocacy organizations, university researchers, and city and regional government leaders united in a quest to undo redlining by re-imagining infrastructure investments to advance equitable, community-rooted health and wealth, while simultaneously strengthening strategies to resist displacement threats, e.g. speculative development. In sharing the story of our collaborative work, we will discuss the underlying intersectional

approaches, cartographical methods, and institutional support that have contributed to trusting relationships and ongoing collaboration. We find that by centering community voices and shifting our cartographic gaze from “seeing like a State” to “sensing like a sovereign body,” our diverse team of neighborhood leaders, scholar practitioners, and city planners have been increasingly successful in cultivating relationships that co-produce the knowledge and power required to map our way to geographies of radical resilience.

Citations

- Harjo, L. (2019). *Spiral to the Stars: Mvskoke Tools of Futurity*. University of Arizona Press.
- Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, 18(1), 24–39. <https://doi.org/10.1177/1473095218763221>
- Sandercock, L. (2004). Towards a Planning Imagination for the 21st Century. *Journal of the American Planning Association*, 70(2), 133–141. <https://doi.org/10.1080/01944360408976368>
- Scott, J. C. (1999). *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (0 edition). Yale University Press.
- Walsh, E., & Wilson, B. B. (2020). Learning from Arnstein, Meadows, Boggs, and Lorde: Propositions on Building Collective Power for Climate Justice and Resilience. In M. Lauria & C. Slotterback (Eds.), *Learning from Arnstein's Ladder: From Citizen Participation to Public Engagement*. Routledge Press. <https://www.routledge.com/Learning-from-Arnsteins-Ladder-From-Citizen-Participation-to-Public-Engagement/Lauria-Slotterback/p/book/9780367258238>

Key Words: climate justice, radical resilience, reparative praxis, participatory mapping, intersectionality

SUPPORTING LIBERATORY FUTURES THROUGH COMMUNITY DATA PROJECTS

Abstract ID: 1699

Abstract within Pre-Organized Session 95

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Lefebvre's right-to-the-city recognizes that control of information is a form of power (Lefebvre, 1968). He argues that a right to information is a critical component of co-created space. In response, many governments and universities construct digital and open data platforms as a mode of data democratization. But a reliance solely on quantitative data fragments the city and its inhabitants, which supports technocratic planning practices and neglects what Lefebvre calls the "human factor." At the same time, Black Geographers demonstrate how quantitative data perpetuates a framework that views Black communities through a lens of deficiency rather than sites of resistance and beauty (McKittrick & Woods, 2007). The combination of fragmentation and a deficiency lens enables the destruction and erasure of communities of color while digital platforms function as a prop to support white supremacist narratives.

To counter this, planners building and relying on digital data platforms need a framework for fostering data democratization and re-imagining geographies. To demonstrate this framework, this paper utilizes a grounded theory approach that relates Lefebvre's concept of the right-to-information with Black Geographers' methodological approaches by using a coproduced community-university digital data project in Atlanta, GA, as a case study. The 8-year project followed participatory action research methods through each iteration of site development. It aimed to ensure all residents could access data so they had the tools to challenge persistent crises, including rapid gentrification. At the same time, the site sought to preserve and share stories as an emancipatory methodology that centralizes memory (Miraftab 2015) and creates "other ways of knowing" (Sandercock 1998). The findings demonstrate the power of digital tools to challenge power dynamics through data ownership and storytelling. We believe this paper is especially salient as planning schools build programs around data analytics in response to our age of Big Data. If sites rely only on positivist measures, they will produce digital data tools that continue to perpetuate white supremacist structures.

Citations

- Baack, S. (2015). Datafication and empowerment: How the open data movement re-articulates notions of democracy, participation, and journalism. *Big Data & Society*, 2(2).
- Shaw, J., & Graham, M. (2017). An Informational Right to the City? Code, Content, Control, and the Urbanization of Information. *Antipode*, 49(4), 907–927. <https://doi.org/10.1111/anti.12312>
- McKittrick, K., & Woods, C. A. (2007). *Black geographies and the politics of place*. Toronto, Ont: Between the Lines.
- Lefebvre H., 1968: *Le droit à la ville*. Anthopos, Paris.
- Sawicki, D. S., & Craig, W. J. (1996). The Democratization of Data: Bridging the Gap for Community Groups. *Journal of the American Planning Association*, 62(4), 512–523.

POLLUTION, PLASTICS, AND PLANNERS AS AGENTS OF RESISTANCE

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Abstract within Pre-Organized Session 95

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Since anxiety about garbage peaked in the 1980s, urban professionals have paid little attention to it. But this has shifted in recent years. Widely publicized changes in global recycling markets, a deluge of disposables associated with the coronavirus pandemic, and increasing evidence about plastic's pervasiveness—plastic particles and plasticizers have been recorded everywhere from the Arctic to breast milk—has reawakened interest in municipal waste management.

Increasingly, plastics are framed as “pollution” in public discourse. The concept of pollution, as Max Liboiron (2021) has argued, assumes sinks to which polluters have some sort of right. For plastic, those sinks are landfills; air; oceans; our very bodies. Within the U.S. regulatory system, most substances labeled pollutants are regulated through federal policy. Though some constituent chemicals of some plastics are regulated in this way, most plastic product are entirely unregulated at the federal level. City governments—fiscally responsible for the management of all of that plastic after it has been used and disposed—are stepping in.

As of 2021, over 500 U.S. cities had established some kind of plastic reduction regulation (Romer 2021). Some urban plans, like Los Angeles's 2019 Green New Deal, integrate Zero Waste with public health, GHG reduction, and environmental justice. More commonly in urban plans however, waste management is an afterthought if it is included at all. This is not terribly surprising given that many planners still understand municipal waste regulation as a distraction from more significant imperatives, like land use reform (see for example: https://twitter.com/jenny_schuetz/status/1470444280497905665?s=20&t=E5kT9loG8cfTd_WVZTvw4Q).

But, plastics are fossil fuels, and industry increasingly views plastic as the future of the fossil fuel economy (Brigham 2022). Reducing the production and consumption of plastic through municipal regulation is, therefore, essential climate action with key potential for greenhouse gas emissions reduction, climate justice, and ecosystem protection.

This paper is part of larger project tracking the history of municipal plastic regulation. The project will expose how corporate lobbying shaped urban environmental policy, ensuring endless potential for disposable plastics. By connecting the legacies of regulatory experiments from the 1970s with contemporary urban environmental agendas, the project aims to open the door for more effective integration of contemporary urban planning with climate justice through radical municipal waste management.

The paper I will present draws on archival research relating to New York City's ambitious, but ultimately unsuccessful, 1971 plastic tax. It will discuss the origin and intent of the 1971 law, how it related to broader planning priorities at the time, and describe how it failed. Finally, it will use that history to contextualize New York City's current environmental planning efforts. The paper will argue that far from being distractions, municipal efforts to regulate plastic represents one of the few areas of true environmental and economic reform happening at the local scale today. By actively including solid waste management – particularly plastics reduction – into environmental, planners have an opportunity to reshape urban consumption, promote radical resilience, and uplift climate justice.

Citations

- Brigham, Katie (2022). “How the Fossil Fuel Industry is Pushing Plastics on the World,” CNBC Climate, <https://www.cnbc.com/2022/01/29/how-the-fossil-fuel-industry-is-pushing-plastics-on-the-world-.html>.
- Liboiron, Max (2021). *Pollution is Colonialism*. (Durham: Duke University Press).
- Romer, Jennie (2021). “Roundup of Statewide Bag Laws and Preemption,” Surfrider Foundation Blog, <https://www.surfrider.org/coastal-blog/entry/round-up-of-statewide-bag-laws-and-preemption>

Key Words: plastic, planning history, climate justice, solid waste, radical resilience

FUNCTIONAL FLEXIBILITY OF URBAN SPACES IN RESPONSE TO DISRUPTION: BUILDING A CASE FOR NEW MODES OF ADAPTABLE REGULATION

Abstract ID: 1219

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Increases in disaster incidence, intensity, and variety – exacerbated by increasing urbanization and the effects of climate change – have highlighted the need for urban spaces and systems to adapt more readily to changing circumstances. While urban systems tend to be configured in ways that prioritize efficiency of function, the narrow focus of this status quo condition can create tradeoffs with regard to resiliency, which generally requires flexibility and adaptability (Elewa 2019). For example, we have observed the emergence of a variety of new spatial modes and functions in response to the COVID-19 pandemic: the increased use of the right-of-way for physically distanced but socially connected dining; group fitness classes conducted on rooftops and in public spaces; increased use of delivery and pick-up services for shopping; and both volunteered and mandated restrictions on spatial occupancy. These improvised examples demonstrate the need for greater flexibility in the use of urban space to respond to disruption as well as the potential benefits that can result from expanding the functional range of urban spaces in terms of supporting cities' social, economic, and public health goals.

Although municipal regulations have some built-in mechanisms that allow for varying degrees of flexibility and predictability (Talen 2012), the transaction costs associated with changing uses within these parameters tend to be expensive and time-consuming. Having the capacity to transition to an alternative functional state more quickly and smoothly could help to increase the adaptability of urban spaces to disruption. To address this need, we ask two primary questions: 1) Do the objectives of existing plans and policies address flexibility in functional use in the right of way, and if so, how? and 2) What are the spatial conditions related to functional flexibility within the right of way? To answer these questions, we develop a Seattle case study focused on food systems uses within the public right of way. The first question is addressed through a content analysis of existing regulatory documents examining four categories of use across spectra of stability/flexibility and realization/anticipation: 1) existing, stable uses regulated by municipal code; 2) temporary, planned uses supported by pilot programs; 3) temporary, unplanned uses that occur during disruptions, and 4) future uses as anticipated in visioning plans. The content analysis is supplemented by interviews with key stakeholders. To address the second question, we conduct a systematic analysis of spatial attributes of the right of way, including existing diversity of uses and presence of food system entities (e.g., farmers markets, restaurants, small-scale grocery stores). Adopting an ecological view of the right of way (Anderson 1978), we also consider the uses that interface with the public right of way, such as small businesses, balconies, and other threshold spaces. The result is a functional inventory of the right of way that documents current uses while providing a framework for the anticipation of future adaptations.

We find that enhancing the adaptive capacity of the right of way could potentially help to smooth response to disruption while also supporting longer-term planning initiatives with broader goals for resilience and sustainability, such as the development of walkable communities and the creation of “15-minute” cities. Specifically, we recognize pilot programs as potential “plan mutations” that have the potential to increase the diversity of use within the right of way with relatively low risk while also recognizing the need for the development of more broadly-scalable use scenarios focused specifically on responding to various kinds of disruption. Through our case study, we illustrate the potential spatial implications of developing such scenarios and provide preliminary recommendations for developing new modes of adaptable regulation for the purposes of responding to disruption.

Citations

- Anderson, S. (1978). Studies Toward an Ecological Model of the Urban Environment. In *On streets* (pp. 267-307). S. Anderson (Ed.). Cambridge, MA: MIT press.
- Elewa, A. K. A. (2019). Flexible public spaces through spatial urban interventions, towards resilient cities. *European Journal of Sustainable Development*, 8(4), 152-152.
- Talen, E. (2012). *Reform*. In *City rules: How regulations affect urban form*. Island Press.

Key Words: adaptability, temporary use, disaster, right of way, food systems

HUMAN RIGHTS AND CANADIAN CITIES IN PRE-AND POST-CHARTER ERAS

Abstract ID: 1254

Individual Paper Submission

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Human rights are inalienable rights that we each possess by virtue of being human, based on our inherent dignity and equal worth as human beings. These are considered moral rights of the highest order. The Charter of Rights and Freedoms (henceforth, the Charter) guarantees human rights to Canadians. Increasingly, planning issues are being scrutinized from the human rights lens.

Yet, we do not have a systematic understanding of the progression of changes on the human rights front at the city level in Canada. Neither do we know the implications these changes have had on cities and planning at the local level (Agrawal, 2014, 2020). This study conducts a detailed scan of case law and legal jurisprudence going as far back as the conception of the Canadian Confederation in 1867 to fulfill this knowledge gap. The research also involved a systematic review of the existing literature, as well as legislative and policy documents. The analysis is divided into three key time periods in Canadian history of rights: 1. 1867 till the end of the Second World War; 2. 1946 till the creation of the Charter in 1982; and 3. Post-charter 1982- present.

The findings suggest that before the Charter came into being, at the municipal level, discrimination manifested mainly in the form of (a) race-based restrictive covenants; (b) limited or no rights for women or minorities in municipal matters; (c) infringements on freedoms of speech, religion, assembly, or political association; and (d) the imposition of additional municipal taxes and restrictive use of public facilities on people of colour. Some of these issues were challenged in court but with little or no changes in federal or provincial legislation or practice on the ground. Eventually, provincial legislation and statutes outlawed most discriminatory practices. Thereafter, the emergence of the Charter was largely responsible for eliminating many (but not all) longstanding discriminatory practices.

From 1867 until the 1950s, judicial review of municipal bylaws was primarily based on the founding principles of the Canadian Confederation: namely, the supremacy of Parliament and federalism. Court decisions strictly followed principles of federalism as set out in the Constitution, and municipalities played virtually no role in political or legislative affairs for approximately a century following Confederation. The judiciary saw its role as an arbiter of the division of powers when an issue arose. Generally, the courts were limited to deciding “whether the ‘correct’ level of government had acted,” in accordance with the categories of legislative powers set out in Sections 91 and 92 of the British North American Act, and “not whether any level of government could act” (Monahan, Shaw, & Ryan, 2017, p.15). The 1982 amendment to the Constitution and the adoption of the Charter shifted the supremacy of Parliament to the Charter (Richard, 2005) so that Parliament is no longer supreme in its law-making authority.

Since 1982 (but more so in the last decade), the study argues that 1. Canada, as the state, has made strides in safeguarding Canadians’ human rights in cities. 2. It is not just the state, the Canadian judiciary also has a key role in expanding the scope of rights. 3. This is not to say that Canada has now reached a perfect state. Claims and assertions of rights in the city are an ongoing pursuit. And 4. lastly, the idea of human rights varies across the country, particularly between Quebec and the rest of the country, giving rise to tension between individual rights and collective rights (for instance, those of Indigenous peoples). These findings have profound implications on how municipalities craft and revise their policies and bylaws.

Citations

- Agrawal, S. K. (2014). Balancing municipal planning with human rights: A case study. *Canadian Journal of Urban Research*, 23(1), 1–20.
- Agrawal, S. K. (2020). Human rights and the city: A view from Canada. *Journal of the American Planning Association*, 87(1), 3–10. doi:10.1080/01944363.2020.1775680
- Monahan, P., Shaw, B., & Ryan, P. (2017). *Constitutional law* (5th ed.). Irwin Law.
- Richard, J. D. (2005). Federalism in Canada. *Duquesne Law Review*, 44(1), 5–34.
- Agrawal, S. 2022. *Rights and the city: Problems, Progress, and Practice*. University of Alberta Press. Edmonton

Key Words: human rights, Charter of rights and freedoms, Canada, cities

ENGAGING OR FURTHER ALIENATING THE SO-CALLED 'UNDESIRABLES': A CRITICAL ASSESSMENT OF NONPROFIT ORGANIZATIONS ROLES IN DOWNTOWN DALLAS PUBLICLY USED SPACES

Abstract ID: 1633

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This paper studies downtown Dallas as a sprawled, thriving, neoliberal city that puts urban parks at the focal point of its economic development and branding strategy. It examines the significant role of place-based and mission-based nonprofit and philanthropic organizations, foundations, conservancies, intermediaries, and their many collaborations in shaping the exclusionary nature of the ever-expanding urban center through various partnerships, associations, and affiliations. In other words, it investigates how nonprofit organizations shape the geographies of inclusion and exclusion in downtown Dallas.

The study benefits from the theoretical lenses provided by Lefebvrian sociology and three groups of his interpreters that equate the “right to the city” as claiming social justice (Harvey, 2012; Marcuse, 2009; Mitchell, 2003), spatial justice (Soja, 2010; Dikeç, 2009), and radical urban political justice (Purcell, 2003; Schmidt, 2012). It further relies on the theories discussing the “production of public space,” particularly the domain of planners, designers, and city officials or “conceived space” to further investigate the governance regimes’ structures and strategies and their relations with social inclusion and authentic participation, particularly in signature public spaces. Signature public spaces define the identities of their cities and situate themselves as venues for consumable experiences. They have also become a mission focus for philanthropists and conservancies amid other contemporary urban problems, such as homelessness, food deserts, etc.

I spent four years following critical players and events in downtown Dallas utilizing an intersectional feminist framework. I utilized semi-structured interviews with executive directors or program staff of place-based nonprofit organizations with 501(c)(3) status responsible for the management, activation, programming, or policing of downtown Dallas public spaces, and mission-based nonprofit organizations focusing on downtown communities, people of colors, immigrant and refugees, and homelessness. Investigating these institutional models, including but not limited to business improvement districts, public improvement districts, faith-based organizations, friends of the parks, conservancies, and else elucidates the multiplicity and transitioning governing modes, actors, and relations. It also clarifies the extent to which inclusionary or exclusionary strategies implemented by philanthropic institutions in signature spaces that define the region’s identity reflect the larger JEDIA policies and initiatives in the city, which concerns fell to tokenistic incorporation of aesthetic emplacement and co-optation of narratives and which falls short to commercialized inclusion, rather than authentic inclusion and justice pertaining racialized, gendered, classed, and sexualized struggles.

My Findings indicate simple dichotomies of “public” versus “private,” “for-profit” versus “nonprofit” and “inclusive” versus “exclusive” do not encompass the multi-faceted and multi-layered governance regime structures and employed strategies and the complexity and diversity of experiences in the time-space-event continuum. Thereby, planners should acknowledge nuances and spectrums to accentuate the weight, attitudes, and relations of permanent and temporal actors responsible for decision-making processes and/or street-level bureaucracies. As nonprofit organizations employ securitization, commercialization, and eventization—three exclusionary strategies typically employed by corporations and for-profit entities to choreograph places’ images and dynamics, thereby exclude undesirable users, and uses. Donations from the wealthy often come with strings attached. So, nonprofit organizations constantly “change the narratives” surrounding their exclusionary actions, programs, policies, and strategies, from excluding the “undesirables” to protecting users’ experiences and space image and commercializing urban spaces favoring the upper-middle-class desires to activating neglected spaces and provision of communal spaces.

Citations

- Marcuse, P. (2014). Reading the Right to the City. *City*. 18 (1): 4–9.
- Murray, M. (2009). Private Management of Public Spaces: Nonprofit Organizations and Urban Parks. *Harvard Environmental Law Review*, 34, 179–255.
- Trudeau, D. (2008). Junior partner or empowered community? The role of non-profit social service providers amidst state restructuring in the US. *Urban Studies*, 45(13), 2805–2827.

Key Words: Publicly Used Spaces, Governance Regimes, Nonprofit Organizations, Undesirables, Inclusion/Exclusion

BUILDING DYNAMIC TRANSDISCIPLINARY KNOWLEDGE AT THE LANDSCAPE LAB: TEST OF AN INTEGRATED PROCESS MODEL FOR PLANNING, DESIGN, AND ECOLOGY

Abstract ID: 1658

Individual Paper Submission

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Frameworks such as Social-Ecological Systems (SES) and Social-Ecological-Technical Systems (SETS) are proposed as essential lenses for effective planning for the complexity of twenty-first-century cities (Guerrero et al 2018, Bixler et al 2019). These frameworks are based on the articulation of interacting complex natural (ecological) systems, social systems, and infrastructural or built systems that are explicitly connected by a defined set of relationships and interactions mediated by design, rules, and norms. In order to conduct planning within such a framework, expert knowledge that is dynamic, not static, is essential both within and across all three subsystems. Dynamic knowledge is knowledge of the system as an evolving, adaptive entity, thus it is generated and maintained by ongoing activities such as experimentation, modeling, monitoring, analyzing and communicating. While planning incorporates data easily, standard planning processes are challenged to incorporate dynamic expert knowledge, especially from distantly-related fields such as the natural sciences.

Previous attempts at integrating expert scientific knowledge into planning have included the articulation of the concept of “designed experiments” (Felson & Pickett 2005) and the sustainability loop (Childers et al 2015). These approaches look for opportunities to integrate scientists, usually ecologists, into a planning or design process. Yet few studies have taken the concept and observed how the integrated process plays out through and post-construction, indeed many studies include only the design phase. Here, we ask: How do integrated processes support ongoing, dynamic knowledge generation and sharing over time in a “living lab” context? Based on interviews with practitioners and academics in the fields of ecology, planning and design, and representing varying degrees of contact and overlap between these fields, we build on existing foundational process models to present a fully integrated process model that includes planning, design, and ecological science. Our model both arises from and gives shape to an ongoing project on the University of Utah campus called the Landscape Lab (constructed in 2020) and is based on a SETS-like conceptualization of the urban system as composed of social, natural and built elements that coevolve and are linked by interactions and information.

The Landscape Lab is simultaneously an experiment in ecological and social revitalization of the site, a demonstration and educational landscape, and an externally-funded research facility focused on ecological stormwater management. Embedded within the design of the landscape are research questions that address ecological and engineering questions about biogeochemical and hydrological processes, social questions about acceptance, perceptions and human-nature relationships, and economic and operational questions about cost, maintenance, and institutional operations and structures. I will present our integrated process model, along with findings from interviews with key participants completed at the initiation of the design process and again post-construction. These interviews explore questions that test the process model: Did participants feel heard as well as informed? Does the project live up to its initial objectives from all perspectives? How do we manage resources and governance going forward? How effectively and by what mechanisms is information and learning shared throughout the planning, design, construction, and post-construction phases?

The findings offer important considerations currently missing from such integrated process models, such as governance, turnover of individual stakeholders, and long-term resource allocation.

Citations

- Bixler, R.P., Lieberknecht, K., Leite, F., Felkner, J., Oden, M., Richter, S.M., Atshan, S., Zilveti, A., Thomas, R. (2019). An observatory framework for metropolitan change: understanding urban social-ecological-technical systems in Texas and beyond. *Sustainability* 11, 3611.
- Childers, D.L., Cadenasso, M.L., Morgan Grove, J., Marshall, V., McGrath, B., & Pickett, S.T.A. (2015). An Ecology for Cities: A transformational nexus of design and ecology to advance climate change resilience and urban sustainability. *Sustainability* 7, 3774-3791.
- Felson, A., & Pickett, S.T.A. (2005). Designed Experiments: new approaches to studying urban ecosystems. *Frontiers in Ecology and the Environment* 3(10).
- Guerrero, A.M., Bennett, N.J. Wilson, K.A., Carter, N., Gill, D., Mills, M., Ives, C.D., Selinske, M.J., Larrosa, C., Bekessy, S., Januchowski-Hartley, F.A., Travers, H., Wyborn, C., & Nuno, A. (2018). Achieving the promise of integration in social-ecological research: A review and prospectus. *Ecology and Society* 23.

Key Words: ecological planning, process model, designed experiment, living lab

THE ROLE OF ORGANISATIONAL ‘STRUCTURES’ IN SHAPING THE INDIVIDUAL ‘AGENCY’ OF PROFESSIONAL PLANNERS

Abstract ID: 1793

Individual Paper Submission

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Overall Aim & Scope

This paper draws on ongoing research that aims to explore the extent to which supportive macro, meso and/or micro-scale organisational arrangements help generate a culture which supports 'effective planning'. The starting hypothesis is that how planning organisations are structured has a significant impact on the ability of the professional planner to undertake what they perceive to be 'effective' planning work, but that there has been little research that addresses this issue.

Significant bodies of work have continued to develop that explore the role of institutional culture at the macro-scale (e.g. Valler & Phelps, 2018; Knieling and Othengrafen, 2015) and individual agency in day-to-day planning practice at the micro-scale (e.g. Murtagh, Odeleye & Maidment; 2019; Inch, 2010), shedding important light on what planners do, and how this is culturally shaped. In contrast, there has been little focus on how the agency of planners might be influenced by the practices and practical arrangements associated with the particular forms and structures of planning organisations; both macro-scale arrangements such as geographical remit and reach, and meso-scale practices such as recruitment arrangements, hierarchical structure, networking opportunities and professional development.

Methodological Approach

The analysis draws on the findings from semi-structured interviews with practitioners from across a range of planning organisations and networks in the UK and Europe, designed to explore how such arrangements shape the space(s) for 'effective' planning. Planning in the UK has tended to operate through far more centralised governance arrangements than in North America and Continental Europe, with local municipalities typically having little autonomy from federal government. However, for this research project, participant organisations were chosen for their diversity of form, with a particular focus on those operating outside of the traditional tiers of the formal UK planning system. This includes private sector consultancies as well as innovative public sector organisations, and professional networks.

Following from this, the focus of the research is not on the quality of the planning work that is being done and the associated spatial outcomes. Instead, the work focuses on the planner themselves, and their ability to work in a way that they consider 'effective', drawing on the normative model of the 'reflective practitioner' (Schön, 1983). A further important aspect of this has been to talk to practitioners who are both more senior and more junior in an organisation's hierarchy, in order to consider whether an organisation's normative ideals and public image are borne out in day-to-day practice.

Contribution to the Field

The paper offers reflections on which organisational factors are most clearly structuring the space for reflective practice within the planning discipline, factors that are derived from a European context but which may be generic to planning organisations globally and which highlight the importance of looking at how planning work is organised. Consequently, the work provides new insights into the intermediary links between the cultures of planning that tend to operate at a federal scale and the day-to-day practices at the micro-scale; both how they are structured by the former and structure the latter, and how they might be normatively organised to shape 'effective' planning practice.

Citations

- Inch A. (2010) Culture Change as Identity Regulation: The Micro-Politics of Producing Spatial Planners in England. *Planning Theory & Practice*. 11 (3), pp. 359-374.
- Knieling J. and Othengrafen F., (2015) Planning culture—a concept to explain the evolution of planning policies and processes in Europe? *European Planning Studies*. 23(11), pp.2133-2147.
- Murtagh N., Odeleye N. and Maidment C. (2019) Identities as Enabling Conditions of Sustainability Practices in Urban Planning: a Critical Realist Exploration with Planners in England. *Urban Planning*. 4 (4), pp.86-97.
- Schön D. (1983) *The Reflective Practitioner*. London: Temple Smith.
- Valler D. and Phelps N.A. (2018) Framing the future: on local planning cultures and legacies. *Planning Theory & Practice*. 19(5), pp.698-716.

Key Words: Organisations, Agency, Professionalism, Structures, Culture

ON VOLUNTARY BARGAINING VS EMINENT DOMAIN: EXPLORING PRACTICAL ALTERNATIVES FOR RESOLVING HOLDOUTS UNDER THE TAKINGS CLAUSE

Abstract ID: 1858

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For this study, the primary research question is exploring practical alternatives for resolving holdouts under the Takings Clause, i.e., without requiring direct government intervention (via eminent domain). The body of relevant academic literature identifies three holdout-related externalities that must be fully internalized during public land assembly projects, i.e., to correct/prevent a classic Market Failure in the provision of a Public Good. These are: (1) transactions costs, (2) ownership, and (3) strategic bargaining externalities. [Cooter and Ulen 2004; Merrill 1986; Heller 1998; Posner 2005; Kelly 2006; Miceli and Segerson 1998; et al]. Following the grounded theory research design methodology pioneered by Coase, Cheung, Tabarrok, et al, this study examines three well-documented land assembly cases studies, conducted at the height of the Urban Renewal era: Columbia, MD (1962-65) [James Rouse]; Walt Disneyworld, FL (1963-65) [Walt Disney]; World Trade Center, NYC (1961-63) [Guy Tozzoli]. This study also conducts formal IRB interviews with real estate administrators at public universities across the US, who participated directly in ongoing campus expansion/land assembly negotiations, i.e., at the height of the Kelo controversy (2004-2005). The key finding of this study is discovering that these street-level negotiators universally employed the same basic innovative 4-stage planning/acquisitions/negotiations/bargaining methodology, i.e., enabling them to systematically internalize all three well-defined holdout-related externalities, thus, fully resolve holdouts, without requiring eminent domain. As an original contribution to our knowledge, by providing real-world evidence of such practical alternatives, this study refutes by existence the orthodox US planning/policy assertion, namely, that eminent domain is required for overcoming holdouts, even for strictly private use, under the Takings Clause.

Citations

- Cooter and Ulen 2004 Law and Economics, Fourth Edition, Scott-Foresman, 2004.
- Thomas W. Merrill, Economics of Public Use, 72 CORNELL L. REV. 61 (1986).
- Heller, M. "The Tragedy of the Anticommons: Property in Transition from Marx to Markets," Harvard Law Review 111: 621-688. (1998)
- Posner, Richard. "Foreword." Harvard Law Review Vol 119:31 November 2005: 98.
- Childe, V.G.: The Town Planning Review Vol. 21, No. 1 (Apr 1950), pp. 3-17 (19 pages)

Key Words: Coase Theorem, Public Goods Externalities, Pigouvian Taxation, Eminent Domain, Takings Clause

LESSONS FROM A FAILED SMART CITY PROJECT: A CASE STUDY OF SIDEWALK TORONTO

Abstract ID: 1891

Individual Paper Submission

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In recent years, central and local governments, policy makers, developers and high-tech companies have developed the smart cities to make sustainable city and improve the quality of life for citizens based on Information and Communication Technologies (ICTs) and data-driven approach. While smart cities are expected to make urban transportation efficient, optimize energy use, and provide convenience to citizens, smart city initiatives present blueprints of future cities through advanced technology.

However, even though the smart city initiatives highlight the cutting-edge technology, resident participation, and public-private partnerships are often disregarded. Smart city developments are large scale public-private partnerships projects, and it is important to establish the public-private-civil society governance and consensus processes. Previous studies on smart cities have highlighted the concept of solving problems of the city using advanced technology (Bundgaard & Borrás, 2021; Drapalova & Wegrich, 2020). However, there is a lack of studies that systematically analyzes governance between stakeholders even though governance failure can lead to project failure.

This study is a case study to identify the process and factors that led to the failure of the smart city development process with an example of the "Sidewalk Toronto" project. In 2017, the "Sidewalk Toronto" project promoted by Sidewalk Labs to redevelop Toronto's eastern waterfront area, but the project was withdrawn in 2020. It suffered a conflict with civil society regarding data collection and privacy infringement.

The study applies a modified version of the Institutional Analysis and Development (IAD) framework which has been widely employed in public conflict and governance research (Ostrom, 2010). The IAD framework conceptualizes collective action as a set of action arenas that consists of actors and action situations, thereby enabling us to understand the interactions between activities of the actors and the policy outcomes, especially useful for a collective action, i.e., urban planning (Karnenbeek & Janssen-Jansen, 2018). With the framework, this study analyzes the context, action arena, and interactions of actors to figure the entire process and identify the risk factors of the project that led the failure.

This study can contribute to the literature by examining the risk factors of smart city development process and the choices and interactions of policy actors. Furthermore, institutional settings and the role of both private and public actors for successful governance in smart city development will be suggested from the findings.

Citations

- Bundgaard, L., & Borrás, S. (2021). City-wide scale-up of smart city pilot projects: Governance conditions. *Technological Forecasting and Social Change*, 172, 121014.
- Drapalova, E., & Wegrich, K. (2020). Who governs 4.0? Varieties of smart cities. *Public Management Review*, 22(5), 668-686.
- Ostrom, E., (2010), Beyond Markets and States: Polycentric Governance of Complex Economic Systems, *American Economic Review*, 100(3): 641-672.

Key Words: Smart city, Governance, Sidewalk Toronto

THE EVOLUTION OF CONFLICT ENGAGEMENT IN URBAN PLANNING

Abstract ID: 1954

Individual Paper Submission

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This paper explores different forms of conflict in the processes of urban planning as they appear in the planning literature over the last two decades. We undertake a systematic review of the planning literature as presented in 16 English language academic journals for the period from 2000 to 2021. While much has been written about various kinds of conflict to date no one has taken a holistic look at this body of work to understand how conflict is defined, categorized, analyzed, understood and theorized in the planning literature. Using a conflict engagement approach informed by practitioners of conflict resolution and conflict engagement, we analyse the planning literature to better understand the body of work that deals with conflict and the various mechanisms employed to address it.

A common understanding of conflict engagement is that it has moved from pragmatic to neo-pragmatic approaches and processes. Planning curricula, for example, emphasize a progressive approach to managing and planning disagreements to address underlying social, cultural, ontological and epistemological aspects of urban and regional planning policies and interventions (Healey, 1997). More pragmatic approaches to conflict engagement emphasizes the importance of interaction and action-based communication in creating meaning, relationships, and identity (Glenn & Susskind). Our analysis, however, found that pragmatic approaches that favour rational, interest based approaches to conflict resolution have not waned. We found that planners continue to employ a variety of approaches to addressing conflicts depending on the nature of the problem. Instead we find that practitioners and the scholars who write about them employ other categories to decide on where they might fall on the pragmatic to neo-pragmatic spectrum. Conflicts that had a long duration are much more likely to employ neo-pragmatic and arts based approaches to conflict engagement. We present a number of these approaches in the paper and provide planners with ways to use them.

The aim of this work is to help planning scholars and practitioners situate their own conflict cases within an array of conflict types and engagement approaches. They may discover alternative ways of framing their own conflicts and may perhaps discover other ways of categorizing planning issues as being imbedded in conflict.

Citations

- Forester
- Susskind
- Sandercock

Key Words: conflict engagement

INTEGRATING ECONOMIC DEVELOPMENT AND TRANSPORTATION IN THE PLANNING PROCESS

Abstract ID: 1977

Individual Paper Submission

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Transportation planners and activists have increasingly sought to shift transportation systems and trips away from automobiles and towards other forms of transport. Such shifts are critical not just for combating climate change but also for addressing both skyrocketing pedestrian and bicyclist fatalities linked to automobile-centric systems and transportation's longstanding environmental, health, and community injustices. Still, transportation planners have struggled to enact this shift; national policy remains autocratic, and state and local budgets and efforts remain overwhelmingly tilted towards personal automobiles as well.

Within this context transportation planners typically frame workers as transportation users; system change focuses on how transportation mode or service shifts might either expand or limit work opportunities and commutes. These are important considerations. Yet missing from this framing is how and the extent to which large-scale transportation shifts might impact the demand for labor, firms, and industries in and related to the transportation sector—and thus the wellbeing of workers and their communities. That is a significant oversight. When taking indirect and induced employment into account, the auto industry accounts for about 1 in 25 jobs in the United States.

This paper first asks questions about policy. How might transportation policies aimed at shifting trips away from automobiles impact workers, firms, and regions? And how do those impacts dovetail with broader patterns in changing inequality, work, and regional fortunes? Building on these questions, the paper turns to planning and policy practice—in particular, underdeveloped links, mismatched processes, and professional barriers between economic development and transportation planning. Drawing on extensive literature in climate, labor, and transportation policy, as well as planning theory and public administration literatures and economic development case studies, this paper ends with three takeaways.

First, progressive labor & industrial development policies that center the needs of workers and their communities must be reframed as preconditional or concomitant policies for multimodal transportation planning and funding. Second, the practice of economic development must change to be more in line with other forms of planning—emphasizing transparency, community participation, and public disclosure. And third, planners must rethink and strengthen ties between economic development and multimodal transportation. While planners are used to the adage “the best transportation plan is a good land use plan,” it could also be true that “the best transportation plan is a good economic development plan.”

Citations

- Bendavid-Val, A. 1980. Local Economic Development Planning: From Goals to Projects, Planning Advisory Service report no. 353, Washington, DC: American Planning Association.
- Cutcher-Gershenfeld, Brooks and Mulloy. (2015). The Decline and Resurgence of the U.S. Auto Industry. Economic Policy Institute.
- Iskander, N. N., & Lowe, N. (2020). Climate change and work: Politics and power. *Annual Review of Political Science*, 23, 111-131.
- Litman, T. (2013). The new transportation planning paradigm. *Institute of Transportation Engineers. ITE Journal*, 83(6), 20.

Key Words: planning practice, transportation, economic development, labor, climate

ADDRESSING SOCIAL INEQUITIES IN NETWORKS OF COLLABORATION IN FLOOD DISASTER RECOVERY PLANNING: A CASE STUDY IN HOUSTON

Abstract ID: 2030

Individual Paper Submission

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Floods threaten most coastal communities in the U.S. However, flood impacts are not experienced uniformly by all communities. Socially vulnerable (e.g., low-income, racial minority) neighborhoods have consistently reported experiencing more damage during disasters and faced slower recovery times compared to others in the same community (Van Zandt, 2019). Disparities in impact and recovery are partly due to discriminatory planning (Shi et al., 2016). Traditional government-led planning has failed to meaningfully engage socially vulnerable households and overlooked their recovery needs (Hamideh & Rongerude, 2018). Moreover, engagement processes undertaken in post-disaster time compression have lacked transparency and placated the interests of socially vulnerable households (Olshansky, Hopkins & Johnson, 2012). Marginalization has further reinforced knowledge gaps and power imbalances, thereby diminishing trust in planning processes and reducing coping capacities against flood disasters

among high socially vulnerable households (Van Zandt, 2019).

Past examinations of plans and engagement processes have repeatedly found that high socially vulnerable groups lack voice. However, there is limited guidance on who needs to be targeted to remedy voicelessness in planning for flood risks and *what methods* could be used to identify them. This study seeks to address these gaps by analyzing the network of organizations involved in neighborhood flood recovery activities (e.g., home rebuilding) but marginalized from long-term planning. We asked:

What are the differences in how neighborhood, city, and regional organizations collaborate on flood recovery in low-versus high- socially vulnerable neighborhoods?

- Are there differences in central organizations?
- Are there differences in access to different types and scales of planning organizations?
- Are there differences in the process of collaboration?

This study is the first to use social network analysis (SNA) (Dempwolf & Lyles, 2012) to compare networks of collaborating organizations in high- and low- socially vulnerable neighborhoods. We focus on the City of Houston. Despite Houston's long legacy of systematic discrimination, their recent focus on socially equitable flood recovery makes Houston an ideal case study. We conducted 24 interviews with neighborhood organizations engaged in Hurricane Harvey recovery in the two neighborhoods. Interviewees represented neighborhood planning, civic, non-profits, and faith-based organizations. Combining name-generator and open-ended questions we answered the research questions.

Preliminary analysis of interviews presents new insights on differences in collaboration networks on flood recovery in high- and low- socially vulnerable neighborhoods. In low-socially vulnerable neighborhoods, planning and civic organizations are central to recovery and long-term planning activity; they also foster collaboration with regional planning organizations. In high-socially vulnerable neighborhoods, non-profit and faith-based organizations are central to the recovery network. They carry out short-term disaster recovery activities and advocate for long-term policy changes. Yet the same non-profit and faith-based organizations reported barriers in collaborating with city and regional planning organizations and influencing planning processes. There were also differences in the process of collaboration. Organizations in high socially vulnerable neighborhoods recalled a lengthy process of building trust and demanding transparency in planning. Organizations in low socially vulnerable neighborhoods were able to leverage well-established pre-disaster relationships with planning organizations, exercise more influence, and expedite planning processes.

This suggests that, despite increasing attention to social equity in Houston after Hurricane Harvey, organizations that are knowledgeable of recovery needs in high socially vulnerable neighborhoods continue to feel marginalized from long-term planning. From these findings, we draw recommendations on how different types and scales of planning organizations can better design engagement processes to target marginalized organizations and establish and sustain partnerships with actors in high socially vulnerable neighborhoods. We end by discussing special considerations for planning for social equity in post-disaster time compression.

Citations

- Dempwolf, C. S., & Lyles, L. W. (2012). The uses of social network analysis in planning: A review of the literature. *Journal of Planning Literature*, 27(1), 3-21.
- Hamideh, S., & Rongerude, J. (2018). Social vulnerability and participation in disaster recovery decisions: public housing in Galveston after Hurricane Ike. *Natural Hazards*, 93(3), 1629-1648.
- Olshansky, R. B., Hopkins, L. D., & Johnson, L. A. (2012). Disaster and recovery: Processes compressed in time. *Natural Hazards Review*, 13(3), 173-178.
- Shi, L., Chu, E., Anguelovski, I., Aylett, A., Debats, J., Goh, K., ... & VanDeveer, S. D. (2016). Roadmap towards justice in urban climate adaptation research. *Nature Climate Change*, 6(2), 131-137.
- Van Zandt, S. (2019). Impacts on socially vulnerable populations. *The Routledge Handbook of Urban Disaster Resilience: Integrating Mitigation, Preparedness, and Recovery Planning*. Routledge.

Key Words: Procedural Equity, Disaster Recovery Planning, Social Network Analysis, Planning Process

Track 12 - Regional Planning

Track 12 Pre-Organized Session Summaries and Abstracts for the Sessions

PLANNING RESEARCH DOWN UNDER

Pre-Organized Session 60 - Summary

Session Includes 1119, 1328, 1329, 1330

MAGINN, Paul [University of Western Australia] paul.maginn@uwa.edu.au, organizer

This pre-organised session provides a suite of papers analysing a mix of key planning research and policy challenges within metropolitan Australia. Topics to be analysed include: 1. the perennial planning dilemma of providing a diverse and affordable supply of housing for rent and purchase in metropolitan regions; 2. the challenges of fostering and sustaining small-scale manufacturing activity within formal industrial districts and mixed-used industrial precincts in Melbourne; 3. the nature and character of Australian urban planning systems and practices and how they compare with international contexts; and, 4. the impacts of the COVID-19 pandemic on the spatial re-structuring of metropolitan regions as CBDs have been hollowed out and the suburbs have benefitted as a result of working from home and other practices. The session seeks to highlight the condition of planning issues and problems affecting Australian metropolitan regions and serve as a framework to stimulate comparative discussion/debate on the similarities/differences in experience within metropolitan regions in North America.

Objectives:

- Comparative Urban Analysis
- International planning practice

HOW DOES MANUFACTURING SURVIVE IN THE CITY?: A COMPARATIVE STUDY OF URBAN INDUSTRIAL DISTRICTS IN MELBOURNE, AUSTRALIA

Abstract ID: 1119

Abstract within Pre-Organized Session 60

GRODACH, Carl [Monash University] Carl.Grodach@monash.edu, presenting author

Urban industrial land is crucial to a growing set of small urban manufacturers in cities globally. These enterprises typically depend on a central location due to their production requirements yet face displacement pressures due to the redevelopment of industrial areas into mixed-use residential and consumption spaces. Literature has long argued that planned industrial districts are an essential means of retaining the employment and economic benefits that manufacturing firms provide (Chapple, 2014). More recent work finds that while industrial zones at large preserve existing industrial activity, they do not support the attraction of new firms or the growth of existing manufacturing clusters (Davis and Renski, 2020).

However, research has yet to identify if specific urban industrial districts attract new firms or the variation across different manufacturing sectors, which could explain different economic development trajectories. Additionally, studies have rarely examined the potential for alternative industrial zoning mechanisms that mix previously incompatible uses. Recent work argues that the changing nature of manufacturing potentially enables the integration of some production activities with nonindustrial uses, but the outcomes are not well documented (Roost and Jackel, 2021). This question becomes increasingly important as governments continue to rezone traditional industrial preservation zones under growing pressure for new housing and mixed-use development.

This paper relies on structured site analysis and interviews with urban manufacturing enterprises located in formal industrial districts and informal or transitioning mixed-use industrial districts in Melbourne, Australia. The aim is to determine if and how the districts support, grow, or hinder development of different types of manufacturing activity. Results of this on-going project aim to uncover how specific regulatory and built environments play a role in economic clustering patterns. This knowledge may inform planning responses that support urban manufacturing.

Citations

- Chapple, K. (2014). The highest and best use? Urban industrial land and job creation. *Economic Development Quarterly*, 28(4), 300-313.
- Davis, J., & Renski, H. (2020). Do industrial preservation policies protect and promote urban industrial activity? Examining the impact of New York City's Industrial Business Zone program. *Journal of the American Planning Association*, 86(4), 431-442.
- Roost, F. & Jecke, L. (2021). Post-Fordist production and urban industrial land use patterns. *Urban Planning*, 6(3), 321-333.

Key Words: Economic development, industry clusters, industrial districts, urban manufacturing, zoning

COVID (SUB)URBANISMS AND REGIONALISMS: SOCIO-SPATIAL TRENDS, PATTERNS AND POLICY RESPONSES WITHIN METROPOLITAN AUSTRALIA 2020-2022

Abstract ID: 1328

Abstract within Pre-Organized Session 60

MAGINN, Paul [University of Western Australia] paul.maginn@uwa.edu.au, presenting author

The COVID-19 global pandemic has disrupted the normative socio-spatial structure and (sub)urban ways of living, working, moving and consuming within Australia's major metropolitan regions (Maginn & Mortimer, 2020; Mortimer, et al., 2020). Relatedly, the COVID19 pandemic has created the space and opportunity for the emergence of innovative and repressive governance (McGuirk et al., 2020; Acuto, 2020a; 2020b). Much of the academic (and media) focus on the impacts of COVID-19 has been captured by "methodological cityism" (Brenner and Schmid, 2014; Connolly, 2018). That is, the analytical and policy gaze has tended to focus more on the impacts and future role of the CBD (Florida et al., 2021). This is not surprising given the historical and contemporaneous significance of the CBD as the apex activity centre within the constellation of activity centres – capital city; strategic metropolitan, secondary, district, and neighbourhood – that characterise Australia metropolitan regions. The need to socially distance combined with government, corporate and organisational mandates that people work from home (WFH), study from home (SFH) and safeguard at home (SAH) have given rise to a spatial paradox wherein the CBD has become a secondary space, and suburbia has become a primary space. This paper draws on data from Google's Community Mobility Reports and the Australian Bureau of Statistics to ponder the extent of spatial re-ordering within metropolitan Australia by providing an analysis of the impacts of COVID-19 on visitors trends to key spaces – (i) retail/recreation; (ii) transit stations; and (iii) workplaces, plus (iv) time spent in residential spaces at the local government area (LGA) across the five largest state capital cities – Adelaide, Brisbane, Melbourne, Perth, and Sydney – and a select number of major urban areas in regional Australia. The analysis provides insights at a range of temporal scales – yearly, quarterly, monthly and daily – and highlights that the spatial impacts of COVID19 at the inter- and intra-metropolitan level have been far from universal. Furthermore, consideration is also given to the relationship between COVID-19 cases and, population density and socio-economic (dis)advantage at the LGA level (Hamidi et al., 2020; Florida, 2020; Keil, 2020). Ultimately, Central Business Districts have been particularly disrupted by the COVID19 pandemic. This has provoked a range of policy responses in an effort to rejuvenate Australian CBDs.

Citations

- Florida, R., Rodriguez-Pose, A., & Storper, M. (2020). Cities in a post-Covid World, *Urban Studies*, June 2021, <https://doi.org/10.1177/00420980211018072>.
- McGuirk, P., Dowling, Maalsen, and Baker, T. (2020) Urban governance innovation and COVID-19, *Geographical Research*, 59(2): 188-195.
- O'Sullivan, D., Rahamathulla, M., & Oawarm, M. (2020). The impact and implication of Covid- 19: An Australian perspective', *The International Journal of Community and Social Development*, 2(2), 134-151.
- Acuto, M. (2020a). COVID-19: Lessons for an urban(izing) world. *One Earth*, 2, 317- 319. <https://doi.org/10.1016/j.oneear.2020.04.004>.
- Hamidi, S., Sabouri, S. & Ewing, R. (2020) Does density aggravate the Covid- 19 pandemic? *Journal of the American Planning Association*, 86 (4), 495-509. <https://doi.org/10.1080/01944363.2020.1777891>.

Key Words: COVID-19, Metropolitan Australia, Central Business District, Suburbanisms, Retail

THE CHALLENGE OF FOSTERING 'DIVERSE' AND AFFORDABLE HOUSING WITHIN METROPOLITAN AUSTRALIA: PERSPECTIVES OF BUILT ENVIRONMENT PROFESSIONALS

Abstract ID: 1329

Abstract within Pre-Organized Session 60

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Objectives to increase housing diversity are now a common feature of Australian metropolitan strategic planning, as in many other parts of the world. Diverse housing stock, particularly multi-unit and attached housing types are seen as necessary to contain urban sprawl while providing lower cost market offerings in the context of significant housing affordability pressure. However, as in other nations with a tradition of car dependent suburbia, achieving these goals has proven difficult in practice. The stock of Australian housing continues to be dominated by large, detached homes on the urban fringe, and high rise apartments in inner areas, with affordability for renters and first home buyers a persistent challenge. A large body of research points to the role local or municipal planning policies and development control practices can play in maintaining established urban form and preventing market delivery of higher density and more affordable housing types, particularly in established suburbs (e.g. Glaeser and Ward 2009; McGreevy 2018; Whittemore and BenDor 2019). Policy discourse in Australia as in the US and the UK, has also positioned the planning system as a central barrier to diverse and lower cost housing supply. But surprisingly little research has captured the perspectives of planners and built environment professionals themselves on the challenges they face in implementing policy aspirations for greater housing diversity, particularly in middle and outer suburbs. This is surprising given that these professionals operate at the 'frontline' of development control (Clifford 2012) with unique insights on nuanced policy effects.

This paper begins to address this gap by examining the perspectives of planners and other built environment professionals working in three metropolitan regions of Australia. We investigate: (1) the types of 'diverse' housing seen as lacking in the context of different urban and suburban geographies; and (2) the main challenges for developing those housing types, related to the planning system and external to it. We build on recent research which adopts a systems approach to understand patterns of housing production by attending to the institutional actors and processes in which residential development occurs (McKinlay et al. 2021). Data is derived from exploratory interviews and three in depth focus groups conducted in Sydney, Melbourne and Perth, which capture the perspectives of 51 experienced built environment professionals. Interview and focus group transcripts are coded and analysed thematically and we refer to available data on metropolitan region housing markets and planning system outputs in interpreting the qualitative results.

We find that these actors' perceptions of the need for 'diverse' housing extend beyond built form, with built environment professionals in Sydney and Melbourne in particular emphasising the need for models and tenures that can preserve long term affordability, in addition to providing built form diversity in renewing suburbs. In contrast to policy discourse which has focused heavily on the role of local development control in determining housing outcomes, we find that both planners and housing developers alike see factors such as financing requirements, industry capacity, and land markets as critical constraints. Moreover, we find that state-led planning changes to reduce perceived regulatory barriers to housing production (eg. widespread 'upzoning') have perversely limited the tools available to planners to support, incentivise and require mixed tenure projects and development models for longer term affordability, without necessarily increasing new supply. This contributes to the limitations planners already face in fostering diversity within a market-based system of housing production. Overall, the research provides new empirical evidence of the nexus between urban regulation and residential development outcomes within market-based systems, as well as identifying scope for more targeted government interventions.

Citations

- Clifford, B. P. (2012) "Reform on the Frontline: Reflections on Implementing Spatial Planning in England, 2004–2008." *Planning Practice & Research* 28 (4) pp. 361–383.
- Glaeser, E.L. and Ward, B.A. (2009) 'The causes and consequences of land use regulation: evidence from Greater Boston', *Journal of Urban Economics*, vol. 65, no. 3: 265–278.
- McGreevy, M.P. (2018) Housing Diversity and Affordability: The Effects of 35 Years of Exclusionary Land Use Regulations on Housing Affordability in Adelaide, South Australia, *Urban Policy and Research*, Vol. 36 No.3 pp.336–353
- McKinlay, A., Stevens, N.J. and Baldwin, C. (2021) Power relationships in housing production: a sociotechnical systems perspective on the expanding suburb, *Urban Policy and Research* Vol.39 No.3 pp.233–248
- Whittemore, A.H. and BenDor, T.K. (2019) 'Opposition to housing development in a suburban US county: characteristics, origins and consequences', *Land Use Policy*, 88: 1–9

Key Words: Housing, Diversity, Affordability, Urban containment, Development control

PLANNING IN AN UNCANNY WORLD: AUSTRALIAN PLANNING IN INTERNATIONAL CONTEXT

Abstract ID: 1330

Abstract within Pre-Organized Session 60

This paper seeks to contribute to the literature on comparative international planning. It considers in what ways Australian urban and regional planning has relevance to conditions and planning responses elsewhere in the world rather than being purely an exceptional case. It draws on contributions in a new edited volume (Phelps, Bush and Hurlimann, 2022) presenting the key discussion points in the introduction to that volume. The thematic basis to this collection draws on literature beyond the extant urban planning literature that does seek to place Australian urban planning in international to present a new analytical synthesis. In particular, it makes use of Gelder and Jacobs' (1995) mobilization of the idea of the uncanny to understand Australian settler society's coming to terms with Indigenous sovereignty. The uncanny is a notion which I believe also helps understand not only the peculiarity of Australian conditions and planning responses but also Australian urban planning's place in the wider world.

Australian urban and regional conditions and their associated planning responses can and often have been seen as unique or exceptional. They are seldom discussed in the same breath as conditions and associated planning systems internationally (although see Huxley and McLoughlin, 1985). Yet, as well as being somewhat different from those elsewhere in the world, Australian urban-regional conditions and planning responses are also somewhat similar. They are uncanny - strange but familiar (Gelder and Jacobs, 1995). Australian urban conditions, and planning policy and practice responses are informally compared and contrasted with those existing internationally. To examine how Australian urban conditions and planning responses are revealing of the uncanny world in which live, I make reference to a trinity of themes. Australian urban conditions and associated planning policies and practices can be seen as exceptional or unique with little relevance to the rest of the world. However, an eclectic mix of urban forms and planning policies and practice responses to these is also apparent in Australia that reflects the exchange of ideas internationally. Then again, Australia is as much of an exemplar – a good, if not the best, reference point - of key urbanization trends as, say, the United States. The latter two Es in particular place Australian urban planning squarely in an international context. If Australian urban planning policy and practice have had limited influence internationally, the partial familiarity of challenges posed by its urban conditions ensure that Australia is a more important global reference point for scholarship and practice than commonly is appreciated.

Citations

- Gelder, K. and Jacobs, J.M. (1995) 'Uncanny Australia', *Ecumene* 2: 171-183
- Huxley, M. and McLoughlin, J.B. (1985) 'The new urban studies literature: a review with special reference to Australia', *Progress in Planning* 24: 161-246
- Huxley, M. and McLoughlin, J.B. (1985) 'The new urban studies literature: a review with special reference to Australia', *Progress in Planning* 24: 161-246 Phelps, N.A. Bush, J. and Hurlimann, A. (2022) *Planning in an Uncanny World: Australian Planning in International Context*. London: Routledge RTPI Library Series.

Key Words: Australian urban planning, comparative planning systems and cultures

Track 12 Roundtables

BEYOND THE LOCAL: A CALL-TO-ARMS FOR PLANNERS TO DRIVE NATIONAL URBAN POLICYMAKING

Abstract ID: 1259

Roundtable

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CURRID-HALKETT, Elizabeth [University of Southern California] currid@usc.edu, participant
STORPER, Michael [University of California, Los Angeles] storper@ucla.edu, participant

Planners tend to think and work at the scale of the neighborhood and city. Yet a wider analytical lens, focusing on extra-local forces, is essential to understanding contemporary urban problems (Randolph & Currid-Halkett, 2021). Over the past four decades, globalization and deindustrialization have produced new forms of inequality in our cities and regions—leading to highly polarized labor markets in “superstar cities” and chronic decline and disinvestment in many former industrial hubs (Storper, 2018). These patterns shape the political and policy contexts for economic development, housing, transportation, and many other urban planning domains (Nijman & Wei, 2020). While climate change, financialization, racial inequality, incarceration, and the Covid-19 pandemic all manifest locally in communities and cities, they are challenges that are difficult, if not impossible, to address through local policy alone.

Planning rightly embraces local, community-based action, and many academic planners call attention to systemic roots of local and regional problems. Yet in practice, planning rarely seeks to change extra-local forces through policy activism at higher levels of government. Planning, we argue, has ceded much of this ground to other fields. As a result, planners are largely absent from national policy conversations around issues that directly implicate cities. Not only does this reduce planning to a “fire-fighting” role, reacting to policy decisions from higher levels of authority; it also deprives national urban policymaking of a holistic, place-based approach to human development, where planners have great experience and expertise. This situation is neither an accident nor a strategic misstep by planners; it is the result of decades of federal government disinterest in comprehensive urban and regional policy, abetted by the broader neoliberal retreat of the state. However, recent political realignments, alongside a renewed focus on governance in Washington, D.C., may offer a once-in-a-generation opportunity for planners to reassert themselves in national policymaking. The challenge is a big one, because much of the policy that affects and constrains cities and regions comes from agencies other than the Department of Housing and Urban Development, and the federal government is an extremely complex structure. Moreover, planning departments are no longer turning out large and effective cadres of future national policymakers, implying a major curricular effort.

Against this backdrop, this roundtable discussion will engage its speakers and the audience in the following questions:

- How do we inculcate an appreciation for extra-local forces in planning research, practice and education? How do we inspire urban planning students to act in, but also beyond, the city?
- To what extent are planners at the table in designing national policy solutions to our most difficult urban and regional challenges?
- What are the issues on which the planning field could most effectively assert a more prominent role in national policymaking?

Citations

- Randolph, G. F., & Currid-Halkett, E. (2021). Planning in the Era of Regional Divergence: Place, Scale, and Development in Confronting Spatial Inequalities. *Journal of the American Planning Association*, 1–8. <https://doi.org/10.1080/01944363.2021.1935302>
- Storper, M. (2018). Separate Worlds? Explaining the current wave of regional economic polarization. *Journal of Economic Geography*, 18(2), 247–270. <https://doi.org/10.1093/jeg/lby011>
- Nijman, J., & Wei, Y. D. (2020). Urban inequalities in the 21st century economy. *Applied Geography*, 117, 102188. <https://doi.org/10.1016/j.apgeog.2020.102188>

Key Words: Regional divergence, Spatial inequality, National policymaking

Track 12 Individual Paper Submissions

RESEARCH AND DISCUSSION ON THE TEMPORAL AND SPATIAL DIFFERENTIATION OF URBAN-RURAL INCOME DISPARITY BASED ON COUNTY-LEVEL UNITS: A CASE STUDY OF HUBEI PROVINCE, CHINA

Abstract ID: 1009

Individual Paper Submission

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Based on the correlation analysis of historical data and GIS analysis, taking county-level administrative regions as the research unit, this paper analyzes the spatial distribution and change characteristics of urban-rural income disparity in Hubei Province, China from 2000 to 2020, as well as the influencing factors of this spatial-temporal differentiation of the disparity. It also discusses the current regional planning and puts forward suggestions on the planning.

The study found that the regional difference of urban-rural income disparity in Hubei province gradually tends to be balanced from 2000 to 2020, but the disparity is still large. That is, the sharing level of urban-rural development achievements is not high. At the provincial level, the urban-rural income disparity presents an obvious gradient in the East, middle and west regions, and the polarization phenomenon tends to intensify. The areas with huge gap between urban and rural areas are concentrated in Western and northeast Hubei. Within each municipal city, the urban-rural income disparity tends to be balanced, and the gap of prefecture-level cities generally ranks first for a long time. The spatial distribution difference of the above urban-rural gap is mainly affected by the congenital landform and location

conditions. In the study period, the spatial-temporal differentiation of urban-rural income disparity are affected by the market economy law, and the city biased policies such as registered residence and land. In order to achieve balanced and sustainable regional development, it is suggested to establish an ecological compensation mechanism and promote regional planning across administrative units.

Citations

- Cheng Kaiming, Li Jinchang. Analysis of Mechanism and Dynamic Econometric Relationships between Urban bias, Urbanization and urban-rural Inequality [J] Research on quantitative economy and technical economy, 2007, 24 (7): 10.
- Ding Zhiwei, Zhang Gaisu, Wang Fazeng. Spatial-temporal differentiation of urban-rural income in Central Plains Region at different scales[J]. Geographical Research, 2015, 34(1):131-148.
- Liu Yong,Long Cuihong. Urban and Rural Income Gap: Does Urban Spatial Form Matter in China?[J]. SAGE Open,2021,11(1).
- Zhang J., Li Z. Analysis of the Income Gap between Urban and Rural Areas Based on Lorenz Curves and Gini Coefficients[J]. Revista Tecnica De La Facultad De Ingenieria Universidad Del Zulia, 2016, 39(10):308-316.

Key Words: urban-rural income disparity, spatial-temporal differentiation, Hubei Province of China

TVA AND THE GRASS ROOTS AT 75: THE LEGACY OF A PLANNING CLASSIC

Abstract ID: 1081

Individual Paper Submission

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American planning has long struggled with the tensions among technical planning expertise, various demands for public voice, and claims to speak for ‘the public interest’. It continues with the current concern for equity and institutionalized bias. The approaching 75th anniversary of Philip Selznick’s 1949 classic, *TVA and the Grass Roots: A Study in the Sociology of Formal Organization*, is an apt time to revisit his pioneering work exploring those tensions. Our aim is to show the ongoing relevance of Selznick’s perspective through a reflection on what he said, how it was received by contemporaneous observers, and how it connects to rural regional development planning today.

TVA (the Tennessee Valley Authority) was established in 1933 as one of the first efforts to address the catastrophe of the Great Depression. It was a pioneering regional development planning agency, held up as a model for the emerging field. It served as a prototype for international development planning into the 1950s and ‘60s (Gilbert 2015). Selznick found TVA a “shining example” (p. 266) of technical competence. It also held itself up as an exemplar of what TVA director David Lilienthal (1944) called grass roots democracy – citizen participation and democratic planning. However, Selznick found that TVA’s behavior did not reflect that idealized view.

Selznick found that participation was limited to the region’s agricultural elite. Large-scale landowners and supporting organizations such as the Farm Bureau and officials from land grant universities came together in the Tennessee River Improvement Association to press their own local agenda. They constituted what Lilienthal called the grass roots. Vulnerable populations such as Black farmers, small landowners, tenant farmers, and sharecroppers were excluded from participation. TVA’s alignment with the powerful was a defensive posture to avert threats from local elites to TVA’s very survival.

Selznick used the term ‘co-optation’ to characterize this willing collusion in which TVA ceded control of its agricultural program and ignored the needs of the dispossessed.[1] This came to be called ‘elite capture’ as development planning was internationalized (Ansar 2018). Selznick’s study sheds important light on: 1) tensions between expertise and pressure for democratic participation; and 2) the challenge of political power and the realities of multiple publics.

After seven decades, those tensions remain highly relevant and yet under-explored by the planning literature. We use the lens of rural regional development planning and planning more generally to consider those matters. We examine what Selznick wrote and critiques from that time, then explicate recent scholarship to probe their implications for current thinking about equity and institutional bias in planning.

[1] / This is quite different from the current understanding of co-optation that emerged in the 1960s, the struggle for “maximum feasible participation” of the poor and the concern that powerful government and quasi-government agencies would control (co-opt) community groups and set their agendas. Community groups would be depoliticized and in the worst case serve as stooges for a controlling agency (Alinsky 1965).

Citations

- Alinsky Saul. 1965. The War on Poverty: Political Pornography. *Journal of Social Issues* 21: 41-43.
- Ansar, Atif. 2018. The Fate of Ideals in the Real World: A Long View on Philip Selznick's Class on the TVA. *International Journal of Project Management* 36: 385-395.
- Gilbert, Jess. 2015. *Planning Democracy: Agrarian Intellectuals and the Intended New Deal*. New Haven: Yale University Press.
- Lilienthal, David. 1944. *TVA: Democracy on the March*. New York: Harper and Brothers.
- Selznick, Philip. 1949. *TVA and the Grass Roots: A Study in the Sociology of Formal Organization*. Berkeley: University of California Press.

Key Words: rural, regional, development, participation, equity

THE CITY AFTER COVID-19: VULNERABILITY AND URBAN GOVERNANCE IN TORONTO, CHICAGO AND JOHANNESBURG

Abstract ID: 1194

Individual Paper Submission

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This presentation examines the role of municipal institutions and their civil society partners in mobilizing resources to mitigate the impact of COVID-19 and improve health and economic equity. Focusing on Toronto, Chicago and Johannesburg, we will examine how the pandemic exacerbated existing patterns of vulnerability, how municipal institutions have alleviated the devastating consequences of the pandemic, and how their interventions evolve after the acute phase of the pandemic passes. Many programs mobilized for COVID-19 equity response represent dramatic transformations in urban governance, in terms of new partnerships being forged between grassroots organizations, citizens, and municipal authorities. We compare the policies and programs adopted in the three urban regions and explain the differences in their policy choices.

Citations

- Ali, H., & Keil, R. (Eds.). (2008). *Networked Disease: Emerging Infections in the Global City*. Oxford: Wiley-Blackwell.
- Acuto, M., Larcom, S., Keil, R., Ghojeh, M., Lindsay, T., Camponeschi, C., & Parnell, S. (2020). Seeing COVID-19 through an urban lens. *Nature Sustainability*, 3, 977-978.
- Angel, S., & Blei, A. (2021). Why Pandemics, such as COVID-19, require a metropolitan response. *Sustainability*, 13(1), 79. DOI: <https://doi.org/10.3390/su13010079>
- Biglieri, S., Vidovich, T. D., & Keil, R. (2020). City as the core of contagion? Repositioning COVID-19 at the social and spatial periphery of urban society. *Cities & Health*, DOI: 10.1080/23748834.2020.1788320
- Connolly, C., Keil, R., & Ali, H. (2021). Extended urbanisation and the spatialities of infectious disease: Demographic change, infrastructure, and governance. *Urban Studies* 58(2): 245-263.

Key Words: pandemics, urban governance, comparison, urban theory

DOES POLYCENTRIC DEVELOPMENT REDUCE REGIONAL ECONOMIC DISPARITIES? A MULTI-SCALE ANALYSIS OF GERMAN REGIONS.

Abstract ID: 1201

Individual Paper Submission

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Understanding and mitigating regional disparities and spatial inequality are of great interest to both researchers and policymakers. Polycentric development has been identified as an effective instrument to lessen regional disparities and facilitate more balanced territorial development and has been articulated as a normative goal by the European Spatial Development Perspective (Veneri and Burgalassi, 2012). The assumption is that a monocentric urban system with a dominant core city would exacerbate spatial inequality, whereas a more polycentric one would lead to convergence within and between regions and produce more equitable and sustainable outcomes (Beijers and Sandberg, 2008).

However, such an assumption lacks robust theoretical underpinning and empirical justification. Theoretically, a polycentric metropolitan region could be an effective tool in reducing regional disparities if the agglomeration benefits are "regionalized" via urban networks such that subcenters could borrow functions and performance due to geographic proximity and functional linkages (Sun et al., 2019). On the empirical side, existing studies primarily address economic disparities in the context of large territorial units (e.g., at the EU or OCED country level) and provide mixed results. Research on the within-country regional scale is scant (Meijers and Sandberg, 2008; Malý, 2016), suggesting that geographic scale is an important consideration in testing the effectiveness of polycentrism at reducing spatial inequalities (Malý, 2016). As a result, no definitive conclusion has been drawn regarding whether polycentric regions account for fewer economic disparities, especially at the regional scale.

This empirical study aims to fill this gap by utilizing the German spatial planning regions (Raumordnungsregionen) and the federal states (Bundesländer) as the appropriate delineations of polycentric urban regions. Morphological polycentricity is measured using the distribution of employment among (sub)centers and functionally through inter-community commuting flows. Regional polycentricity is then associated with the intra-regional disparities measured by six equality metrics – the Gini coefficient, coefficient of variations, the Theil index, and the corresponding population-weighted version of them. Cross-sectional econometric analysis is finally applied to articulate the relationship between polycentricity and regional disparities, controlling for agglomeration factors, regional welfare, globalization, and regional redistribution.

We find that greater regional polycentricity is associated with decreased regional disparities at the scale of the spatial planning region, but this effect is not extended to the larger territorial units, the federal states. The finding suggests that the efficacy of polycentric systems may differ depending on geographical scales. It is possible that agglomeration economics, globalization, and territorial competition may enlarge regional disparities and undermine the effects of polycentricity at the federal state scale. Our results have implications for regional and national level spatial planning policies and contribute to the current debate on territorial cohesion across the EU.

Citations

- Meijers, Evert, and Krister Sandberg. "Reducing regional disparities by means of polycentric development: Panacea or placebo?" *Scienze Regionali* (2008).
- Sun, Bindong, Wan Li, Zhiqiang Zhang, and Tinglin Zhang. "Is polycentricity a promising tool to reduce regional economic disparities? Evidence from China's prefectural regions." *Landscape and Urban Planning* 192 (2019): 103667.
- Veneri, Paolo, and David Buralassi. "Questioning polycentric development and its effects. Issues of definition and measurement for the Italian NUTS-2 regions." *European Planning Studies* 20, no. 6 (2012): 1017-1037.
- Malý, Jirí. "Impact of polycentric urban systems on intra-regional disparities: A micro-regional approach." *European Planning Studies* 24, no. 1 (2016): 116-138.

Key Words: Polycentricity, Regional disparities, Regional Planning, Spatial Planning, Germany

TRANSBOUNDARY URBAN GROWTH ANALYSIS IN TURKEY'S MARMARA REGION USING SLEUTH CELLULAR AUTOMATA AND THE CORINE DATA

Abstract ID: 1270

Individual Paper Submission

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An increasing body work on urban growth modeling has focused on how regional policies influence future regional urbanization. However, more comparisons are needed on different the impact of different regional policy approaches on regional urbanization patterns. To fill the gap, this paper aims to assess two different regional urban growth policy interventions: the unified policy scenario which assesses a particular urban region as an integrated area and the diversified policy scenario focuses on the subregional variations with distinct urban growth patterns in urban regions. The study area is the Marmara region straddles Europe and Asia across the Sea of Marmara and also the most densely populated and industrialized city region in Turkey. The SLEUTH cellular automata method is applied to provide scenario-based urban growth simulations by using CORINE Land Cover data between 2000 and 2018. The results show that unified regional, diversified policy generate different urban growth patterns for the different subregions. We argue that the combination of unified and diversified policy interventions can lead to the most environmental conscious urban development of a region. We therefore discuss the relevancy of data-driven policy interventions to facilitate regional urbanization for sustainable regional development. In confirmation with previous studies, this paper extends the knowledge on regional urban growth and policy-making challenges by comparing the sensitivity of two distinct policies

Citations

- Dogan, E. and Stupar, A., 2017. The limits of growth: A case study of three mega-projects in Istanbul. *Cities*, 60, 281–288.
- Dogru, A.O., Goksel, C., David, R.M., Tolunay, D., Sözen, S., and Orhon, D., 2020. Detrimental environmental impact of large scale land use through deforestation and deterioration of carbon balance in Istanbul Northern Forest Area. *Environmental Earth Sciences*, 79 (11), 270.
- Altinkaya-Genel O., Guan C. 2021 Assessing urbanization dynamics in Turkey's Marmara Region using CORINE data between 2006 and 2018. In a special issue - CORINE Land Cover System: Limits and Challenges for Territorial Studies and Planning. *Remote Sensing*. 13(4), 664
- Nigussie, T.A. and Altunkaynak, A., 2017. Modeling Urbanization of Istanbul under Different Scenarios Using SLEUTH Urban Growth Model. *Journal of Urban Planning and Development*, 143 (2), 04016037.
- Güneralp, B., Xu, X., and Lin, W., 2021. Infrastructure development with(out) ecological conservation: the Northern Forests in Istanbul. *Regional Environmental Change*, 21 (3), 86.

Key Words: transboundary-risk management, unified and diversified policies, SLEUTH cellular automata, the Marmara region

BEYOND ADVANTAGE: HOW SILICON VALLEY REMADE MASSACHUSETTS' (SUB)URBAN TECHNOLOGY LANDSCAPE IN ITS OWN IMAGE

Abstract ID: 1360

Individual Paper Submission

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It has been over a quarter century since AnnaLee Saxenian demonstrated how the more flexible organizational culture of Silicon Valley enabled Northern California-based firms to outcompete their peers in the suburbs along Massachusetts' Route 128 Corridor (Saxenian 1994). In the intervening years, Silicon Valley has ballooned into a dominant force in the political economy of the United States, and a regional development model for established and aspiring global economic powers alike (Irani 2019).

But what of the sprawling high-technology landscape west of Boston in the intervening years? The initial loss of New England's technology firms did not follow the pattern of stranded fixed capital and economic decimation created by the earlier departure of textile production from the region. Using a combination of archival, visual, and spatial analytic methods, this paper argues that successful hardware-centric Silicon Valley firms expanded back into New England not only because of an ongoing concentration of skilled digital laborers, but to take advantage of the legacy built environment and cultural landscape of suburban technology work.

Drawing on three case studies – Intel's takeover of DEC's former headquarters, Western Digital's rented research and development facility, and Cisco's custom built Boxborough campus, we show that despite, or in part because of, Silicon Valley's turn to producing software, web applications, and multi-sided markets known as "platforms" as major sources of profit, a great deal of capital, labor and space in the Boston metropolitan area is still dedicated to producing the physical and technical systems that digital economies depend upon. At the same time, many of the marquee names from earlier decades of technology investment in New England have been out-competed or acquired by West Coast competitors, and those that remain tend to be either situated lower on the value chain (hardware firms in a tech economy drawing ever-higher valuations from relatively asset-light software startups; see Campbell-Kelly 2003), or are connected to specific regional educational or defense institutions with more fixed ties to place.

We conclude by exploring the last decade in particular, looking at new development of downtown technology campuses in Boston and Cambridge, an inversion of the previous explosion into first the Route 128 and later Interstate 495 (the outer "ring road" of the Boston suburbs) corridors. In doing so, we argue that the regional structure of the digital economy is once again being upended by place-based competition over biotechnology firms, local elites' desire to reproduce what they understand to be a Silicon Valley style 'start-up' economy (whether or not this is always an accurate analysis), and the long cultural move away from the suburban lifestyles of middle-class engineers to younger, wealthier developers' preferences for uniquely urban amenities and spatial arrangements (Stephens et al. 2019).

Citations

- Saxenian, AnnaLee. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Harvard University Press, 1996.

- Stephens, Bryan, John Sibley Butler, Rajiv Garg, and David V. Gibson. "Austin, Boston, Silicon Valley, and New York: Case studies in the location choices of entrepreneurs in maintaining the Technopolis." *Technological Forecasting and Social Change* 146 (2019): 267-280.
- Irani, Lilly. *Chasing Innovation: Making Entrepreneurial Citizens in Modern India*. Princeton University Press, 2019.
- Campbell-Kelly, Martin. *From Airline Reservations to Sonic the Hedgehog: A History of the Software Industry*. MIT Press, 2003.

Key Words: Regional development, Technology industry, Start-up economy, Economic geography, New England

RURAL PROOFING AND COVID-19: HOW EFFECTIVE DATA COLLECTION CAN IMPACT RURAL PLANNING

Abstract ID: 1553

Individual Paper Submission

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COVID-19 has significantly impacted rural areas and the people who live there causing enormous economic and social disruptions that may have lasting effects on employment, income, and working conditions. While significant research has examined the relationship between COVID-19 and a range of socio-economic factors, the majority of these studies focus on urban centres. Rural and small communities differ from their urban counterparts - their demographics, their sectoral employment trends, and their isolation all require contextually appropriate policies to be developed to ensure that their impacts are effective and reflective of local realities. Rural proofing is a commitment by government to review and examine all public policy to ensure it does not disadvantage rural areas. This presentation uses socio-economic data collected from a quantitative survey (N = 28,000) distributed across nine rural counties in Ontario, Canada to highlight how COVID-19 impacted rural and small communities. Results highlight the need to ensure that adequate inclusion of rural and small communities occur when policies, program, and plans are developed to support the long-term resiliency of these areas. Results can be used to inform and expand the dialogue around small and rural communities, planning, and how effective data collection can, and should, inform rural planning.

Citations

- Kevany, K., Jones-Bitton, A. 2020. Rural Mental Health During COVID-19, Rural Insights Series: COVID-19, Canadian Rural Revitalization Foundation. <http://crrf.ca/ri-mentalhealth/>
- Kumar, A., & Nayar, K. R. (2021). COVID 19 and its mental health consequences. *Journal of Mental Health*, 30(1), 1-2.
- Lawley, C. (2020). Potential impacts of COVID-19 on Canadian farmland markets. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, 68(2), 245-250.
- Rich, K., Bollman, R., Dale, J., Kevany, K., Hall, H. (2021). Introduction. In *State of Rural Canada 2021: Opportunities Recovery, and Resiliency in Changing Times Report* (pp. 4-11). Canadian Rural Revitalization Foundation. ISBN 978-1-7774023-2-7.

Key Words: Rural Planning, COVID-19, Mental Health, Rural Proofing

DYNAMICS OF URBAN SHRINKAGE: THE GERMAN EXPERIENCE OF INDUSTRIAL REFORM AND URBAN REGROWTH

Abstract ID: 1555

Individual Paper Submission

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Backgrounds

Bremerhaven and Rostock are two German cities with strong identities as seaports. They also exemplify extreme cases of industrial reform during the shipyard crisis [Werftenkrise] of the late twentieth century. Bremerhaven, the former FRG (Federal Republic of Germany) city, has suffered from consistent population decline. In contrast, although the population in the former GDR (German Democratic Republic) city of Rostock also shrank after Reunification, it has been growing again since the early 2000s. Urban shrinkage is a dynamic process affected by many factors at different spatial levels (Haase et al., 2014, pp. 1524-1525). Even within one specific national context, each city faced a wide range of varied circumstances. As a result, urban shrinkage must be studied within each locality's specific historical

trajectory and alongside the factors affecting that city (Wiechmann and Pallagst, 2012, p. 278; Haase et al., 2021, pp. 8-9). Furthermore, the history of urban shrinkage itself should be studied by engaging multiple theoretical frameworks concerning multilevel governance, urban regrowth, and more.

Research Approach

Many prominent scholars, including Haase (Haase et al., 2014; Haase et al., 2021), Beauregard (2009), Bernt (2009), Wiechmann and Pallagst (2012), have studied the shrinkage in different national contexts. However, a lack of understanding persists about how local dynamics, comprised of diverse factors and variegated contexts, have guided individual cities to specific, varied, outcomes. This study's aim is to understand how Bremerhaven and Rostock each addressed its population losses and urban decline, the factors driving each city's approach, and the outcomes. This study explores the narratives of shrinkage in both Bremerhaven and Rostock through contrasting analysis, a heuristic model comprised of four main features and the interrelatedness among them: drivers, impact, and responses at the national and local levels. The two cities' population and economic development are explored alongside their planning strategies, both quantitatively and qualitatively.

Findings

The study shows that federally funded projects played a key role in addressing urban problems (e.g., abandoned estates) in both Bremerhaven and Rostock. However, the way in which local actors leveraged both external opportunities (e.g., state funding) and internal resources (e.g., civic leadership) varied. Another difference between two cities was in local actors' understanding on urban revitalization, economic regeneration, and the interplay between them. It was this divergence, both in understanding and in approach, that brought about significantly different results in community engagement and innovation. The study contributes to enhancing our understanding of the local dynamics of urban shrinkage and regrowth, specifically in medium-sized cities under industrial reform. Despite the generalisability being limited to some extent, the paper provides insights to scholars and local actors at different levels dealing with urban decline and 'restructuring'.

Citations

- Beauregard, R. (2009). Urban Population Loss in Historical Perspective: United States, 1820–2000. *Environment and Planning A*, 41(3), 514–528.
- Bernt, M. (2009). Partnerships for Demolition: The Governance of Urban Renewal in East Germany's Shrinking Cities. *International Journal of Urban and Regional Research*, 33(3), 754–769.
- Haase, A., Rink, D., Grossmann, K., Bernt, M., & Mykhnenko, V. (2014). Conceptualizing Urban Shrinkage. *Environment and Planning A*, 46, 1519–1534.
- Haase, A., Bontje, M., Couch, C., Marcinczak, S., Rink, D., Rumpel, P., & Wolff, M. (2021). Factors driving the regrowth of European cities and the role of local and contextual impacts: A contrasting analysis of regrowing and shrinking cities. *Cities*, 108, 1–11. <https://doi.org/10.1016/j.cities.2020.102942>.
- Wiechmann, T., & Pallagst, K. M. (2012). Urban shrinkage in Germany and the USA: A Comparison of Transformation Patterns and Local Strategies. *International Journal of Urban and Regional Research*, 36(2), 261–280.

Key Words: urban shrinkage, urban regrowth, German cities, local trajectories

THE ROLE OF CO-WORKING SPACES IN SHRINKING CITIES: THE CASE OF SOUTH KOREA

Abstract ID: 1557

Individual Paper Submission

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In recent years, the rising number of co-working spaces has been an urban phenomenon that reflects the trends in a knowledge-based economy where work can be performed independently. The needs of knowledge-based workers are fulfilled in a community, sharing know-how and skills as well as a physical space. This lays the foundation of a sharing economy. The widespread idea of co-working spaces has brought about successful urban regeneration. Co-working spaces also offer efficient access to whatever the users need, including legal and financial advice. These collaborative spaces contribute to job creation, the reuse of former industrial buildings, the development of creative districts, the transformation of public spaces and the attraction of other types of activities in urban areas.

Coworking spaces have been developed mainly in larger cities and thus little is known about how they work in small and medium size shrinking cities. This paper seeks to address this gap in the literature by exploring what roles co-working spaces can play in such cities with sparse entrepreneurial environments. To answer this question, this paper aims to provide an empirical exploration of the roles of co-working spaces in those cities in South Korea (hereafter Korea) by collecting and analyzing both qualitative and quantitative data.

Korea has seen an increase in the number of shrinking cities, resulting from population loss, economic downturn, employment decline and social problems. The main drivers of shrinkage are structural-demographic shifts, economic restructuring and deindustrialization. These shrinking cities face great difficulties in coping with the process of change. Policy responses have been to promote entrepreneurial environments by creating the hard infrastructure specifically designed to support appropriate soft infrastructure. Developing co-working spaces for young entrepreneurs and highly skilled workers is one of these policy responses.

In order to understand the roles of co-working spaces, a five-month study (October 2021 – February 2022) of co-working practices in twelve small and medium size cities (less than 300,000 population) was conducted using two interrelated methods: 1) an online survey with users of co-working spaces in their 20s and 30s and 2) semi-structured interviews with managing staff of co-working spaces. Based on this study, this paper concludes that co-working spaces in shrinking cities play the following four roles, which were proposed by the study of Nakano et al. (2020): 1) Infrastructure Provider: the quality of the infrastructure, the atmosphere they create and the image they project are important 2) Community Host: they foster social interaction, which is important not only for autonomous professionals and freelancers but also for the existing residents and the (potential) migrants from bigger cities, as they can often experience isolation, lack of social contact and friendship 3) Knowledge Disseminator: they provide training sessions, workshops, lectures and courses, and business tutoring to increase the success and survival rate of businesses in the local area and 4) Local Coupling Point: they provide reference spots where different actors converge to look for specific resources, services and interaction.

Co-working spaces in shrinking cities in Korea are intermediary organizations, which are believed to bring innovation and economic development, in addition to social engagement. Increasing numbers of talented workers are choosing to congregate and co-locate in cores of shrinking cities where co-working spaces are actively playing their roles. The more roles they play, the greater their impact to users, neighborhoods and cities. However, urban policies and regulations in Korea have not clearly defined what co-working spaces are and what roles they play in creating social and economic impact. This lack of policy and legal framework can create uncertainty and discourage initiatives, including the financial and institutional support necessary to sustain the activities of co-working spaces.

Citations

- Buksh, B. and Mouat, C. M. (2015) Activating smart work hubs for urban revitalization: evidence and implications of digital urbanism for planning and policy from South-East Queensland. *Australian Planner*, 52(1): 16-26.
- Katz, B. and Wagner, J. (2014) *The rise of innovation districts: A new geography of innovation in America*. Metropolitan Policy Program. Washington D.C.: Brookings.
- Leigh, N. and Blakely, E. (2017) *Planning local economic development: Theory and practice*. 6th ed. Thousand Oaks: SAGE Publications Ltd.
- Nakano, D., Shiach, M., Korla, M., Vasques, R., Gomes dos Santos, E., and Virani, T. (2020) Coworking spaces in urban settings: Prospective roles? *Geoforum* 115: 135-137.

Key Words: Co-working Spaces, Urban Regeneration, Small and Medium Size Shrinking Cities, South Korea

THE NEW URBAN REGION: RACE, SOCIOECOLOGY, CLIMATE JUSTICE

Abstract ID: 1655

Individual Paper Submission

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The problem of climate change and the interconnected nature of the urban ecological-infrastructure watershed raise critical questions about race, space, socioecological systems, and justice. In and around cities, disparate urban environmental outcomes have long been tied to systemic racism (Pulido 2000; Holifield 2001). More recent efforts to “green” or protect once neglected urban spaces can often displace poor communities of color pushed to vulnerable sites by prior waves of racist and exclusionary urban development (Gould and Lewis 2017; Anguelovski et al. 2019). Such outcomes are set to be exacerbated as climate change becomes more urgent and city and regional governments rush to take action.

How might urban researchers and planners conceive of more racially just and climate just cities? The most promising approaches to resisting both the impacts of climate change and unjust actions in response are those that are politically organized from the viewpoint of systemically marginalized groups (Routledge et al. 2018; Agyeman et al. 2016), crucial when making claims of justice against structural oppression. But such community-based organizing is more often in opposition to large-scale urban environmental initiatives, including climate actions, precisely because of histories of systemically racist and unjust development. Such conflicted claims on space are fights for recognition of communities across multiple sites and temporalities (Goh 2019, 2020a, b). The concept of the region appears to have

potential as the most appropriate scale of inquiry and action to understand and address such conflicting claims. Regional approaches, as such, promise the possibility of larger-scale knowledge and action. But, even as a long-studied topic in planning, it is an ill-defined concept, caught between biophysical understandings of space and vague allusions to a territory larger than the municipal entity.

In this paper, I build a new theory of the urban region. I trace a theoretical pathway from formative ideas of the urban ecological region (MacKaye 1940) through three more recent, distinct concepts – Forman (1990)’s urban ecological science-determined region, Gandy’s (2002) urbanized-natural watershed, and Woods’ (1998) historically and racial power-constructed region – and extend it through to emerging discourses of abolitionist and intersectional climate justice (Ranganathan and Bratman 2019; Amorim-Maia et al. 2022). I take seriously biophysical, material conditions of the urban region as well as historically-specific, temporal, racialized spatial injustices to propose a conceptual framework for a racially just and climate just urban region.

The paper illustrates the concepts through an empirical discussion of the early 21st Century Los Angeles urban region, following flows of water, people, processes of urbanization, and ideologies of urbanism. It shows how a revived and revised regional approach illuminates the interrelationships between historical injustices and present climate change imperatives. The paper concludes with theoretical and methodological research agendas for planning the urban region that conjoin biophysical change with historical sociocultural formations.

Citations

- Agyeman, Julian, David Schlosberg, Luke Craven, and Caitlin Matthews. 2016. “Trends and Directions in Environmental Justice: From Inequity to Everyday Life, Community, and Just Sustainabilities.” *Annual Review of Environment and Resources* 41.
- MacKaye, Benton. 1940. “Regional Planning and Ecology.” *Ecological Monographs* 10 (3): 349–53.
- Gandy, Matthew. 2002. *Concrete and Clay: Reworking Nature in New York City*. Cambridge, Mass: MIT Press.
- Woods, Clyde Adrian. 1998. *Development Arrested: The Blues and Plantation Power in the Mississippi Delta*. London; Brooklyn, NY: Verso.
- Ranganathan, Malini, and Eve Bratman. 2019. “From Urban Resilience to Abolitionist Climate Justice in Washington, DC.” *Antipode*. <https://doi.org/10.1111/anti.12555>.

Key Words: urban region, urban watershed, racial justice, climate change, urban ecology

UNCOVER DISPARITIES OF COVID-19 OUTBREAKS IN THE U.S. MEGAREGIONS BASED ON CRITICAL SOCIOECONOMIC AND PUBLIC HEALTH INDICATORS

Abstract ID: 1695

Individual Paper Submission

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The Novel Coronavirus (COVID-19) transmission rate has been found by scientists to surpass any similar disease in history. On January 22nd, 2020, the first Novel Coronavirus Disease (COVID-19) case in the United States was reported in Cook County, Washington. On March 1st, 2020, the reported number of confirmed cases in the U.S. was 53. However, since then, the situation deteriorated so drastically, the pandemic outbreak began to expand from some counties in Washington, New York, and California to other places in the country. By the end of May 2020, over 1.7 million had been infected and more than a hundred thousand people died due to COVID-19 related issues in the U.S.

The proposed study aims to uncover the disparities of early COVID-19 outbreaks by identifying the critical socioeconomic and public health indicators in the U.S. megaregions. In particular, we will categorize the counties based on the population sizes of their affiliated Core-Based Statistical Areas (CBSAs) in order to discuss the indicators in different regional contexts. We will then apply a multilevel mixed-effect modeling approach to the weekly COVID-19 data to answer the following three research questions: RQ1: Did counties in large CBSAs (population > 1 million) experience higher and more rapid COVID-19 outbreaks in the U.S. Megaregions? RQ2: What socioeconomic and public health factors played more important roles in explaining the variations of COVID-19 outbreak for major metropolitan counties vis-à-vis for others? RQ3: How do the disparities vary across different megaregions?

The empirical results in the Northeast Megaregion showed that major metropolitan counties experienced a statistically significantly higher initial outbreak level but the spread speed was the same as their counterparts. The results also showed that socioeconomic characters played a more important role than public health indicators in reducing unexplained variances of outbreaks. Population density, GDP, income inequity, and the proportion of people in poor health were positively related to initial outbreaks. Notably, the proportion of the poor population was negatively associated with the initial outbreak level but positively with the spread speed.

Citations

- RPA. (2006). *America 2050: A Prospectus*. New York: RPA.
- Adler, P., Florida, R., & Hartt, M. (2020). Mega Regions and Pandemics. *Tijdschrift Voor Economische En Sociale Geografie*, 111(3), 465–481. <https://doi.org/10.1111/tesg.12449>
- Ross, C., Woo, M., & Wang, F. (2016). Megaregions and regional sustainability. *International Journal of Urban Sciences*, 20(3), 299–317. <https://doi.org/10.1080/12265934.2016.1189846>
- Fraiberger, S. P., Astudillo, P., Candeago, L., Chunes, A., Jones, N. K. W., Khan, M. F., Lepri, B., Gracia, N. L., Lucchini, L., Massaro, E., & Montfort, A. (2020). Uncovering socioeconomic gaps in mobility reduction during the COVID-19 pandemic using location data. *ArXiv:2006.15195 [Physics]*. <http://arxiv.org/abs/2006.15195>
- Flynn, J., Slovic, P., & Mertz, C. K. (1994). Gender, Race, and Perception of Environmental Health Risks. *Risk Analysis*, 14(6), 1101–1108.

Key Words: COVID-19, Megaregions, Social Justice, Regional Planning

RESEARCH ON THE STRUCTURE AND CHARACTERISTIC OF REGIONAL CITY NETWORK FROM THE PERSPECTIVE OF SPACE OF FLOWS – TAKE GUIZHOU PROVINCE IN CHINA AS AN EXAMPLE

Abstract ID: 1722

Individual Paper Submission

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In the 1990s, Manuel Castells (1996) proposed the theory of Space of Flows, believing that various types of flows have built our society and created a global city network system. Cities cannot exist independently in the network, and are increasingly interfered by flow factors. This theory has changed the research perspective of regional city research, and it has gradually shifted from the static space inside the city to the dynamic connection outside the city.

Guizhou province, which is powerful support for China's western development strategy, is selected as the main research object. From the perspective of Space of Flows, this paper explores the regional city network from population flow connection (physical connection) and economic flow connection (non-physical connection) by mainly using mobile signaling migration data and enterprise big data. The former data can well reflect the temporal and spatial law of crowd flow behavior, to represent the links and dependence of society, business, and travel between cities, and the data was obtained from China Unicom in December 2019. Enterprises are the direct actors of economic links between cities (Taylor and Derudder, 2004), and the analysis method based on enterprise big data is the mainstream method to represent the economic links between cities (Derudder, 2004). Enterprise data was obtained from the database of Chinese industrial and commercial enterprises in December 2018. Firstly, refers to the method of Rozenbla and Pumain(2007) to build a city network model with enterprise ownership and refers to the method of Kai YAO and Xinyi NIU(2015) to build another city network model with population mobility. Secondly, calculate the core measurement indicators including network link degree, centrality degree, etc of the networks to evaluate the characteristics of the network.

The following conclusions can be drawn from this study: 1) The overall pattern of the city network in Guizhou Province presents a multi-level Core-Periphery structure. Within the province, Guiyang, the provincial capital, is the core and other regions are the peripheries, showing the dominant role in the economic links of enterprises in the province; Within the area, a network structure with regional central cities as the core and surrounding cities and towns as the peripheries is mainly formed. At the same time, from the perspective of population flow, it can be found that Guizhou Province presents the characteristics of initial networking. 2) Compared with the higher enterprise network link degree between Guiyang and Zunyi, the link degree of population flow is lower, which shows that Guiyang and Zunyi, as the top two cities in Guizhou Province, have formed a strong economic link, but the actual population flow needs to be strengthened. 3) The network hinterland of Guiyang covers the whole province, but the network hinterland of Zunyi is mainly concentrated in its city and has not had a radiation effect on other areas of the whole province. At the same time, while receiving the radiation of Guiyang, other regional central cities also play a leading role in the surrounding small and medium-sized cities and towns.

With the continuous promotion of regional coordination strategy, the cooperation between cities has been strengthened. As the main platform, megapolitan clusters and metropolitan areas composed of multiple cities and towns gradually replace individual cities to participate in global competition, and their internal will inevitably form a close and reasonable city network. Then, how identifying the city network and related characteristics has become the key point. This study will help to identify and understand the characteristics of city networks from Space of Flows and their importance to regional coordinated development, aiming at providing a reference for relevant similar research

and decision-making.

Citations

- Castells, M. (1996). The space of flows. The rise of the network society, 1, 376-482.
- Taylor, P., & Derudder, B. (2004). World City Network: A Global Urban Analysis. *International Social Science Journal*. 31(4):641-642.
- Derudder, B. (2007). The mismatch between concepts and evidence in the study of a global urban network. *Cities in globalization. Practices, policies, and theories*. London, 261-275.
- Rozenblat, C., & Pumain, D. (2007). Firm linkages, innovation, and the evolution of urban systems. *Cities in Globalization: Practices, policies, theories*, 130-156.
- YAO Kai, NIU Xinyi. (2015) Practical Analysis of Mobile Phone Signaling Data in Urban System Planning: A Case Study of Nanchang Metropolis. *Shanghai Urban Planning Review*. 91-97.

Key Words: Space of Flows, City Network, Guizhou Province, Population Flow, Economic Flow

IDENTIFYING CULTURAL CONNECTEDNESS AT MEGAREGION-LEVEL WITH NETWORK APPROACH: CAN CULTURAL HERITAGE DISTRIBUTIONS REFLECT CULTURAL REGIONS?

Abstract ID: 1804

Individual Paper Submission

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Megaregions are interconnected clusters of metropolitan areas and their surrounding hinterlands, linked through physical ties, and shared environmental concerns as well as social, cultural, and economic ties (Ross & Woo, 2011). In the US, federal institutions and multiple state governments address megaregions as an important planning unit. Nevertheless, little attention has been focused on planning for megaregions. One of the major obstacles is identifying, or delineating megaregions. The delineations of megaregions to date have several shortcomings, and in particular, they neglect cultural identity. In the literature, cultural identity is part of the attributes that should help define megaregions. For instance, both Regional Plan Association (2009) and Ross & Woo (2011) included cultural connection as a constituent element of megaregions. While it can be important in understanding the trajectory of functional connectivity and future connectedness of megaregions, cultural connections have been mostly overlooked.

Culture has implications for megaregions from at least three aspects. Cultural similarities provide amalgamation that can serve as the basis for cooperative action (ACIR, 1972). Culture is also one of the elements that comprises regional identity - where regional identity is considered a way to strengthen the regional competitiveness of political regimes. Lastly, culture can be represented by similarities of material objects and other artefacts that are derived from it. These include development patterns, planning frameworks, institutional settings, and landscape. Thus, places that share cultural identity or have cultural connections are likely to have more coherency in the region. In aggregate, we seek to determine how shared cultural identity and connections among places can be a meaningful way of identifying areas that have similar planning characteristics.

Cultural traces “function as connections, tying the meaning of places to the identity of the cultural groups that make them” and “tie cultures and geographies together, influencing the identity of both” (Anderson, 2009: 5). Further, as Weaver & Holtkamp empirically found, “heritage traces play an important role in shaping the geographies of contemporary cultural region” (Weaver & Holtkamp, 2016: 218). This study seeks to determine how cultural traces, such as cultural heritages, can reflect common identities and connections among local areas. The hypothesis is that cultural traces can be considered as nodes that connects different geographies, places, and groups under a common cultural identity.

In this study, we use a network science approach to identify regions that are connected by similar cultural identities in the contiguous US. There are 70,000 registered historic places recorded in the National Archives Catalogue. The records provide information on historic places; including, the place's name, location, areas of significance, and architectural classifications. The study will use architectural classification as a cultural attribute that materializes cultural identity. Using these data, we construct bipartite network that consists of two types of nodes - counties and cultural identity. The presence of cultural heritages in a county will allow the research to define boundaries or edges. The edges will be weighted by proportion of cultural identity reflected by cultural heritages in a particular county. With the constructed network, we will apply community detection algorithms to figure which areas are tightly connected and form cultural regions.

This study contributes to the literature in several ways. First, it uses an empirical approach to delineate cultural regions at the national level, unlike the studies on a particular region. Further, unlike prior studies that predefine regional cultural identities and mapping traces, we conceptualize cultural region as networked areas that share

similar cultural identities. Further we use a relational approach, without predefined culturally predefined regions. Lastly, this study will test the applicability of cultural heritage distribution in identifying cultural regions.

Citations

- Advisory Commission on Intergovernmental Relations, 1972. Multistate Regionalism: A Commission Report. D.C.
- Anderson, J. (2009). *Understanding Cultural Geography: Places and Traces* (1st ed.). London, UK: Routledge.
- Hagler, Y. (2009). Defining US Megaregions. *America 2050*, Regional Planning Association, 8. <https://s3.us-east-1.amazonaws.com/rpa-org/pdfs/2050-Paper-Defining-US-Megaregions.pdf>
- Ross, C.L. & Woo. M. (2011). Megaregions and Mobility. *The Bridge*, 41(1), 27-34. <http://www.nae.edu/Publications/Bridge/43180/43293.aspx>
- Weaver, R., & Holtkamp, C. (2016). Determinants of Appalachian Identity: Using Vernacular Traces to Study Cultural Geographies of an American Region. *Annals of the American Association of Geographers*, 106(1), 203–221. <https://doi.org/10.1080/00045608.2015.1090266>

Key Words: Cultural region, Cultural identity and heritage, Bipartite network analysis, Community detection, Megaregion

ARE HOUSING NEEDS ASSESSMENTS THE RIGHT AFFORDABLE HOUSING TOOL IN WEAK PLANNING STATES?

Abstract ID: 1903

Individual Paper Submission

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In response to the housing affordability crisis, this study looks at an alternative approach to the regional housing needs assessment and allocation process in states with weak planning regulations. In weak planning states, like Colorado and 35 others, local planning is optional, making mandatory allocations difficult or impossible to enforce. The study focuses on Metropolitan Denver, CO, a region experiencing a massive housing crisis. Through a forensic mixed-methods analysis, the research attempts to identify the causes and consequences of the crisis, and evaluate a combination of advisory, funding, design, and planning strategies that would result in greater production of market rate and subsidized affordable housing, in the absence of strong planning requirements.

Regional Housing Needs Assessments, or RHNAs, are often identified as a first step in addressing a housing crisis. RHNAs are planning processes to estimate how many housing units each jurisdiction will need given household growth and emerged in the context of residential desegregation efforts in 1968 (Ramsey-Musolf, 2017). By mandating all cities plan for affordable housing to receive federal urban renewal funds, Congress attempted to nudge cities towards desegregation, if not by race, then by class. Since then, RHNAs have largely remained a toothless suggestion (Ramsey-Musolf, 2017). Even in the most progressive “strong planning” areas of the country, however, those cities that do submit a RHNA to HUD rarely meet their housing allocations (Bertrand, 2020). The barriers to affordable housing production are not about identifying the need. They are mostly tied to cost of construction, permitting, zoning, environmental review, but also to local political will of the municipalities, and “not in my backyard” (NIMBY) and racist politics of affluent residents (Forbes, 2007; Karki, 2015).

Across the U.S., other state level policies have also attempted to eliminate barriers to affordable housing. California’s recently passed laws to enforce affordable housing production, and limited its environmental law, CEQA. “Smart growth” policies have also attempted to promote more market affordable housing, but with mixed results. While some have persuaded developers to produce a small share of affordable units, the units rarely provide opportunities for wealth building through ownership. Furthermore, such inclusionary zoning and smart growth efforts have been critiqued for their tendency to catalyze or exacerbate gentrification pressures (Larsen, 2005; Rayle, 2015). These affordability issues are not inherent to denser housing but may be inherent to neoliberal frameworks that tend to frame policies around real estate interests rather than resident needs (Rayle, 2015; Christophers, 2014). The Denver metro area housing crisis reflects aspects of all these challenges.

Through content analysis of 25 local housing plans and local news reports, as well as 20 years of detailed permit data, parcel level data, and zoning, this study evaluates barriers to affordable housing development across the region. Metro Denver’s unhoused population has more than doubled since 2016, and nearly 400,000 households are housing cost burdened. Further, impacts are disproportionate across race and ethnicity, with Black residents four times, and Latinx or Indigenous residents ten times more likely to experience homelessness than White residents.

Through the planning documents analysis, we find that rather than alleviate the affordable housing crisis, planning processes frequently contribute to the problem by discouraging affordable housing, under-estimating housing need, and incentivizing higher-income detached single-family housing.

As the federal government allocates more housing funds than it has in decades, it is crucial cities have funding for community engagement and the necessary planning processes to adopt zoning changes. Funding housing needs assessments is a minor first step. Deep community engagement and technical planning processes will be necessary to change the planning and zoning that heretofore was used to exclude the identified needed housing.

Citations

- Karki, T. K. (2015). Mandatory Versus Incentive-Based State Zoning Reform Policies for Affordable Housing in the United States: A Comparative Assessment. *Housing Policy Debate*, 25(2), 234–262. <https://doi.org/10.1080/10511482.2014.917691>
- Rayle, L. (2015). Investigating the Connection Between Transit-Oriented Development and Displacement: Four Hypotheses. *Housing Policy Debate*, 25(3), 531–548. <https://doi.org/10.1080/10511482.2014.951674>
- Ramsey-Musolf, D. (2017). State Mandates, Housing Elements, and Low-income Housing Production. *Journal of Planning Literature*, 32(2), 117–140. <https://doi.org/10.1177/0885412217693569>
- Bertrand, A. (2020). Proxy War: The Role of Recent CEQA Exemptions in Fixing California's Housing Crisis. *Columbia Journal of Law & Social Problems*, 53(3), 413–460.
- Frick, K. T., Chapple, K., Mattiuzzi, E., & Zuk, M. (2015). Collaboration and Equity in Regional Sustainability Planning in California: Challenges in Implementation. *California Journal of Politics and Policy*, 7(4), 0_1,0_2,1-25. <http://dx.doi.org/10.5070/P2CJPP7428924>

Key Words: affordable housing, housing needs assessments, housing allocation, regional housing, exclusionary zoning

ACCESS TO FOOD AND EMPLOYMENT IN THE TOWN OF TERRY MISSISSIPPI

Abstract ID: 1981

Individual Paper Submission

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There is a beautiful rural town in Mississippi called Terry in Hinds County. A population of 1,286 people as of 2019. This research is to conduct a survey for the people in town to see the distance that they must travel to work, for social activity, and to get food.

Secondary data already sheds light to the food insecurity aspect of this project. Food insecurity is a pervasive and serious issue facing many countries in the world and the United States is no different. No state is more familiar with hunger than Mississippi. For the past eight years, Mississippi has been the hungriest state in the country according to the CDC (2017) and State of Childhood Obesity (2020). Currently, 20% of the population (600,000 people), in the state that are considered to be in food insecure areas, including 1 in 4 children. The state is estimated to need an additional 300 million more per year to be able to meet the state's need. Mississippi has 34 of 82 counties having a food insecurity rate higher than 22%.

At the county level, Mississippi also has the highest rates of food insecurity in the nation. Issaquena County has a food insecurity rate of 40%, while Jefferson County has a 36% food insecurity rate. There are more people that are food insecure in Hinds County (61,000) than the entire state of North Dakota (55,000). As is the case with the entire country, food insecurity rates are much higher in Mississippi's rural areas than they are in urban areas due to the lack of resources to be able to attain food. Rural counties in the South that have a population of 20,000 or more that are not near metropolitan areas have a food insecurity rate of 18%, while urban counties in the Northeast region of the country have only a 10%.

Areas in Mississippi that are without access to food are more likely to be by populated by African Americans, Hispanics, and other ethnic groups. Out of the 670,000 recipients of SNAP in Mississippi, 61% are African American. Of the 63 counties that are considered to be food deserts in Mississippi, 31 of the counties have a population of African Americans of over 40%, with 22% of the counties having a population of 50%.

With information being readily available on food insecurity in the state there is not enough data to show how on average how much this town travels for work. The Average for the county is 23 minutes.

Peter Calthorp (2017) Urban Designer gave a speech, titled "7 principles for building better cities" and listed them as:

1. Preserve
2. Mix
3. Walk
4. Bike
5. Connect
6. Ride-

1. FocusThe purpose of this research to collect data on travel habits of the citizens of Terry Mississippi. Data will be collected using a questionnaire. The survey will be administered to all residents living in Terry over the age of 18 years of age and who voluntarily agree to take the survey.

On average how far do you have to travel for work?

- o. How far do you to travel for food?
1. How far do you have to travel for school?
2. How far do you have to travel for social activity?
3. Can you walk to any of these places from your home?

In closing this research will focus on the traveling time citizens of Terry Mississippi take to purchase food and to work. This data will be collected via survey of willing participants 18 years and older. The goal of this research is to find solutions needed specifically to this area.

Citations

- CDC (2017)
- State of Childhood Obesity (2020)
- Peter Calthorp (2017)

Key Words: Citizen Participation

ECONOMIC RESILIENCE AND RECOVERY IN THE U.S. GREAT LAKES REGION: A SOCIOECONOMIC AND TRANSPORTATION INFRASTRUCTURE FRAMEWORK

Abstract ID: 2043

Individual Paper Submission

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The EDA introduced the need to incorporate economic resilience as one of the elements in the Comprehensive Economic Development Strategies (CEDS) process following the Great Recession from December 2007 to June 2009. The Great Recession originated with the crash in housing markets and financial institutions, but unprecedented job losses happened in manufacturing and construction industries (Gallagher, Hoang and Keil 2019). Scholars argue that these industry sectors have yet to recover from the loss of low-skilled jobs, which were ultimately replaced by higher-skilled positions. Many of the displaced workers found themselves having to change industries and/or occupations (Kalleberg and Wachter 2017). Another feature of the Great Recession was that the impacts were disproportionate by gender, educational level, race, ethnicity, and household wealth. Additionally, the effects of the Great Recession were different across geographical regions of the U.S.

As such, this project delved into economic resilience and capacity for recovery of the regions with an emphasis on the regional transportation and infrastructure elements in addition to socioeconomic factors. Resiliency remains an idealized characteristic that regions aspire to achieve and is typically a less common attribute of many regions. The ability to recover from a shock shows the “rebound capacity” of the region, and regions aspire to recover quickly from the economic shocks. The ability to avoid the shock completely shows the “predictive and adaptive capacity” of the region. Such regions develop capacity for risk, vulnerability assessments, and agile strategy building techniques to reconfigure the regional economies. In a real context, regions might have some level of “absorbing, rebounding, and adaptive” traits but only a limited capacity to build economic resilience and steer away from economic shocks. Note that economic recessions or shocks can occur in addition to the structural changes happening in the regional economies. Structural transformation or change represents the long-term movement of production and labor from

agriculture to manufacturing to services experienced in many global and regional economies (Neuss, 2019). Hence, recessionary shocks might cause additional changes to the industrial and occupational compositions of the regions undergoing structural shifts. However, regions usually employ performance measures such as unemployment rate, jobs openings, among others. These metrics remain suitable to capture only the short-term economic recovery, and not suitable to capture structural, social and economic shifts.

This presentation will outline the results of the the significant socioeconomic and physical infrastructure factors that may influence the economic resilience capacity of regions and contribute to the maintenance and expansion of robust regional economies. In particular, the key research questions we examined were as follows: (1) What is the definition of regional economic resilience? (2) What socioeconomic and infrastructure variables are significant contributors to economic resilience? And, (3) What are the major socioeconomic and physical concepts, or combinations of variables, that can advance the economic resilience of a region? The project employs the community capitals framework (Flora & Flora, 2013) and the structural economic concepts to interrogate regional economic resilience. This research offers a data dashboard tool, community insights into the nature of regional economic resiliency, and how resiliency concepts may best be incorporated into a CEDS.

Citations

- Flora, C.B. and J.L. Flora. 2013. *Rural Communities: Legacy and Change*, 4th Edition. Boulder, CO: Westview Press.
- Gallagher, Eamon, Bach Hoang, and Manfred Keil. 2019. Sectoral Shifts in the U.S. Economy During and After the Great Recession. *Lowe Institute of Political Economy*. <https://www.lowe-institute.org/wp-content/uploads/2019/06/White-Paper-2-Final.pdf>. Accessed on August 13, 2021
- Kalleberg, Arne L., and Till M. Von Wachter. 2017. The U.S. Labor Market During and After the Great Recession: Continuities and Transformations. *The Russell Sage Foundation Journal of the Social Sciences*. Vol. 3 (3), pp. 1-19.
- Nuess, Leif van. 2019. The Drivers of Structural Change. *Journal of Economic Surveys*. Vol. 33, No. 1, pp.309-349.

Key Words: economic resiliency, regional resilience, infrastructure resilience

AN ASSESSMENT OF THE LAND USE CHARACTERISTICS IN SHRINKING CITIES; A SPATIO-TEMPORAL SIMULATION AND PREDICTION OF URBAN DECLINE IN SOUTH KOREA

Abstract ID: 2049

Individual Paper Submission

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Urban decline is one of the significant concerns of the urban world because of its continuous expansion from the 1990s and vicious cycle. In 2016, McKinsey Global Institute reported that the population is likely to decline in 17% of large cities in developed regions and 8% of cities worldwide from 2015 to 2025 due to declining fertility rates and urban flight. Until recently, the urban decline was considered as an old-industrialized country phenomenon, but it has become an alarming global problem with no limit to country, region, and culture (Martinez-Fernandez et al., 2017). Unfortunately, despite the continuous urban decline, many cities still chase growth-oriented planning due to the inability to accurately predict future urban decline patterns (Lee & Newman, 2017).

South Korea is no exception. After the exponential state-led urban growth from the '70s, public services and infrastructures have been concentrated in large cities. An imbalance in regional planning resulted in persistent migration into dominating cities, rapid aging of local communities, and diminishing opportunities for economic activities in suburbs, all of which has led urban shrinkage (Joo, 2018). From 2005 to 2015, 74 cities out of 229 have been identified as shrinking cities on the verge of extinction, and 76 have been identified as stagnant cities (Choi & Park, 2020)

The spatial phenomenon of the shrinking cities has long been studied. One of the main veins of those focused on the simulation and the prediction of the spatial extent of the shrinking cities in the future (Lee & Newman, 2017). Shared elements of shrinking cities are: consistent population loss, economic downturn, employment decline, and structural social problems as symptoms of structural crisis. (Martinez-Fernandez, et al. 2017). From a spatial perspective, all these shifts are considered to be reflected in the physical change of land use. Lee & Newman (2017) predicted shrinking cities by seeing changing patterns of vacant land as an indicator. Simulating Land Transportation Model and found out that mobility and the housing market is primary contributing attributes in declining.

While land use has been established and altered by human activities, it has not been widely used for simulating and projecting urban shrinkages. Distance to transportation, vacant lots, elevation, etc. have been mainly used to indicate

the decline areas. However, the driving potentials of these indicators do not fully reflect the interaction between factors and resulting in as low accuracy. A thoughtful understanding of land change patterns and related factors that interact with is a must in future simulation and prediction (Han et al., 2015).

Against this backdrop, the objectives of this study are 1) assessment of land use characteristics of shrinking and non-shrinking cities 2) identifying other variables that jointly explain the urban shrinkage with land use 3) predicting future land-use changes of 2040 with the historic data of population density per grid every five years, the price change of real estate, and the number of employees, from 2005 to 2020. The main data source is Korea census and the Ministry of land infrastructure.

Dyna- CLUE and Markov chain combined model is adopted for this research due to the characteristic of its spatio-temporal approach. Land-use models are optimal tools for analyzing the dynamics of land use. Models such as regression and cellular automata were widely used in previous researches. However, they displayed little relation with human activity-induced socioeconomic factors.

We hypothesize that when the socioeconomic value is incorporated as extra independent indicators, the accuracy and suitability of the shrinkage rate will score higher than just examining patterns of land-use changes

This research will provide the government with a better understanding of urban shrinkage's current status and help them plan sustainable countermeasures.

Citations

- Choi, J.-H., & Park, P. (2020). Regional characteristics of the shrinking cities in Korea and its implication toward urban policies. *Journal of the Korean Urban Geographical Society*, 23(2), 1–13. <https://doi.org/10.21189/jkugs.23.2.1>
- Han, H., Yang, C., & Song, J. (2015). Scenario simulation and the prediction of land use and land cover change in Beijing, China. *Sustainability*, 7(4), 4260–4279. <https://doi.org/10.3390/su7044260>
- Joo, Y. M. (2018). *Megacity Seoul: Urbanization and the development of modern South Korea*. Routledge.
- Lee, J., & Newman, G. (2017). Forecasting urban vacancy dynamics in a shrinking city: A land transformation model. *ISPRS International Journal of Geo-Information*, 6(4), 124.
- Martinez-Fernandez, C., Weyman, T., Fol, S., Audirac, I., Cunningham-Sabot, E., Wiechmann, T., & Yahagi, H. (2016). Shrinking cities in Australia, Japan, Europe and the USA: From a global process to local policy responses. *Progress in planning*, 105, 1–48.

Key Words: Shrinking cities, Urban decline, Land use land cover, Sustainable planning, Predictive modeling

Track 12 Posters

LONG COVID CENTERS: THE SPATIAL CLUSTER ANALYSIS

Abstract ID: 1842

Poster

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Over 3.2 million Americans are suffering from post-COVID symptoms, medically known as post-acute sequelae SARS-CoV-2 infection (PASC). Numbers of Long Covid (or Covid long-haulers) continue to grow, as approximately 25-35% of all individuals who contract the virus are still persistently ill in the post-acute phase (Long Covid Alliance, 2021). These Covid long-haulers struggle to regain their former level of health and may experience mental and physical impairments that substantially impact their quality of life and their ability to work.

Due to underreporting and underlying health care disparities, Black, Indigenous, and Persons of Color (BIPOC) communities may be disproportionately impacted by the devastation of Long Covid, and more likely to die as a result of their post-COVID symptoms. Women are also disproportionately affected by Long Covid.

In reviewing long covid centers, what strategies and approaches can be taken to ensure the proper placement of these centers when BIPOC communities are affected? We chose Cluster and Outlier Analysis (Anselin Local Moran's I) and Spatially Constrained Multivariate Clustering in the clustering analysis because the former analysis shows the hot and cold spots of Long Covid centers, and the later one presents the spatially contiguous clusters of Long Covid centers

based on a set of feature attribute values and optional cluster size limits.

In this poster, we present several long covid centers that range across the United States that support Long Covid patients. We also explore the idea of how to ensure that BIPOC communities are not disproportionately impacted as we improve the outcomes for all Long Covid sufferers.

Citations

- Amitay, Oved. (2021). Long Covid Alliance: What Is the LCA? Retrieved March 30, 2022, from www.solvecfs.org
- Berg, S. (2021). More resources needed to help millions living with “Long COVID.” American Medical Association. Retrieved February 12, 2022, from <https://www.ama-assn.org/delivering-care/public-health/more-resources-needed-help-millions-living-long-covid>
- Centers for Disease Control and Prevention. (2021). Caring for People with post-COVID conditions. Retrieved January 21, 2022, from <https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html>
- ESRI. (2022). Cluster and Outlier Analysis (Anselin Local Moran's I) (Spatial Statistics). Retrieved April 5, 2022, from <https://pro.arcgis.com/en/pro-app/2.8/tool-reference/spatial-statistics/cluster-and-outlier-analysis-anselin-local-moran-s.htm>
- ESRI. (2022). Spatially Constrained Multivariate Clustering (Spatial Statistics), Retrieved April 5, 2022, from <https://pro.arcgis.com/en/pro-app/2.8/tool-reference/spatial-statistics/spatially-constrained-multivariate-clustering.htm>

Key Words: Long Covid, Cluster and Outlier Analysis, Covid-19

Track 13 - Scholarship on Planning History or Planning Theory

Track 13 Pre-Organized Session Summaries and Abstracts for the Sessions

NAVIGATING PLANNING THEORIES

Pre-Organized Session 9 - Summary

Session Includes 1046, 1047, 1048, 1049, 1050

DAVOUDI, Simin [Newcastle University] simin.davoudi@newcastle.ac.uk, organizer

A recurring criticism faced by planning scholars is that their paper is 'under-theorized', 'lack theory' or make no 'theoretical contributions'. It appears that critics have a single entity in mind called 'theory' without being explicit about what that 'thing' is which they expect others to attend to. Far from being willful acts of dismissal, their assessments reflect the ambiguities of the concept of 'theory' itself and its contentious nature. Despite centuries of debates in physical, natural and social sciences, there is no commonly agreed view on: 'what is a theory'. This doesn't mean that we should abandon 'theory' from our planning lexicons. Nor does it mean that 'theory' refers to anything and everything. It rather highlights the existence of multiple meanings of 'theory' which remain in competition for legitimacy and dominance in planning literature. The session brings together diverse perspectives to explore different ways of navigating the complex maze of planning theories, unpacking their history, evolution and values, and offering more constructive peer reviews, better engagement with literature, and deeper understandings of planning theories.

Objectives:

- Deeper understandings of planning theories
- Better engagement with planning literature
- More constructive peer reviews

THEORIES OF WRITING AND WRITING PLANNING THEORY

Abstract ID: 1046

Abstract within Pre-Organized Session 9

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In this presentation, I will explore two themes related to the art of writing planning theory and will discuss these with regard to challenges for both making a contribution to planning theory for publication and for teaching planning theory to our students.

The first themes relates to 'freewriting', most famously argued for by Peter Elbow (1973). Students who set out to write an essay/coursework/dissertation are normally advised to prepare an outline structure of their work and to organise their work around this structure. Freewriting argues that often the process of writing is a creative process and as such freewriting without a structure is potentially more innovative. I will examine this debate in the light of writing planning theory.

Second, I will focus on the role of metaphors in writing theory. Metaphors have been argued to be both constructive and destructive in theory construction (Chettiparamb, 2006). I will review these debates and highlight some of the pitfalls and mistakes in using metaphors in theory construction, especially when metaphors are substituted for theory.

I will close by relating the above two themes to the challenge of making a contribution to planning theory for publication as well as the challenge of teaching planning theory to our students.

Citations

- Chettiparamb,A. (2006) Metaphors in Complexity Theory and Planning, *Planning Theory*. 5(1), 71-91.
- Elbow,P (1973) *Writing without teachers*. Oxford University Press: Oxford.

- Elbow, P (1989) Towards a phenomenology of Freewriting. *Journal of Basic Writing*, 8(2) 42-71.
- Jellema, P, Annemans, M and Heylighen, A (2022) Drawing the researcher into data: drawing as an analytical tool in qualitative research. *Qualitative research*. Online First, DOI: 10.1177/14687941221079530

Key Words: planning theory, freewriting, theory construction, creative process, metaphors

RE-ORGANIZING PLANNING KNOWLEDGE – TOWARDS A TOPOLOGY OF PLANNING THEORIES

Abstract ID: 1047

Abstract within Pre-Organized Session 9

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Spatial planning and its understandings are diverse, as are the theoretical perspectives that can be taken on it. Planning theories are not only partially and exemplarily selected in planning sciences, they are also an essentially anarchic undertaking: Criticism of existing approaches and of a missing foundation are more numerous than constructive contributions to further advancement. Theories, no matter how concrete or general, reflect different bodies of knowledge and are based on certain presuppositions and fundamental values (Barker/Kitcher 2014). In planning science, these are rarely made explicit and discussed (Alexander 2016: 94). In general, systematisations of theoretical approaches help to identify and relate essential differences but also commonalities of single theories. However, previous structuring approaches follow historical classifications and changes of planning understandings in time as well as the common distinction between substantive and procedural theories (Allmendinger 2017). This does not do justice to the knowledge inherent in planning theories (Davoudi 2015), nor does it help much in answering important questions and connections, especially to manage manifold challenges in the 21st century. Yet, how to navigate planning theories then?

In a theoretical approach based on philosophy of science, I contribute to a deeper understanding of planning knowledge: a topology of planning theories as re-organisation of planning knowledge. Numerous challenges, be it the impacts of climate change and adaptation and mitigation strategies, or societal polarisation and the question of appropriate decision-making, require a rethinking and reorientation of planning approaches. A first step in this direction is an inventory in which the existing planning knowledge, organised and validated in planning theories, is recorded and systematised. I present a "topology" of planning theories, a systematisation of planning theory approaches that is characterised neither by right nor wrong, but meets the scientific demands of a disciplinary foundation and integrates the collected knowledge from the field of spatial planning. The topology of planning theories is not based on a historical classification of planning theories. Instead of dealing with the genesis of the theories (an important, but also often accomplished procedure), the topology of planning theories deals with their validity. Accordingly, it focuses on the rationale of planning theories and their scientific position and resulting positions and insights. The division of the theories into their specific perspectives on reality(ies), present and future as well as normative orientations, which becomes visible through the topology, is an important part of this. This makes it possible to answer questions such as: Which understanding of planning does e.g. collaborative planning presuppose and which different forms of knowledge does this imply? What does the pragmatic planning approach mean in practice and which forms of knowledge are needed then? The result is a substantiated differentiation of planning theories in research and practice. Accordingly, the topology of planning theories aims at systematising this inherent knowledge and locating it in the field of planning theory. Topology emphasises the systemic nature of this scientific field and the relationship of certain elements to one another, not to be confused with a typology, the aim of which is to distinguish and differentiate individual elements from one another. The topology of planning theories is a logic of the location of theories, their objects of knowledge, ranges, limitations and characteristics. This classification is not linear or even causal; the interactions are more like double images or matching patterns. The special feature of the planning sciences lies in their both present and future-oriented planning knowledge as well as in their strong action orientation towards planning practice in a directly corresponding field of action, spatial planning.

Citations

- Alexander, E. R. (2016): There is no planning - only planning practices: Notes for spatial planning theories. *Planning Theory* 15(1), 91-103.
- Allmendinger, P. (2017): *Planning Theory*. London: Palgrave.
- Barker, G. & Kitcher, P. (2014): *Philosophy of Science—A New Introduction*. New York: Oxford University Press.
- Davoudi, S. (2015): Planning as Practice of Knowing. *Planning Theory*, 14(3), 316-331.

Key Words: Planning theories, systematisation, planning discipline, planning knowledge

CAN WE DISMANTLE THE MASTER'S HOUSE? REFLECTIONS ON EFFORTS TO UNSETTLE PLANNING THEORY

Abstract ID: 1048

Abstract within Pre-Organized Session 9

RUDDICK, Susan [University of Toronto] sue.ruddick@utoronto.ca, presenting author

What is planning theory? How for that matter do we advance planning theory? Since John Friedmann's publication of *Planning in the Public Domain* in 1987, planning theory has opened the door to reflect on its intellectual lineage, the range of conceptual underpinnings that have shaped traditions in planning. In the current conjuncture, with mounting concerns over the global pandemic, climate crisis, amplified and accelerating social inequities, debates are growing around whether the mainstream planning and its varied epistemological influences will actually accelerate these crises or might contribute to their resolution, or whether it is necessary to "unsettle" planning theory altogether.

In this paper I reflect on a doctoral level graduate course I taught on advanced planning theory. Organized around the intention to unsettle the canon, we revisited the western canon from the perspective of emerging critiques – with particular focus on the ways planning might be understood and reimagined in recognition of its epistemological heritage, rooted in the logics of modernity and intellectual framings of 'northern' theory, and critical re-framings that have emerged both within and from outside of the canon, with particular insights offered by anti-racist, Indigenous, feminist and decolonial perspectives.

Through the course, deploying a range of methods of textual analysis and critique in a close reading, we explored the intellectual heritage of planning theory and its lineages, as well as the possibilities offered by anti-racist, feminist, Indigenous, decolonial and other critical perspectives. We undertook a critical engagement of the western canon and several levels: first in an exploration of its epistemological and ontological grounding assumptions, and core concepts; second in the ways that actually existing planning projects have often wittingly or unwittingly furthered colonial and racist agendas, and finally in ways we might unsettle and rethink the canon through anti-racist, decolonial and alternatives to modernist approaches to planning.

Citations

- Friedmann J. 1987 *Planning in the Public Domain: From Knowledge to Action*.
- Connell R. 2007 *Southern Theory: The Global Dynamics of Knowledge in Social Science*.
- Jodi Melamed 2015 *Racial Capitalism Critical Ethnic Studies* 1(1): 76-85.
- Miraftab, Faranak. 2009. *Insurgent planning: situating radical planning in the Global South. Planning Theory* 8: 32-50.
- Walker, R. and T. Jopla (eds) *Reclaiming Indigenous Planning*

Key Words: northern theory, anti-colonial, anti-racist, feminist, Indigenous

THEORY AS A HINDRANCE TO UNDERSTANDING

Abstract ID: 1049

Abstract within Pre-Organized Session 9

SANYAL, Bish [Massachusetts Institute of Technology] sanyal@mit.edu, presenting author

Inspired by Albert Hirschman's (1971) critique of "paradigms" I will propose that planning theories are paradigms which not only describe how urban policies work (descriptive) but also how good policies should work (normative). In trying to create such holistic explanations which are coherent, theory building often makes broad assumptions about human behavior, organizational settings, and larger political economy, in the process overlooking evidence which does not fit the neatly constructed theories. Yet, it is such "odd evidence" which can open up social inquiry, identifying conditions under which the neatly constructed theoretical propositions do not hold true, thereby expanding our overall understanding of the problem under study. Drawing on a few examples from the fields of international development and planning theory, this paper will argue that paradigms and the theories they are based on can hurt our understanding of problems rather than address them.

Citations

- A.O. Hirschman (1971), *A Bias for Hope*, Yale university Press, pp 342- 360
- Paul Feyerabend, *Against Method*, Verso: London, Fourth edition, 2010
- Richard Willson, *Reflective Planning Practice*, Routledge, 2021

CO-CRAFTING THE JUST CITY: LEARNING FROM PRACTICE AND CRITICAL REFLECTION

Abstract ID: 1050

Abstract within Pre-Organized Session 9

THROGMORTON, James [University of Iowa] james-throgmorton@uiowa.edu, presenting author

Urban and spatial planners often serve quite ably in local governments, but they (and the scholars who study and theorize what planners do) rarely govern. Consequently, despite recognizing the unavoidable political aspects of planners' work, planners and scholars of planning often do not understand what it is like to serve as elected officials who are trying to improve the quality of their cities while being immersed in a complex, emotionally-charged, and politically-contentious flow of action. With the notable exception of Louis Albrechts' (2019) *Planners in Politics*, very few planning scholars have treated elected officials as key actors who shape local planning. As Albrechts (p. 263) writes, "political decision-making often seems like a black box to planners." My paper – which summarizes and builds upon my new book, *Co-crafting the Just City* – seeks to shine light into that black box. Narrated from my perspective as a city council member and (for the last four years, as mayor), the book reports how, using democratic processes of governance, the residents and elected leaders of one city in the midwest of the United States (Iowa City, Iowa) tried from 2012 through 2019 to co-craft their city's future while being immersed in a complex and contentious flow of action. In particular, the book seeks to give readers a sense of what democratically-elected city council members and mayors in the United States do and what it feels like to occupy and enact those roles. Second, it seeks to document what happened when council allies and I tried during my terms as mayor from 2016 through 2019 to lead our relatively small city toward becoming a more inclusive, just, and sustainable place; that is, a more "just city." Third, the book endeavors to help readers understand what it feels like to be an urban-planning scholar serving as a council member and mayor, and to share lessons I learned with other scholars, especially those who focus on planning theory. By doing so, it seeks to stimulate creative thought, research, and action about how the crafting of city futures can be improved. And, fourth, the book offers a practical, action-oriented set of ideas about how city futures are being (and can be) shaped. After reporting what I learned with regard to each of these aims, my paper will conclude with some specific observations and recommendations directly related to planning theory, especially with regard to how planning theorists could help local elected officials, their planners, and others co-craft the unfolding of better cities.

Citations

- Albrechts, L. (Ed.). (2020), *Planners in Politics: Do They Make a Difference?* Edward Elgar, Cheltenham (UK).
- Batty, M. (2018), *Inventing Future Cities*, MIT Press, Cambridge (MA).
- Beauregard, R. A. (2020), *Advanced Introduction to Planning Theory*, Edward Elgar, Cheltenham (UK).
- Haselsberger, B. (Ed.), (2017), *Encounters in Planning Thought: 16 Autobiographical Essays from Key Thinkers in Spatial Planning*, Routledge, New York.
- Throgmorton, James A. 2022. *Co-crafting the Just City: Tales from the Field by a Planning Scholar Turned Mayor*. Routledge, New York.

Key Words: action, co-crafting, governance, Just-City, storytelling

Track 13 Roundtables

DECOLONIZING PLANNING "FROM WITHIN" AND "FROM BELOW"

Abstract ID: 1424

Roundtable

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LAMBIA-NIEVES, Deepak [University of Puerto Rico] deepak.lambia@upr.edu, participant
SANTIAGO-BARTOLOMEI, Raúl [University of Puerto Rico] raul.santiago@upr.edu, participant
RAYMOND, Elora [Georgia Institute of Technology] elora.raymond@gatech.edu, participant
AIDOO, Fallon Samuels [University of New Orleans] faidoo@uno.edu, participant

Decolonizing planning requires that we take a critical stance against oppressive planning dynamics and structures. It requires prioritizing the historical realities of specific contexts and shifting the ground of knowledge from that of formal professional planning to the practices and spaces of social groups living under oppressive conditions (Miraftab, 2017). This exercise, however, involves considering the co-constitutive relationships between colonial and anti-colonial experimentation, formal and informal planning realities, and invited and invented spaces of action (Huq, 2020; Miraftab, 2020). This roundtable provides a space to discuss these relations and an opportunity to reflect on planning's decolonizing vision and anti-colonial praxis.

In the U.S., while planning is now more than ever being exposed as an instrument of imposition, marginalization, and erasure, planning scholars are increasingly trying insert the experiences of those under active colonization (Barry & Agyeman, 2020). At this juncture, this roundtable will allow participants to discuss the dialectics of (anti)colonial planning from within and from below.

Panelists/Speakers will provide a brief overview of their work and experiences and then engage in discussion by reflecting on the following questions:

- An anti-colonial planning framework requires considering current planning processes within a wider context of institutional planning rooted in exploitation and colonial dispossession (Angotti 2020). In what ways is planning still being complicit in the creation of colonial regimes and practices? What counter-stories and narratives have been erased from bottom-up planning and how might they be recuperated?
- While disasters exacerbate pre-existing conditions of injustice, they also shed light on previously less detected or emerging spaces of anti-colonial praxis. With increasing numbers of disasters due to climate change and social inequalities, how and to what extent might these new realities become catalysts for transforming planning praxis?
- Decolonizing the future requires a combination of critical analysis and imagination. What steps need to be taken in planning to move out of what Fanon describes as "the colonial gaze"?

Citations

- Angotti, T. (Ed.). (2020). *Transformative Planning: Radical Alternatives to Neoliberal Urbanism*. Black Rose Books.
- Barry, J., & Agyeman, J. (2020). On belonging and becoming in the settler-colonial city: Co-produced futurities, placemaking, and urban planning in the United States. *Journal of Race, Ethnicity and the City*, 1(1-2), 22-41.
- Huq, E. (2020). Seeing the Insurgent in Transformative Planning Practices. *Planning Theory* 19(4), 371-391.
- Miraftab, F. (2017). Insurgent practices and decolonization of future(s). In A. Madanipour A and V. Watson (Eds.), *Routledge Handbook of Planning Theory* (pp. 276-288). Routledge.
- Miraftab, F. (2020). Insurgency and juxtacity in the age of urban divides. *Urban Forum*, 31(3), pp. 433-441. Springer Netherlands.

Key Words: decolonization, anti-colonial planning, colonial experimentation, planning "from below", dialectics

A PLACE FOR RURAL PLANNING

Abstract ID: 1438

Roundtable

HAMERLINCK, Jeffrey [University of Wyoming] jeff.hamerlinck@uwyo.edu, organizer, moderator

AYAMBIRE, Raphael [University of Waterloo] raayambi@uwaterloo.ca, participant

EPP, Sara [University of Guelph] sepp@uoguelph.ca, participant

FRANK, Kathryn [University of Florida] kifrank@ufl.edu, participant

VOS, Jaap [University of Idaho] jvos@uidaho.edu, participant

This round table session is focused on the cross-cutting topic of "rural planning" as a sub-field of the urban and regional planning discipline and professional field of practice. Rural planning may be described as "the process of planning for rural areas, with a focus on rural issues and from a rural perspective" (Caldwell 2012, p. xvi). While a rural planning tradition has existed for decades in many other parts of the world, rural planning theory, education and practice have evolved much more slowly in North America. Fifty years ago, many governing bodies and planning professionals in the United States and Canada assumed that rural planning practice could easily be derived from standardized urban or regional planning approaches. That viewpoint has slowly changed with rural planning now generally acknowledged as a distinct interdisciplinary field of study and practice emphasizing holistic approaches to understand, value, and support rural places and their residents (Frank and Reiss, 2014). Despite this evolution, contemporary planning continues to have an urban bias that fails to recognize the influence of a unique rural planning culture on planning practice outcomes, nor the linkages and interactions that exist between urban and rural places with regard to wide range of universally critical planning issues (Daniels and Lapping 1996; Hibbard and Frank 2021; Markey et al. 2022). "The urban bias..., while not openly hostile to rural areas, constrains rural planning to urban interests and ways of planning, and one-dimensional views of rural areas" (Hibbard and Frank 2021, p. 8).

In this session, planning scholars from the United States and Canada - building on a similarly themed round table event at the 2014 ACSP Annual Conference - will share their current perspectives on the importance of rural planning, its unique settings and methods, and the need for greater inclusion of rural planning theory and techniques in contemporary planning education and practice. Topics to be addressed include the local and cross-boundary nature of rural social issues and community development challenges, multi-functional land use transition, the culture of rural planning practice, and strategies to improve theory-supported rural planning implementation. An objective of the session is to promote a dialogue around elevating rural planning's presence within the ACSP, including consideration for establishment of an ACSP Rural Planning Working Group and the organization of a rural planning pre-conference symposium at the ACSP 2023 Annual Conference.

Citations

- Caldwell, W.J. (ed.) 2012. *Rediscovering Thomas Adams: Rural Planning and Development in Canada*. Vancouver, Canada: UBC Press.
- Daniels, T.L. and Lapping, M.B. 1996. "The two rural Americas need more, not less planning." *Journal of the American Planning Association* 62 (3): 285–88.
- Frank, K.I., and Reiss, S.A. 2014. "The rural planning perspective at an opportune time." *Journal of Planning Literature* 29(4): 386-402.
- Hibbard, M., and Frank, K.I. 2021. "Bringing rurality back to planning culture." *Journal of Planning Education and Research*. Advance online publication. <https://doi.org/10.1177/0739456X211048933>
- Markey, M., Rud, M. A, Vogel, T., and Vos, J. 2022. "Death and life of the great American landscapes: How traditional planning's failures fragment rural western places." *Critical Planning*, 25. Online at: <https://escholarship.org/uc/item/44k8254m>

Key Words: rural, small town, planning culture, multifunctionality, community development

PLANNING FOR FUN, LOVE, ABUNDANCE, AND JOY IN TIMES OF DESPAIR

Abstract ID: 1630

Roundtable

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 POLLANS, Lily [Hunter College, City University of New York] lily.pollans@hunter.cuny.edu, participant
 BIERBAUM, Ariel [University of Maryland] bierbaum@umd.edu, participant
 CAROLINI, Gabriella [Massachusetts Institute of Technology] carolini@mit.edu, participant
 CORBIN, C.N.E. [Portland State University] ccorbin@pdx.edu, participant
 FLORES, Nina [California State University Long Beach] nina.flores@csulb.edu, participant
 KENYATTA, Matthew [University of Pennsylvania] drmatt@design.upenn.edu, participant
 KOH, Annette [California State Polytechnic University, Pomona] akoh@cpp.edu, participant

From the climate emergency to continued racial injustice to the fracturing of core social institutions to geopolitical tensions and outright wars to a still disruptive pandemic...We are living through tumultuous days. What is the planner to do in the face of despair? How do we live, love, work, teach, theorize when it seems our core values are chronically under threat, our home institutions lack basic resources, and every tidbit of good news is overshadowed by catastrophe? Climate and social justice activists have been increasingly and actively countering dire news with upbeat, anti-doomer messages: there is still so much to save. Is there a lesson here for planners?

This panel dives deep into our collective selves and our collective futures as planning researchers. We have all been trained to identify and interrogate problems—but in our focus on isolating “the problem” do we know how to identify what is good, without reducing, extracting, or ruining it? In the hardest moments, when the problems are so massive, and in societies still hung up about efficiency, metrics, and profits, how do we shift our attention towards the radical abundance and joy of our worlds? Could planning manifest social change by being more fun?

Thinking of bell hooks (2021), who passed away earlier this year, what would it mean for planning--our praxis, the interconnections of work, life, teaching, theoretical engagements --to embrace love, care, and mutuality?

As planning researchers, our role is to ask questions. Hopefully good questions. And then spend sometimes an inordinate time trying to answer those questions. So, this session is an interrogation and commentary - we hope a suitably fun and irreverent one - on planning research and practice, on academia, on the conflicts between our desires and the interventions that drive what remains largely efficiency and profit driven urban development. Like the praxes we embody, the session will be porous. The panelists will each frame and ask a question, to each other and to the audience, to be followed a few minutes of dedicated time for audience members to speak to each other, and then a facilitated conversation among everyone in the room.

Citations

- bell hooks. 2001. *All about Love: New Visions*. (New York: William Morrow)
- C.N.E. Corbin. 2018. "Wakanda! Take the Wheel! Visions of a Black Green City" *Journal of Planning Theory and Literature* 19(2): 273-275
- Mary Anaïse Heglar. 2019. "But the Greatest of these is Love," Medium, <https://medium.com/@maryheglar/but-the-greatest-of-these-is-love-4b7aad06e18c>
- Geoff Mann. 2019. "Doom," in Antipode Editorial Collective, Eds, *Keywords in Radical Geography: Antipode at 50*. (Hoboken: Wiley)

Key Words: joy, love, abundance, justice, fun

ACSP-AESOP SESSION: THEORISING THE FUTURE OF THE 'PROFESSIONAL' PLANNER

Abstract ID: 1807

Roundtable

MAIDMENT, Christopher [University of Reading] c.s.maidment@henley.reading.ac.uk, organizer, moderator
KAZA, Nikhil [University of North Carolina at Chapel Hill] nkaza@unc.edu, participant
CHETTIPARAMB, Angelique [University of Reading] a.chettiparamb@henley.reading.ac.uk, participant

Proposal for joint ACSP-AESOP special session within the Scholarship on Planning History or Planning Theory track. To be presented at the ACSP 2022 Conference in Toronto and the AESOP 2023 Congress in Lodz.

The aim of this session is to bring together transatlantic perspectives that explicitly focus on the future role of the planner, with a particular focus on how emerging practical and theoretical insights frame the normative role of the planner.

As an academic discipline, planning is thriving, energised by the exploration of new theoretical insights, drawing on, for example, complexity and the post-political, and the urgency of addressing social and environmental crises. Elsewhere, scholarship on the relationship between communities and planning continues to develop, as does work on what planners do in their day-to-day practice.

However, the identity of the profession is at a crossroads. Especially in a neoliberal political paradigm, shaping the context for planning on both sides of the Atlantic to a greater or lesser degree, there has been a move away from thinking of planning as a state led activity, characterised by technocratic and communicative methods. In reality, much of planning is done in conjunction with, or in opposition to the state by private interests. In such a worldview, the role of the planner is much broader and more varied than the conventional understanding of planning as regulation. Planners shop for venues, set agendas, frame issues, participate strategically, influence collective action, champion solutions and lobby for particular regulatory regimes and specific investments. Such roles of planners are under-explored and under-theorised in the literature.

Papers for this special session are encouraged to draw on the diversity of transatlantic experiences, to pinpoint the future role of the planner within a rapidly changing environmental, social and economic context, whether that role is normative or non-existent.

In particular, we are interested in the following questions

- What normative role should the planner play in the post-political context?
- What is the 'expertise' of the planner?
- Should the planner claim more of a leadership role?
- What can we learn from role models in planning about the profession's normative future?

Citations

- Campbell H. (2006) Just Planning: The Art of Situated Ethical Judgement. *Journal of Planning Education and Research*. 26(1), p.92-106.
- Forester J. (1999) *The Deliberative Practitioner: Encouraging Participatory Planning Processes*. London: MIT Press.
- Schön D. (1983) *The Reflective Practitioner*. London: Temple Smith.

Key Words: Professionalism, The planner, Planning theory, Leadership

PLANNING, SCHOOL SEGREGATION, AND THE NEIGHBORHOOD UNIT THEORY: THE CASE OF MONTGOMERY, ALABAMA

Abstract ID: 1007

Individual Paper Submission

RETZLAFF, Rebecca [Auburn University] rcr0001@auburn.edu, presenting author

Research Question: How was neighborhood planning used by planners in Montgomery, Alabama to keep schools segregated in the post-Brown v. Board of Education Era?

Background: Clarence Perry developed the neighborhood unit theory in 1929, providing guidelines on how to design a neighborhood, centered on a small school. Perry's ideas gained popularity among social reformers of the 1920s and was used as the basis for the Garden Cities movement. In 1957 planners in Montgomery used the neighborhood unit theory as the basis for planning. Each neighborhood would contain 5,000 people, a school, a playground, public buildings, and shopping. The city also used the neighborhood unit theory in its 1963 plan. In both plans, neighborhoods were also segregated by race.

Approach and Methodology: The method used in this research is archival data analysis of plans in Montgomery and an analysis of school segregation legal cases.

Findings: The research finds a connection between neighborhood planning and school segregation in Montgomery. Planners used the neighborhood unit approach to avoid desegregating schools. In school desegregation court cases, including Carr v. Montgomery, attorneys argued that school segregation was due to personal preferences of people to live near their own race.

Relevance and Implications: The relevance of this research is new insight about the relationship between school segregation and planning in the South during the civil rights era. The research has implications for current planning practice because many schools in Alabama are still segregated.

Citations

- Bagley, Joseph. *The Politics of White Rights: Race, Justice, and Integrating Alabama's Schools* (Athens, GA: University of Georgia Press, 2018).
- Connerly, Charles. *The Most Segregated City in America: City Planning and Civil Rights in Birmingham, 1920-1980* (Charlottesville, VA: University of Virginia Press, 2005).
- Mills, Thornton, J. *Dividing Lines: Municipal Politics and the Struggle for Civil Rights in Montgomery, Birmingham, and Selma* (Tuscaloosa, AL: The University of Alabama Press, 2002).
- Wilson, Bobby. *Race and Place in Birmingham: The Civil Rights and Neighborhood Movements* (New York: Rowman and Littlefield Publishers, Inc., 2000).
- Scribner, Christopher MacGregor. *Renewing Birmingham* (Athens, GA: The University of Georgia Press, 2002).

Key Words: Planning History, School Segregation, Neighborhood Unit Theory, Clarence Perry, Alabama

MASTER-PLANNING NAIROBI? PRETENTION AND PLANNED DEPENDENCY FOR AN ERSTWHILE COLONIAL CAPITAL

Abstract ID: 1010

Individual Paper Submission

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SCLAR, Elliott [Columbia University] eds2@columbia.edu, co-author

This presentation considers the ruptures and afterlives of top-down midcentury colonial master-planning through a case-study investigation. Nairobi: Master Plan for a Colonial Capital (White et al., 1948) captures the zeitgeist of midcentury-modernist, settler-colonial urban-planning aspiration achieved through what Brooks (2002) calls "centralized rationality." In this research inquiry, we ask: what were the aims and ambitions of the 1948 Plan in Nairobi on its own terms, and how did the planners envision urbanization processes in Nairobi when writing it? What effects has the plan had on form and usage of space in Nairobi? Drawing on a close archival reading of the Plan and its premises alongside a critical reading of relevant urban planning history and theory literature, we find that the Plan

represents an ambitious attempt to order and manage city space while controlling diverse populations. Written by three white South Africans who visited Nairobi only briefly, the Plan promotes proto-apartheid-esque racial separation for colonial Kenya, imbued aesthetically with Garden City and City Beautiful planning principles ill-fit for this context. That the Plan's totalizing vision largely misrepresents the city's political economy and ignores growing decolonization movements and entire population groups reflects the misplaced hubris of planners and British colonial elites (Mitchell, 1988), and reveals midcentury planning as complicit in aspirational processes of racialized empire-building (Chattopadhyay, 2012). Although never implemented, the Plan affected urban development in Nairobi considerably. By studying it, we can further understand how Nairobi was envisioned as a colonial 'outpost,' linking geographies of command-and-control surplus accumulation with hinterland extraction. We also gain a window into late-colonial British imagination in 1948, a moment following victory in World War II yet preceding decolonization movements in Kenya and worldwide. The Nairobi Plan reveals colonial capitalist urbanization's imagined role in producing uneven development, with land-use and master-planning serving as key technologies of governmentality. We conclude by considering contemporary planning in Nairobi, including the Nairobi Metropolitan Region (NMR) 2030 planning competition (Myers, 2015). Contemporary efforts seek to defy these colonial legacies yet remain caught within familiar imaginaries and world systems. Through the case of Nairobi's 1948 Plan, this research helps planning scholars and practitioners understand the ways in which planning has been, and can be, used as a tool for colonial domination and as a technology to encode racialized difference. The work calls for planning practices that are at once more locally situated and in tune with grassroots struggles and vernacular uses of space.

Citations

- Brooks, Michael P. 2002. "Centralized Rationality: The Planner as Applied Scientist," in *Planning Theory for Practitioners*. New York: Routledge, 2002.
- Chattopadhyay, Swati. 2012. "Urbanism, Colonialism and Subalternity." In *Urban Theory Beyond the West: A World of Cities*, Tim Edensor and Mark Jayne eds. London: Routledge.
- Mitchell, Timothy. 1988. "Egypt at the Exhibition" and "Enframing" in *Colonizing Egypt*. Berkeley, CA: University of California Press.
- Myers, Garth. 2015. "A World-Class City-Region? Envisioning the Nairobi of 2030," *American Behavioral Scientist*. Vol. 59, no. 3, March: 328–346. <https://doi.org/10.1177/0002764214550308>.
- White, Leonard William Thornton, L. Silberman, and P. R. Anderson. 1948. *Nairobi, Master Plan for a Colonial Capital: A Report Prepared for the Municipal Council of Nairobi*. London: H.M. Stationary Office.

Key Words: Settler colonialism, Modernist planning, Nairobi, Urbanization, The logic and impact of plans

WHAT IS THE MEANING OF EQUITY: AN ANALYSIS OF COMPREHENSIVE PLANS

Abstract ID: 1069

Individual Paper Submission

OGUSKY, Adam [University of Texas at Austin] adam.ogusky@gmail.com, presenting author

Interest in equity in planning scholarship, education, and practice is on a sustained rise. While this trend is reflected in scholarly literature and course syllabi, the manner and extent to which equity is shaping actual planning practice remains poorly understood. Are we planning for equity in contemporary practice? How well and to what extent? What definitions of equity are guiding planning practice, if any? How do planners and communities imagine more equitable cities? In order to begin answering these questions, this research project looks to perhaps the most recognizable product of planning practice: the comprehensive plan. These documents—still central to the planning profession—provide a reasonable proxy for the state of planning practice as well as a window into the profession's overall goals and orientation.

This research is part of a larger project investigating both the quality of comprehensive plans' treatment of equity, as well as the meanings of equity at work in contemporary planning, and their relationship to and dependence upon theories of justice coming from moral and political philosophy.

This paper will focus on the meanings of equity at work in planning discourse as found in contemporary comprehensive plans. Equity in planning remains a deeply fuzzy term, and this research will use theories of justice as a way to make sense of and typologize the meanings of this term found in planning documents. Such theories help to ask how planning documents define (and don't define) both what is being equalized and for whom in the words of the plans. The plan content analysis carried out for this research will also indicate how clearly or vaguely plans are defining equity, how consistent these definitions are, and the extent to which the interventions called for lean towards system change or system maintenance. The ultimate goal of this research is to offer planners both a language and set of concepts to use when thinking about and advocating for approaches to equity, and some reflection on, not just how such approaches differ but also which may be better suited to a planning context.

Citations

- Brand, A. L. (2015). The Politics of Defining and Building Equity in the Twenty-First Century. *Journal of Planning Education and Research*, 35(3), 249–264.
- Hausman, D. M., & McPherson, M. S. (2006). *Economic analysis, moral philosophy, and public policy* (2nd ed). Cambridge University Press.
- Marcuse, P., Connolly, J., Novy, J., Olivo, I., Potter, C., & Steil, J. (Eds.). (2009). *Searching for the just city: debates in urban theory and practice*. Routledge.
- Reece, J. W. (2018). In pursuit of a twenty-first century just city: The evolution of equity planning theory and practice. *Journal of Planning Literature*, 33(3), 299-309.
- Sandel, M. J. (2009). *Justice: What's the right thing to do?* (1st ed). Farrar, Straus and Giroux.

Key Words: equity, comprehensive plans, justice, plan evaluation

THE REDEVELOPMENT OF THE NOVA SCOTIA HOME FOR COLORED CHILDREN: A CASE FOR TRAUMA INFORMED URBAN PLANNING PRACTICES

Abstract ID: 1109

Individual Paper Submission

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The field of urban planning and its scholarship, while raising awareness of harmful development practices for marginalized groups, has not directly engaged in alternative, trauma-informed planning processes at the municipal level. Trauma is defined as, “Experiences that produce intense emotional pain, fear, or distress, often resulting in long- term physiological and psychosocial consequences” (Bowen & Murshid, 2016, p. 223). Planning scholars have long acknowledged that planning practices that have led to racial segregation, dispossession, and concentrated poverty and that these patterns have contributed to the exposure to trauma for socially and economically marginalized groups (Fullilove 2009). The development of trauma informed professional practice has been a focus of the fields of social work and law, that have a scholarly tradition of acknowledging trauma and providing frameworks for carrying out trauma informed practice. Trauma informed practices promote “emotional health...through empowerment, radical acceptance, creation of safe spaces, advocacy, relationship building, mind/body practices and experiential learning” (Reese, 2020, 2) based on the premise that trauma “alter[s] social networks and reduc[es] community capacity to collectively identify and address its problems and plan for its future” (Weinstein, 2019, 7). Although planning scholars have proposed models like therapeutic planning that may speak to some of the main goals of trauma informed practice (Sandercock and Attili 2014), they are yet undeveloped when it comes to an understanding of how to formalize such approaches within professional practice.

Using the case study of the redevelopment of the Nova Scotia Home for Colored Children in Halifax, Nova Scotia, the site of institutional abuse of African Nova Scotian children that is currently undergoing redevelopment, this paper aims to answer the following: 1) What principles of trauma-informed care are currently being used in this case?, 2) What aspects of the development process are inconsistent with trauma-informed principles? and 3) In what ways can planning practitioners begin to embed trauma-informed ethics into their formal processes? We conducted a content analysis of interviews with project stakeholders (including planners, developers and advocacy organizations), and relevant documents (including development proposals, public meeting minutes, and the provincial Restorative Inquiry into the abuses at the Home). Our analysis showed that a main barrier to carrying out trauma informed practices was a lack of flexibility in formal planning processes and a lack of validation of survivor experiences that were complex and diverse; these tendencies place survivors at risk of further traumatization. In spite of these harmful aspects of formalized processes, planners managed to take their own steps to making processes more trauma informed on their own accord, by developing partnerships with African Nova Scotian advocacy groups, and by incorporating survivor testimony beyond what was required, though on an ad hoc basis. Based on our analysis we make several recommendations for how planners might codify trauma informed practices into formal processes. These include formalizing the involvement of African Nova Scotian advocacy groups, supportive diverse forms of non-hierarchical engagement, self-reflection on the field of planning’s relationship to community trauma, and acknowledging the physical sites of trauma in ways that are respectful of survivor wishes and experiences.

Citations

- Sandercock, Leonie, and Giovanni Attili. 2014. “Changing the Lens: Film as Action Research and Therapeutic Planning Practice.” *Journal of Planning Education and Research* 34 (1): 19–29. <https://doi.org/10.1177/0739456X13516499>.
- Fullilove, Mindy. 2009. *Root Shock: How Tearing Up City Neighborhoods Hurts America, and What We Can Do About It*. Random House Publishing Group: New York.

- Bowen, Elizabeth A., and Nadine Shaanta Murshid. 2016. "Trauma-Informed Social Policy: A Conceptual Framework for Policy Analysis and Advocacy." *American Journal of Public Health* 106 (2): 223–29. <http://dx.doi.org.ezproxy.library.dal.ca/10.2105/AJPH.2015.302970>
- Reece, Jason. 2020. "Planning for Youth Emotional Health in Unruly Environments: Bringing a Trauma Informed Community Building Lens to Therapeutic Planning." *Projections*, October. <https://doi.org/10.1162/ooc13b77.29aeobaa>
- Weinstein, Emily. 2019. "Trauma Informed Community Building Model." *Organizing Engagement*. November 1, 2019. <https://organizingengagement.org/models/trauma-informed-community-building-model/>

Key Words: trauma-informed, African Nova Scotian, redevelopment, therapeutic planning, restorative justice

DIGITAL INSURGENCY: DATA PRODUCTION FROM THE GRASSROOTS AS A DECOLONIAL PRACTICE

Abstract ID: 1137

Individual Paper Submission

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Frequently, the processes of creation of technical/expert knowledge excludes certain groups of people and perpetuates structures of power, knowledge, and invisibility (Furtado & Renski, 2020). In such a top-down system, information strategically perpetuates colonizing patterns of privilege that suppress subaltern voices. In many ways, digital technologies have been incorporated into contemporary planning as a colonial tool to enforce a neoliberal logic of knowledge and urban development that ties the concept of "smart" or "digital" to economic profit (Caragliu et al., 2013).

As a reaction to that reality, social movements develop decolonial strategies that recognize and undo the hierarchical structures of race, gender, heteropatriarchy, and class that control knowledge, practice, and other structures that are constitutive of global capitalism and Western modernity (Walsh & Mignolo, 2018). This paper presents a framework for digital insurgency through empirical analysis showing how bottom-up processes of data creation can empower disenfranchised citizens to voice their needs in technical and scientific ways.

Through a case study analysis of three examples from the cities of São Paulo, Rio de Janeiro, and Fortaleza in Brazil, we present how social movements meet actionable criteria for digital insurgency. We qualify the initiatives presented here based on three inherent features of insurgency presented by Huq (2020):

- Is the initiative grounded in political society?
- Does the initiative rely on the agency of marginalized social groups?
- Does the initiative have a practical aspect?

We also add our own features to incorporate digital and decolonial concepts:

- Does the initiative apply technological platforms as a source or tool to create or share knowledge (such as podcasts, apps, blogs, social media, maps, etc)?
- Does the initiative create counter-hegemonic narratives?

The Covid-19 in Favelas Unified Dashboard in Rio de Janeiro is a virtual collaborative mapping initiative that produces reports and statistics and helps slums dwellers cope with information invisibility in the context of the pandemic. The Community-led census Um Olhar Sobre o Poço in Fortaleza was developed to account for the real number of homes, and dwellers in an informal community to withstand eviction and use that place-based knowledge to better understand their reality and collective identity. The UNAS Heliópolis organization in São Paulo collected and mapped data about COVID-19 cases and the impacts of the pandemic in their communities, disseminating it through social media accounts while putting forward policy proposals to address such impacts.

In short, digitally insurgent planning uses technology to produce bottom-up knowledge that represents "the other" and applies it to claim urban rights. These digital narratives and products are connected to a larger political and decolonial strategy that is based on action.

The digital scenario allows us to look at the appropriation of a different kind of [virtual] space where we can still

identify decolonial practices that question the legitimacy of the dominant narrative portrayed by a neoliberal State (Walsh & Mignolo, 2018) and insurgent practices that contest who has access to the urban realm (Miraftab, 2009). The conceptual framework helps explain how grassroots production of knowledge can be nested within a larger framework of digital insurgency and decoloniality that incorporates a multiplicity of urban ecosystems to promote social and spatial justice through data creation and sharing.

Citations

- Caragliu, A., Del Bo, C., & Nijkamp, P. (2013). Smart cities in Europe (pp. 185-207). Routledge.
- Furtado, L. and Renski, H., 2019. Insurgent data building by informal settlements. V!rus, Sao Carlos, 19. [e-journal] [online] Available at: . [Accessed: 23 March 2022].
- Huq, E. (2020). Seeing the insurgent in transformative planning practices. *Planning Theory*, 19(4), 371-391.
- Walsh, K., & Mignolo, W. (2018). On decoloniality. DW Mignolo, & EC Walsh, *On Decoloniality Concepts, Analysis, Praxis*, 304.
- Miraftab, F. (2009). Insurgent planning: Situating radical planning in the global south. *Planning theory*, 8(1), 32-50.

Key Words: Insurgent Planning, Digital Tools, Collaborative Data, Decolonialism, Social Movements

VAN GINKEL ASSOCIATES: EXTENDED URBANIZATION AT THE CANADIAN CENTRE FOR ARCHITECTURE VGA FONDS

Abstract ID: 1145

Individual Paper Submission

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This article advocates for a more complete historiography of planning in the settler-Canadian context where a territorial dialectic becomes the primary lens through which to understand planning history. This argument is unpacked by way of archival research at the Canadian Centre for Architecture. The Van Ginkel and Associates (VGA) fonds contain plans, correspondences, and artefacts from one of Canada's most prolific mid-century planning firms. VGA is most often associated with metropolitan interventions, from Expo '68 to residential masterplans and heritage planning. An investigation into the office as seen from the point of view of oil and gas, however, lends important insight into the complex materialities of modern Canada's preeminent office. A reading of VGA through oil and gas shows a firm engaged at multiple scales where the distances, sporadic settlement, and economic activity introduced by the extractive industries are problems to be solved through infrastructure and the development of a new "north". Leaving Montreal for Hudson Bay and the Mackenzie Valley connects the firm to projects that underscore a belief that Canada's vast geography could be conquered. By looking at their work in the context of petro-flows, this article explores the financing and professional networks that emerge, and reveals through internal documents the material and metabolic knowledges that travel between country and city.

One of VGA's largest consultancy projects was in service of a consortium of oil and gas companies – Arctic Gas Pipeline Ltd, Gulf Oil Imperial Oil, and Shell Canada Ltd – during the political build-up of the McKenzie Valley Pipeline. Their report, "Impact of Development in McKenzie Region" measures the pipeline against obstacles for development. This document is critiqued in the context of associated VGA design projects. In 1971, Northern Airlift sought to first diagram and then implement a new company town model for mining sites in the north, under the axiom "Don't build towns but do transport." Since, Suncor and Syncrude have built airstrips into their site plans, adjacent to the mines themselves. VGA's 1963 Hudson Bay Project is a speculative planning scheme that would see Manitoba as the centre of a new Canadian economy. Transportation and energy corridors would emanate from Churchill to Denver and Rotterdam.

Contending with this body of work demands regional and territorial lenses and a greater sense of design practice's connection to material flows and Indigenous dispossession. Important to this study will be how the office positioned itself inside these complexities. For instance, collection materials for a development in the Burrard Inlet contain one VGA folder simply titled "Indian Problem". A return to the metropolis in the context of VGA's more explicitly extractive consultancies provides then an alternate historiography of the "Man and his world" exposition as one where modernism, metabolism, and settler-colonialism can be more fully articulated within Canadian planning discourse.

"Methodological cityism", is a term used to critique Urban Political Ecology scholarship that demonstrates "an overwhelming analytical and empirical focus on the traditional city to the exclusion of other aspects of contemporary urbanization processes" (Angelo and Wachsmuth, 2015, 16). In order to develop their concept, Angelo and Wachsmuth adopted a Lefebvrian framework in order to "trouble traditional distinctions between urban/rural and society/nature by exploring urbanization as a global process" (Angelo and Wachsmuth, 2015, 16). Canadian professional planning has served to essentialize these dualisms, demonstrated by weighing VGA's public facing projects against their private consultancies. Positioned alongside anti-colonial and anti-extractivist texts, a Lefebvrian

framing opens inquiry across colonial jurisdictions and morphologies, and offers a conceptual window for imagining radically new planning relations and the opportunity to trouble a dominant narrative about professional practice's relation to conditions of "extended" urbanization.

Citations

- Angelo, H. & Wachsmuth, D. (2015). Urbanizing Urban Political Ecology: A Critique of Methodological Cityism. *International Journal of Urban and Regional Research*, 39(1), 16–27.
- Bélanger, P. (2009). Landscape As Infrastructure. *Landscape Journal*, 28(1), 79–95.
- Fortin, D., & Blackwell, A. (2022). Introduction. *c/a/n/a/d/a: delineating a capitalist nation-state*. Scapegoat, 12.
- Sevilla-Buitrago, A. (2013). Urbs in rure: historical enclosure and the extended urbanization of the countryside. In N. Brenner (Ed.), *Implosions / Explosions. Towards a Study of Planetary Urbanization* (236–259). Jovis.
- Valdivia, G. (2015). Oil frictions and the subterranean geopolitics of energy regionalisms. *Environment and Planning A*, 47(7), 1422–1439

Key Words: historiography, settler-colonialism, landscape infrastructure, oil and gas

LESSONS FROM THE FEMINIST LENS OF SOCIAL REPRODUCTION THEORY FOR RECONFIGURING PLANNING THEORY AND PRACTICE

Abstract ID: 1176

Individual Paper Submission

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Looking through the long and contentious history of planning theory, one can see the transformation in the terminology, scope and roles of planning in relation to equity in Global North to address the wicked problems of achieving a just city (Reece 2018). Furthermore, we witness a gradual move from looking for solutions inside to seeking solutions and alternatives outside of the current racial-patriarchal-capitalist structure. In fact, contemporary equity planning theories which originated in the global north, stemmed from Marxist and feminist traditions. Here, we argue that using the feminist theoretical lens of social reproduction could help us in furthering the goals of contemporary equity planning and addressing its contradictions by centering "life-making" and care in planning discourse (Arruzza et al 2019). Briefly speaking, social reproduction is the daily and long-term process of reproducing the means of production and it is the labor power and the social relations that keeps them running and holds them in place (Katz 2017). Social Reproduction Theory (SRT) erases the boundaries between production and reproduction spheres and advocates "an epistemological, ontological, and deeply political way of engaging the world around us" (Winders & Smith, 2019). The studies concerning SRT have usually been somewhat referred to and dismissed as belonging to gender studies and is not usually a part of the active and wide-spread conversations in other academic realms. This has resulted in the limited number of theoretical and empirical research using SRT outside of the feminist community. Promoting more critical engagement between the feminist lens of SRT and planning theory has the potential to transform planning practices in relation to equity.

This much needed intervention is particularly timely and urgent as with the endurance of the current COVID-19 crisis, we are witnessing a resurgence of discussions around equity and redistribution. It's important to mark the moment as COVID-19 has made a few aspects highly visible: a) the essential role of care work and life-making work to the survival of the society, b) the contradictions embedded within the capitalist system which prioritizes profit-making over life-making, c) the potential capacity of the state to use its resources to address and ameliorate the crisis of care if they prioritize life-making, and d) the alternatives imagined by the people through networks of care and mobilizations, such as strikes, mutual aids, food banks, etc. The question is how we use this momentum to work toward possible alternatives and to reconfigure planning practice and theory? We acknowledge the fact that the current dynamics in the global north has been long studied by the global south scholars; who have been using different lenses to make visible the ways the global south population compensate for the shortcomings of their states; where they have not had the option to look to the state for solutions to their life-making struggles. Although, there have been similar struggles for the marginalized people in US, for the first time in recent history, these dynamics are ever more visible. Here, we make an argument to use the insights and strategies from the literature on SRT in order to move towards a kind of planning that centers care and life-making and promotes "planning of care" (Jon 2020). We believe that social reproduction theory as a feminist lens has the ability to promote deep listening, seeing and caring in planning by 1) locating the crises of care at different scales and scope, 2) showing how this crisis is aggravated along the discriminatory lines of gender, race, class, nationality etc., 3) highlighting strategies used by people to demand/address their life-making needs, 4) helping planners frame demands and issues by mobilizing and centering life-making in discourses around planning and construction of policies.

Citations

- Reece, J. W. (2018). In Pursuit of a Twenty-first Century Just City: The Evolution of Equity Planning Theory and Practice. *Journal of Planning Literature*, 33(3), 299–309. <https://doi.org/10.1177/0885412218754519>
- Arruzza, C., Bhattacharya, T., & Fraser, N. (2019). *Feminism for the 99 percent: a manifesto*. London: Verso.
- Katz, C. (2017). Social reproduction. In *The International Encyclopedia of Geography*. (pp. 1–11). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118786352.wbieg1107>
- Winders, J., & Smith, B. E. (2019). Social reproduction and capitalist production: A genealogy of dominant imaginaries. *Progress in Human Geography*, 43(5), 871–889. <https://doi.org/10.1177/0309132518791730>
- Jon, I. (2020). A manifesto for planning after the coronavirus: Towards planning of care. *Planning Theory*, 19(3), 329–345. <https://doi.org/10.1177/1473095220931272>

Key Words: Equity planning, Planning practice and theory, Social Reproduction Theory, Life-making, Feminism

COLONIZING CLIMATES: THE AFRICAN DIASPORA, URBAN PLANNING, AND CLIMATE CHANGE

Abstract ID: 1189

Individual Paper Submission

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Each hurricane season, images circle each news cycle of Black people in decimated landscapes across the Caribbean and the US South. This was particularly evident when international attention turned to New Orleans especially, but also greater Louisiana and Mississippi, in the wake of 2005's Hurricane Katrina, to Puerto Rico (at to a lesser extent St. Croix and Dominica) after 2017's Hurricane Maria, and to The Bahamas following Hurricane Dorian. Despite the similarity of images circulated each time, conversations about these three disasters tended only connect them through the lens of climate change, which has been – and is expected to continue – increasing the frequency and intensity of tropical cyclones. Even within the hazard and disaster research field, conversations about these disasters are confined to regional and national borders. Yet we clearly see that African diasporic communities are amongst some of the most vulnerable to the impacts of climate change. Anti-Blackness is a thread that permeates processes of colonization, enslavement, and imperialism throughout the diaspora. Research has argued that these processes are some of the driving forces of climate change and its uneven global impacts. Yet, there are very few conversations about connections between global Black communities and their experiences of environmental disasters, sea level rise, and other climate change impacts. This paper offers suggestions for filling that gap by presenting a theoretical framework for understanding the relationships between global Black communities, anti-Blackness, urban planning, and climate change.

I begin by situating the US South and the Caribbean as Black places, discussing the possibilities that the Black diaspora, as a concept and process, offers us. I move to a brief discussion of European, particularly British, colonization, situating it as a set of macro-urban planning projects, underpinned by global anti-Blackness. Then, I turn to a discussion of climate change's disproportionate impacts on global Black communities, arguing, as have other scholars, that is a fundamental driver of climate change, one that overburdens Black communities in the Caribbean and the southern United States, rendering them vulnerable to climate change impacts. I highlight the limitations in the field of environmental planning, mainly its focus on technocratic solutions to climate change. Finally, I turn to the work of two organizations, one in the Caribbean, one in the US South, that are working on building more just environmental futures for their respective regions. I argue that the work of building these more just environmental planning futures in the US South, the Caribbean, and other places in the African diaspora, can be strengthened by understanding and articulating the connections between global Black communities.

Citations

- Hardy RD, Milligan RA and Heynen N (2017) Racial coastal formation: The environmental injustice of colorblind adaptation planning for sea-level rise. *Geoforum* 87(January). Elsevier: 62–72. DOI: 10.1016/j.geoforum.2017.10.005.
- McKittrick K (2011) On plantations, prisons, and a black sense of place. *Social & Cultural Geography* 12(8): 947–963. DOI: 10.1080/14649365.2011.624280.
- Patterson TR and Kelley RDG (2000) Unfinished Migrations: Reflections on the African Diaspora and the Making of the Modern World. *African Studies Review* 43(1): 11–45. DOI: 10.2307/524719.
- Sealey-Huggins L (2017) '1.5°C to stay alive': climate change, imperialism and justice for the Caribbean. *Third World Quarterly* 38(11). Routledge: 2444–2463. DOI: 10.1080/01436597.2017.1368013
- Sheller M (2018) Caribbean futures in the offshore Anthropocene: Debt, disaster, and duration. *Environment and Planning D: Society and Space* 36(6). SAGE PublicationsSage UK: London, England: 971–986. DOI: 10.1177/0263775818800849.

Key Words: climate justice, Black diaspora, colonization

THE SPACE AND TIME FOR PLANNING: A MERGE OF PARADIGMS?

Abstract ID: 1231

Individual Paper Submission

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Conflicts inside of the planning profession have unveiled a crisis of paradigms (Friedmann, 1989). Despite many efforts of planning theorists to find the next direction, there is still no promising solution. Meanwhile, planning is being taught and practiced in many schools worldwide. In most of them, failing rational and comprehensive planning is the leading concern (Alexander, 1984). In contrast, others focus on a theoretical analysis of the possibilities of diverse new planning methods without choosing a specific one. Scholars perceive that planning must improve with a new paradigm that approaches a better decision-making process (e.g., inclusive or equal) (Healey, 1996). Still, in this pursuit, beliefs and values of previous paradigms tend to be eliminated and the process starts from the beginning again (Alexander, 1984). Maybe the problem is not finding a new paradigm, but perhaps it is finding a separate way to perceive planning from other domains beyond westernized methods (Rahder & Milgrom, 2004). One direction may be the combination of knowledge gathered during several decades of theorists, but this would represent an endless and confusing endeavor. A different approach may be to learn from indigenous and ancestral lessons and understand how that knowledge has persisted until present day (Matunga, 2013). From this perspective, combining present and ancestral knowledge means considering two main scales of planning from a holistic perspective: space and time.

I argue that expanding planning scales would unbind their limitations and provide a re-accommodation of paradigms through an organic and interweaved process. Although this approach does not seem feasible in light of the political rationality that demarcates boundaries in planning, it can be an alternative to recovering its core function. In this document, I explore how to escalate the dimensions of planning in space and time, considering the political barriers from an Indigenous knowledge overview. To answer this question, I divide this document into four sections. In the first section, I describe the limitations of space in planning divided into four dimensions: environmental, economic, social, and political. The second part presents the scale of time and the repercussions of the efficiency trend with bounded rationality. The third section introduces indigenous planning components based on a complex network of worldviews, values, principles, and strategies that advocate for a resilient, coexisting, and inclusive process. The last section examines the relevance of perceiving planning from different eyes by comparing indigenous and non-indigenous views and finding a common ground. In the quest for the most suitable paradigm, theorists with a westernized standpoint reinvent knowledge and neglect previous experiences that could contribute to an improved theory. In the case of indigenous and ancestral views, knowledge changes differently: it does not deny historical experiences but is considered learning that leads to growth. From this view, Indigenous and ancestral planning theory results from a cluster of wisdom gathered over many generations. If conventional planning theory considers this conceptualization of growth through experiences and values instead of reinventing new paradigms, it is possible to improve the planning's direction.

Citations

- Alexander, E. R. (1984). After Rationality, What? A Review of Responses to Paradigm Breakdown. *Journal of the American Planning Association*, 50(1), 62–69. <https://doi.org/10.1080/01944368408976582>
- Friedmann, J. (1989). Planning in the Public Domain: Discourse and Praxis. *Journal of Planning Education and Research*, 8(2), 128–130. <https://doi.org/10.1177/0739456X8900800214>
- Healey, P. (1996). The communicative turn in planning theory and its implications for spatial strategy formations. *Environment and Planning B: Planning and Design*, 23(2), 217–234. <https://doi.org/10.1068/b230217>
- Matunga, H. (2013). Theorizing Indigenous Planning. In *Reclaiming Indigenous Planning* (pp. 3–32). McGill-Queen's University Press. <https://www.jstor.org/stable/j.ctt32b7bt>
- Rahder, B., & Milgrom, R. (2004). THE UNCERTAIN CITY: MAKING SPACE(S) FOR DIFFERENCE. *Canadian Journal of Urban Research*, 13(1), 27–45.

Key Words: Indigenous Planning, Decolonizing Planning, Planning Theory, Indigenous and Ancestral Knowledge

THE SHRINKING CITY IN HISTORICAL PERSPECTIVE: POPULATION AND HOUSEHOLD LOSS IN METRO DETROIT, 1900-2020

Abstract ID: 1273

Individual Paper Submission

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Planning research on shrinking cities aims to provide guidance to officials and activists striving to improve quality of life in places experiencing persistent population loss. However, few studies of shrinkage in the United States capture the full history and geography of the phenomenon. For reasons both practical and ideological, researchers often limit the analysis to large cities, or the principal cities in each metropolitan area, using census data that starts in 1970 or later (Ganning and Tighe 2021). However, many cities peaked in population earlier (Beauregard 2009). Furthermore, studies that use lower population thresholds find that many inner-ring suburbs are also losing population (Lee and Leigh 2007; Ribant and Chen 2020; Sarzynski and Vicino 2019). Some shrinking suburbs are grappling with rising poverty rates, physical deterioration, and fiscal distress—the same challenges faced by shrinking central cities (Anacker 2015; Hanlon 2010; Kneebone and Berube 2013; Lucy and Phillips 2000; Orfield 2002).

This paper historicizes the “shrinking city” and puts it in regional context. First I review the literature on metropolitan structure for theoretical insight into the location and causes of shrinkage in the United States Rust Belt over the past century. Then I demonstrate a method for analyzing the history and geography of shrinkage in particular metropolitan areas through a case study of shrinkage in Metro Detroit from 1900 to 2020. I ask: Which parts of the metropolitan area have experienced population and household loss, for how long, and how severely? Using maps and descriptive statistics, I analyze shrinkage within census tracts, county subdivisions, and counties. I hold boundaries constant in order to observe change within the same areas across time, measuring the endurance and severity of shrinkage from the year of its onset (if ever) to 2020. This analysis reveals a continuous pattern of shrinkage since the 1910s, starting in Detroit’s oldest, most industrialized, and overcrowded neighborhoods and spreading by 1930 to encompass high-density industrial suburbs like Hamtramck and Highland Park as well. Since then, the geographic extent of shrinkage has expanded nearly every decade, with all of Metro Detroit’s inner-ring suburbs peaking in population by the year 2000. Shrinkage, therefore, is a century-long trend in the region, and it has never been limited to the central city alone.

Yet while nearly every neighborhood in Detroit and its inner-ring suburbs has experienced multiple decades of population loss, shrinkage is not always severe. In many areas, population loss is primarily driven by the trend of decreasing household size. As a result of this trend, if a neighborhood ceases to add households, its population falls. This requires local governments to right-size services and infrastructure that are scaled to population, such as schools. Some suburbs appear to have adapted successfully, retaining their middle-class status despite gradual population loss. Shrinkage is most severe in neighborhoods with a long industrial history, especially those that are now impoverished and majority Black. In these neighborhoods, which are found in the central city as well as some suburbs, such as Highland Park and River Rouge, population loss from declining household size has been compounded by a loss of demand for housing, which lowers property values and results in housing vacancy and property abandonment. Mitigating further shrinkage in these neighborhoods would require confronting the structural forces that contribute to their stigmatization.

Citations

- Beauregard, Robert. 2009. Urban Population Loss in Historical Perspective: United States, 1820–2000. *Environment and Planning A* 41 (3): 514–528.
- Ganning, Joanna P., and J. Rosie Tighe. 2021. Moving Toward a Shared Understanding of the U.S. Shrinking City. *Journal of Planning Education and Research* 41 (2): 188–201.
- Lee, Sugie and Nancey Green Leigh. 2007. Intrametropolitan Spatial Differentiation and Decline of Inner-Ring Suburbs: A Comparison of Four U.S. Metropolitan Areas. *Journal of Planning Education and Research* 27 (20): 146–164.
- Ribant, Michael and Xuwei Chen. 2020. A Typology of U.S. Shrinking Cities. *The Professional Geographer* 72 (1): 152–164.
- Sarzynski, Andrea, and Thomas J. Vicino. 2019. Shrinking Suburbs: Analyzing the Decline of American Suburban Spaces. *Sustainability* 11(19): 5230.

Key Words: shrinking cities, urban decline, suburban decline, legacy cities, Detroit

PERIODISING PLANNING HISTORY IN METROPOLITAN REGIONS: AN HISTORICAL-DISCURSIVE-INSTITUTIONALIST APPROACH

Abstract ID: 1316

Individual Paper Submission

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Comparative historical accounts of the planning and governance of metropolitan development have either tended to focus on broad macro-economic trends or on micro-level changes. In the former, the governance of metropolitan regions is typically studied in the context of globalisation and neoliberalisation processes. In the latter, analyses

typically seek to identify differentiation across a range of case studies. These macro- and micro-level approaches occupy opposite ends of a research spectrum—the former seeking simplification through theoretical generalisation, and the latter underscoring distinctiveness through attention to specific contextual factors. More recently, meso-level approaches have been proposed as a middle ground between macro-level and micro-level analyses. Meso-level perspectives emphasise ‘generalised aspects of concrete empirical realities’, drawing attention to comprehensive, historically informed accounts of distinctive planning phases rooted in heuristic models and periodisation. In these meso-level approaches, heuristics serve as meta-theoretical frameworks for analysing how different categories—and especially the interconnection amongst them—shape the dynamics of spatial development phenomena

Comprehensive meso-level analyses need to account for the conjunctural implications emerging from the interlinkages between thematic categories as they unfold over different time horizons. Here, strategic-relational periodisation comprises a significant means through which change and continuity can be identified and interpreted (Jessop, 2001, 2004). A periodisation focuses on classifying actions, events, and periods into stages in accordance with their conjunctural repercussions (Jessop 2004). The systematic identification of ‘sequential periods of relative continuity and relative discontinuity’ thus contributes to the development of a deeper understanding of change and continuity in metropolitan planning history. Through periodised planning history, international comparative studies can thereby detail the similarities and differences ‘between a global disciplinary history and a geographically and culturally delimited planning system with its distinct historic paths’ (Suitner 2020).

To periodise metropolitan planning history from a comparative perspective, the paper employs the thematic-temporal-phronetic (TtP) heuristic—a meso-level approach developed by Galland & Harrison (2020) for analysing how metropolitan change and continuity unfold within historical eras of capitalist development. The TtP heuristic draws attention to how different thematic (T) categories play out within temporally (t) defined eras, focusing on what is happening, where it is happening, who is involved, how and why. Through phronesis (P), the heuristic then seeks to unveil what is at stake—who stands to gain and lose—whilst reflecting on how relations of power and values are being challenged. Since heuristics demand continual conceptualisation to usefully examine the ‘dynamism of the concrete social world’ (Paasi 2008), emphasis is placed on conceptualising a theoretical content for the dimensions and categories associated with the TtP heuristic applied to the metropolitan context as follows.

First, the thematic dimension builds on concepts from historical institutionalism (Sorensen 2015) and discursive institutionalism (Schmidt 2011), which emphasise the relational character of complex social formations—and the driving forces enabling them to mature or mutate over time—thus aptly facilitating the periodisation of metropolitan change and continuity. The temporal dimension is elaborated by systematically periodising ad hoc historical eras of metropolitan development—employing a bottom-up approach—rather than adhering to generalised eras of capitalist development. This approach offers a more specific and less predefined way of studying the situated dynamics of metropolitan change and continuity, since emphasis is placed on periods of relative continuity and discontinuity and the discursive formations enabled or constrained by the structural, material conditions and policy dilemmas of the time (Davoudi et al 2020). Finally, the phronetic dimension is developed to assess the implications of metropolitan change and continuity by focusing on horizontal interactions (i.e., the interconnections between thematic categories across systematically periodised eras). These interlinkages allow for a more comprehensive and nuanced reading of the complex dynamics brought about by the metropolitan planning-development dialectic and their implications.

Citations

- Galland, D. and Harrison, J. 2020. Conceptualising metropolitan regions: how institutions, policies, spatial imaginaries and planning are influencing metropolitan development. In Zimmermann, D. Galland & J. Harrison (Eds) *Metropolitan Regions, Planning and Governance* (pp. 1-21). Cham: Springer.
- Suitner, J., 2021. Vienna’s planning history: periodizing stable phases of regulating urban development, 1820–2020. *Planning Perspectives*, 36(5), pp.881-902.
- Sorensen, A., 2015. Taking path dependence seriously: An historical institutionalist research agenda in planning history. *Planning Perspectives*, 30(1), pp.17-38.
- Jessop, B. 2008. *State Power. A Strategic-Relational Approach*. Cambridge: Polity Press.
- Schmidt, V. (2011). Speaking of change: why discourse is key to the dynamics of policy transformation, *Critical Policy Studies*, 5(2), pp.106-126.

Key Words: metropolitan planning history, Periodisation, international comparative planning, critical junctures, path dependence

THE EVOLVING LANDSCAPE OF EQUITY PLANNING: OPPORTUNITIES FOR INTERVENTION AND CHANGE

Abstract ID: 1318

Individual Paper Submission

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The field of planning has always concerned issues of public health, safety and welfare, and since the late 1960s, equity has also been a key part of its mandate. This paper will consider the institutional and scholarly history of equity planning in the last half century, building on the work of scholars who have examined how and when social movement demands of the 1960s and 1970s were metabolized by planners (Thomas 2019), and the changing relevance of early equity planning concepts in a shifting contemporary context (Lung-Amam et al. 2015). We draw on institutional histories of mainstream planning professional and educational institutions, the histories of equity-oriented splinter groups and sub-fields (Thalbit 1999), and scholarship bridging planning theory, practice and education. We examine the changing relationships between planning institutions and the broader context of social movements, world events, and economic history since 1980.

From this base, we use methods of power and network mapping (Noy 2008), and institutional periodization (Thomas, 2019) for two aims. First, we retroactively characterize and assess the historical trajectories and expanding scope of equity planning since the early 1980s. We look back at the changes in the ways planners have understood what equity planning is, and also trace the shifting institutional systems that lead up to the field's current modes of professional recognition in planning education, and practice. Second, we point to key opportunities for intervention for planners in various spheres of educational, professional, informal and extra-institutional modes of planning. We use this information to work toward a theory of change (Anderson 2018), highlighting opportunities for actors in a range of positions inside and outside traditional planning structures to multiply and extend the field's commitments to and actions toward equity, justice, and social transformation.

Citations

- Anderson, Andrea. 2018. "A Community Builder's Approach to Theory of Change." Aspen Institute. http://www.dochas.ie/Shared/Files/4/TOC_fac_guide.pdf.
- Noy, Darren. 2008. "Power Mapping: Enhancing Sociological Knowledge by Developing Generalizable Analytical Public Tools." *The American Sociologist* 39 (1): 3–18. <https://doi.org/10.1007/s12108-008-9030-5>.
- Thalbit, Walter. 1999. "A History of PEO: Planners for Equal Opportunity." http://www.plannersnetwork.org/wp-content/uploads/2012/07/A_History_of_PEO.pdf.
- Thomas, June Manning. 2019. "Socially Responsible Practice: The Battle to Reshape the American Institute of Planners." *Journal of Planning History* 18 (4): 258–81. <https://doi.org/10.1177/1538513218786007>.
- Lung-Amam, Willow, Stacy Anne Harwood, Gerardo Francisco Sandoval, and Siddhartha Sen. 2015. "Teaching Equity and Advocacy Planning in a Multicultural 'Post-Racial' World." *Journal of Planning Education and Research* 35 (3): 337–42.

Key Words: equity planning, planning history, institutional history, network mapping, structural change

HISTORICAL DEVELOPMENT OF GLOBAL URBAN STUDIES AND PLANNING RESEARCH LANDSCAPE FROM 1991 TO 2020

Abstract ID: 1326

Individual Paper Submission

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The global impact of the COVID-19 pandemic, the rapid development of cutting-edge technologies in light of the big data era, and the call for sustainable urban development and conservation are the global urban issues in which new theoretical and practical foundations need to be identified. This is because the real-world research and practice regimes differ from time to time and are subject to contextual diversity. By summarising the developments and patterns in published academic research, a bibliometric analysis could be used to reveal numerous global trends and history for interdisciplinary and multidisciplinary research, and to provide supplementary yet insightful perspectives on research frontiers (Chen, 2006; Liu, Hong and Liu, 2012). In particular, Fang and Ewing (2020) and Sanchez (2020) are pioneers who applied bibliometrics in reviewing the historical development of planning theory and research. Under the US context, the former adopts it to categorise the knowledge domain of urban planning and monitor the overall research landscape of urban planning literature based on the citation profiles of the US urban scholars whereas the latter focuses on identifying prominent topics and research themes for scholarly priorities based on three top planning journals in the US (Fang and Ewing, 2020; Sanchez, 2020).

Building upon the foundation, this study aims to expand the scope to the global context by examining historical records of global urban studies and planning research to identify how the actual research trends and practices differ according to time and place. Using the Web of Science database, we performed a bibliometric analysis of urban

studies and planning research from 1991 to 2020 that was published in the top 30 journals in the field. Our analysis reveals the scientific outputs and prominent research themes by exploring the temporal trends in the titles and keywords of urban studies and planning research, which may be considered a potential guide for future research. China, housing, urban planning, urbanization, governance, sustainability and land use were the most frequently used terms. The US was the largest contributor to global urban studies and planning research as they produced the most independent papers, second in collaborative papers and possess an established environment that allows for collaboration between research institutes and professional practices. The US, the UK, and China were hotspots, with China's contributions increasing drastically in recent years, which confirms the significant position of Chinese urban research and reveals the country's keen interest in housing and sustainability issues in urban studies and planning research. The results were compared with the research themes summarised by various professional planning institutes around the globe, with commonalities and differences being found between the latest research themes in research and practices. This is the first study to quantify global research trends in the overall urban studies and planning research landscape. A comprehensive bibliometric analysis could not only identify the strong points and blind spots of urban studies and planning research but also lay down possible options for the way forward in the continued progression and enhancement of the research and practice knowledge domain (Derudder et al., 2019). Our study serves as an alternative means of identifying the trends in global urban studies and planning research, and it pinpoints the need for further alignment of research focuses between the academic, public and private sectors in order to strengthen the connection between theory and practice.

Citations

- Sanchez, T.W. (2020) 'The most frequently cited topics in urban planning scholarship', *Urban Science*, 4(1).
- Fang, L. and Ewing, R. (2020) 'Tracking Our Footsteps: Thirty Years of Publication in JAPA, JPER, and JPL', *Journal of the American Planning Association*, 86(4), pp. 470–480.
- Derudder, B. et al. (2019) 'The shifting position of the Journal of Transport Geography in "transport geography research": A bibliometric analysis', *Journal of Transport Geography*, 81, p. 102538. doi:10.1016/j.jtrangeo.2019.102538.
- Liu, X., Hong, S. and Liu, Y. (2012) 'A bibliometric analysis of 20 years of globalization research: 1990–2009', *Globalizations*, 9(2), pp. 195–210.
- Chen, C. (2006) 'CiteSpace II: Detecting and visualizing emerging trends and transient patterns in scientific literature', *Journal of the American Society for Information Science and Technology*, 57(3), pp. 359–377. doi:10.1002/asi.20317.

Key Words: research landscape, planning knowledge, bibliometrics

WALKING AS NOT A JUST GOOD THING: A CRITICAL EXAMINATION INTO THE PRODUCTION OF SPACE, MOBILITY, AND WHAT IT MEANS TO WALK

Abstract ID: 1348

Individual Paper Submission

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Walkability and complete streets are growing fields of study and practice within urban planning, aimed to increase the desirability and comfort of alternative travel-modes to a car, namely walking and cycling. Although these movements are often framed as a reclamation of streets, the realized impacts on walking behaviour are lesser known (Zavestoki & Agyeman, 2014). There is a need within the planning sphere to critically engage with power and lived experiences of the street and walking to better imagine a just reclamation of the street. In response to this research gap, this work aims to critically assess how efforts to pedestrianize the street (such as walkability and complete streets initiatives) have impacted walking behaviour, and introduces ideas into how the street, and planning more broadly, can be conceptualized to achieve just futures.

To do so, this paper explores a **critical history of the street** to determine the interrelations between the production of space and mobility, focusing on the street as a produced space. Through a critical assessment of existing literature, the results **illuminate that although the dominant mode (from pedestrians, to cyclists, and motorists) has shifted over time, the street has always prioritized the mobility of those with power**. This paper traces the history of the street from the early conceptions of 'pedestrianizing' the street for promenading, to the rise of the car and autocentricity, to the modern reclamation of the street through walkability and complete street initiatives. **Utilizing the theory of 'imagined mobile subject' (Jensen, 2011), it is argued that throughout each phase of history there has been an ideal image for whom the street has been planned**. Even the supposed-transformative practices of walkability and complete streets are implicitly and explicitly affirming unjust power structures, particularly capitalism and neo-liberalism. The argument then turns to focus on how these practices can restrict the right to the city through a social control onto public space which excludes certain identities and bodies (Mitchell, 2003).

After critically interrogating the history of street, the paper further explores the right to the city and its implications on the street through the theory of mobility justice. The limits of the right to the city and more generally 'rights-talk' when discussing mobility is interpreted through the lens of mobility as an embodied practice (Sheller & Urry, 2006), theorizing that walkability is felt not only in one's surrounding built environment but also in one's body. Accordingly, this paper argues that it is through the capabilities approach that the embodied realities of mobility can be integrated into our understandings of the right to the city. As a relatively understudied conception of justice within the planning discipline (Basta, 2016), the capabilities approach offers a bridge for accounting for embodied realities within rights, which could provide a more fulsome response to the unjust power structures that have been historically entrenched, and still remain, within our conception of the street. From the planning perspective, this work is a timely discussion of issues within transportation planning as complete streets and walkability continue to grow in popularity to foster 'liveable cities' (Zavestoki & Agyeman, 2014), without critically engaging with systemic barriers built into our streets and mobility cultures. The paper concludes with recommendations to practicing planners on ways to reconceive the role of planners and planning tools in forming not just complete, but equitable and just streets. This focuses on a two-pronged approach which is first based upon recognizing the ways that power has played onto and within the practice of planning, and secondly critically engaging with the imagined mobile subject which has been entrenched within our plans and policies that imagine the futures of streets.

Citations

- Basta, C. (2016). From justice in planning toward planning for justice: A capability approach. *Planning Theory*, 15(2), 190–212.
- Jensen, A. (2011). Mobility, space and power: On the multiplicities of seeing mobility. *Mobilities*, 6(2), 255–271.
- Mitchell, D. (2003). *The right to the city: Social justice and the fight for public space*. Guilford press.
- Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment and planning A*, 38(2), 207–226.
- Zavestoki, S., & Agyeman, J. (Eds.). (2014). *Incomplete streets: Processes, practices, and possibilities*. Routledge.

Key Words: mobility, walkability, production of space, right to the city, capabilities approach

PLACE-BASED AND ADAPTIVE SUSTAINABILITY: A CASE STUDY OF REGIONAL WATER PLANNING IN TEXAS

Abstract ID: 1358

Individual Paper Submission

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Sustainability is necessarily a flexible concept; however, sustainable planning continues to rely on general principles of “good city form” that are readily coopted by profit-seeking agents (Gunder 2006). Instead, a place-based and adaptive approach is required, as advocated for by the National Research Council's (1999) *Our Common Journey*. Despite the global or regional nature of threats (e.g. climate change), planning problems manifest locally, often in response to a unique set of interactions among a variety of systems (MacGillivray 2015). Moreover, “the pathways...cannot be charted fully in advance. Instead, they will have to be navigated adaptively at many scales and in many places” (NRC 1999, p.3). Place-based planning is receptive to the heterogeneity of local and regional context, processes, and drivers. An adaptive process acknowledges the path forward must be continually re-visited. How might such an approach look in practice?

To demonstrate these concepts, we present a case study of water planning in Texas. The state's rapid growth and proclivity to extreme weather make it a bellwether example for other regions adapting to a changing climate. Moreover, its contemporary water planning legislation is considered to be among the most adaptive and supportive of local and regional water planning in the United States (Dyckman 2016). A review of historic and planned water consumption examines all 25 metros across the state. Historic water use comes from the Texas Water Use Survey while the 2002, 2007, 2012, 2017 and 2022 State Water Plans (SWPs) detail expectations regarding future population growth, water supply, sectoral demand, and supply strategies for meeting future needs.

A review of historic municipal water consumption shows remarkable variability across the state. From 1980 to 2018, Texas experiences a marked decline in municipal water use. The per capita municipal average declines 24% from 180 gallons / day to 137 gallons / day, but individual metro performance varies widely from a 50% decline in Corpus Christi, TX to an 18% increase in Tyler, TX. During this period, water plans show substantive change. Across SWPs, population estimates increase while forecasted water supply and demand decrease. Crucially, future strategies show a marked shift in how to meet future needs. Initially, surface water comprises two-thirds of future strategies. By the 2022 SWP, this drops to one-third, with large increases in water conservation and reuse expanding rapidly. However, these statewide trends mask diversity amongst regional plans. To illuminate how place and adaption intersect, data

traces for five individual metro regions show how local context, new science, and emerging technologies result in unique, place-based outcomes.

The ambiguity of sustainability has contributed to its enduring role in planning (Campbell 2016). This work provides a link between sustainability and planning theory, articulating why conceptual flexibility is not only beneficial but also necessary. Though imperfect, regional water planning in Texas is a concrete example of place-based and adaptive sustainability, providing important lessons for sustainable planning beyond the environmental sector. Assumptions about growth, the role of technology, and human behavior all need continual reexamination. This process plays out differently across diverse contexts, so solutions should not be homogeneous. Place-based and adaptive planning is simpler and less contested in water planning than it would be for transformational land use, housing, transportation, and equity planning. Yet, key takeaways still apply. More than general solutions espousing the need for compact cities, a robust, well-funded planning apparatus is necessary, one that incorporates bottom-up governance as well as top-down financial and technical support. Humility counteracts complexity, empowering local knowledge and opening the door to solutions current conceived as impossible.

Citations

- Campbell, S. D. (2016). The Planner's Triangle Revisited: Sustainability and the Evolution of a Planning Ideal That Can't Stand Still. *Journal of the American Planning Association*, 82(4), 388–397. <https://doi.org/10.1080/01944363.2016.1214080>
- Dyckman, C. S. (2016). Sustaining the Commons: The Coercive to Cooperative, Resilient, and Adaptive Nature of State Comprehensive Water Planning Legislation. *Journal of the American Planning Association*, 82(4), 327–349. <https://doi.org/10.1080/01944363.2016.1214537>
- Gunder, M. (2006). Sustainability: Planning's Saving Grace or Road to Perdition? *Journal of Planning Education and Research*, 26(2), 208–221. <https://doi.org/10.1177/0739456X06289359>
- MacGillivray, B. H. (2015). The position of place in governing global problems: A mechanistic account of place-as-context, and analysis of transitions towards spatially explicit approaches to climate science and policy. *Environmental Science & Policy*, 53, 8–17.
- National Research Council. (1999). *Our Common Journey: A Transition Toward Sustainability*. National Academies Press.

Key Words: sustainability, place-based, adaptive, water planning, planning theory

URBAN “REVITALIZATION” AND INDIGENOUS-SETTLER RECONCILIATION: (DIS)CONNECTIONS BETWEEN MUNICIPAL REDEVELOPMENT PLANS AND RECONCILIATION STRATEGIES IN FOUR CANADIAN CITIES

Abstract ID: 1391

Individual Paper Submission

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Municipalities in Canada and other settler colonial contexts are currently engaged in seemingly conflicting projects, as they act to transform urban space in the interests of white capital while also placing new emphasis on Indigenous-settler reconciliation (e.g. Porter et al., 2019). Amidst discourses of reconciliation, state-led gentrification processes framed as “revitalization” and “redevelopment” reassert notions of settler possession while attempting to erase or selectively represent Indigenous connections to urban space (e.g. Quizar, 2019; Toews, 2018). These tensions underline the need to examine municipalities’ new urban redevelopment projects in tandem with their co-existing intentions and assertions surrounding Indigenous-settler reconciliation, to identify any (mis)alignments and the implications for settler planning practices. However, studies of planned “revitalization” in settler colonial contexts rarely analyze the transformation of an urban area in relation to processes of reconciliation (see Halpin, 2017 as one exception), particularly in ways that attend to municipalities’ growing engagement therein.

In response, this paper places municipal discourses of urban transformation and reconciliation in dialogue to examine their connections and disconnections. Here, I focus on four gentrifying Canadian cities that have released reconciliation strategies or frameworks in recent years (Montréal, Vancouver, Edmonton, and Regina). In these contexts, I interrogate how the orientations of new and ongoing municipal-led redevelopment or revitalization projects relate to the co-existing municipal reconciliation directions. In doing so, I consider if and how this “dialogue” addresses the power dynamics of settler planning practices, recognizing that state approaches to reconciliation often reproduce settler colonial relations (e.g. Manuel & Derrickson, 2017). The paper draws on a textual analysis of formal documents surrounding the planning projects (consultation presentations and reports, draft plans, final plans), as well as documents associated with the reconciliation strategies and frameworks. I analyze the language, concepts, and objectives within these documents to identify how the planning projects and reconciliation directions are implicitly and explicitly framed, and how these discourses of urban transformation and reconciliation relate to each other.

The paper finds the relationship between municipalities' plans for urban transformation and their reconciliation intentions to be multi-dimensional, with discursive frames and substantive elements that align in some ways while conflicting or remaining disconnected in others. However, the alignments identified in this context are predominantly superficial in terms of their disruption of the settler planning status quo. At the same time, the conflicts and silences between the plans and the reconciliation strategies, and within the planning documents themselves, underline the persistence of colonial power dynamics within state-led redevelopment and revitalization projects. These findings point to the need for settler planning practice to engagement more deeply with questions of Indigenous-settler reconciliation, including and beyond any municipal intentions therein, in framing processes of urban transformation.

Citations

- Halpin, B. (2017). *Unsettling Revitalization in Toronto: The Fantasy and Apology of the Settler City*. [PhD Dissertation, York University]. Retrieved from <http://hdl.handle.net/10315/33544>
- Manuel, A., & Derrickson, Grand Chief Ronald. (2017). *The Reconciliation Manifesto: Recovering the Land and Rebuilding the Economy*. Toronto, ON: James Lorimer and Company Ltd., Publishers.
- Porter, L., Jackson, S., & Johnson, L. (2019). Remaking imperial power in the city: The case of the William Barak building, Melbourne. *Environment and Planning D: Society and Space*, 37(6), 1119-1137.
- Quizar, J. (2019). Land of Opportunity: Anti-Black and Settler Logics in the Gentrification of Detroit. *American Indian Culture and Research Journal*, 43(2), 113-133.
- Toews, O. (2018). *Stolen City: Racial Capitalism and the Making of Winnipeg*. Winnipeg, MB: ARP Books.

Key Words: urban redevelopment, Indigenous-settler reconciliation, state-led gentrification, settler colonial planning, discourse analysis

TEMPORALITY AND 'BECOMING' IN RURAL ONTARIO: PLANNING COMMUNITIES OF DIVERSITY AND DIFFERENCE OUTSIDE THE COSMOPOLIS

Abstract ID: 1397

Individual Paper Submission

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Over the past six decades, the settlement locations of immigrants to North America have primarily been cosmopolitan gateway cities and their surrounding suburbs. However, recent policy initiatives in Canada (e.g., federal *Rural and Northern Immigration Pilot*; *Rural Employment Initiative* in Ontario) have resulted in spatial redistributions of newcomers into smaller cities and rural towns. These changing settlement patterns are deemed necessary to mitigate the economic and social impacts of population decline prevalent in small cities and rural communities, while also addressing the barriers to successful integration facing recent immigrants residing in urban areas. These emergent trends provide new opportunities to explore issues and approaches to planning for diversity and difference outside of major urban areas with particular attention to the importance of temporality of/in the changing settlement and resettlement patterns of newcomers in Canada.

The role of time, temporality and 'timescapes' have received growing attention over the past decade by critical spatial scholars including those in planning (Degen, 2018; Laurian and Inch, 2019) who note: "planning...is a richly, temporal practice which has not yet fully explored the possibilities that could be opened up by adopting explicitly temporal ways of knowing and acting" (Laurian and Inch, 2019, p. 281). This paper heeds the call to more fully explore the importance of temporality in planning through a study of recruitment and resettlement of diverse immigrants into small cities and towns in Ontario, Canada. This mixed methods study draws on survey and interview data from key informants working within rural communities actively recruiting immigrant populations, as well as focus groups and interviews with newcomer populations who have or are in the process of resettling from urban into rural communities. The analysis highlights the contrast between community-based concepts of time and futurity with the personal temporal narratives and utopian visions of immigrants settling within those communities.

More specifically, the findings from staff and elected officials in rural communities illuminate how preoccupations with past timescapes (Degen, 2018) shape their plans for temporal transformations from a shrinking and stagnant community into a vibrant and 'welcoming' one. The temporal sense of 'becoming' (Grosz, 1998) is sought through social and economic policies prioritizing immigrant attraction and retention. From the perspective of immigrant participants, the promise of a previously unrealized utopian future in Canada was a primary driver for their decision to resettle outside of urban areas. Immigrants play with time in order to realize their own desire for socio-spatial belonging and personal 'becoming' (Grosz, 1998) in Canada.

This paper contributes to recent efforts to shed light on the role of time in planning theory as well as explore emergent issues in planning for diversity and difference (Burayidi, 2015; Qadeer, 2016). Specifically, the paper emphasizes the flexible constructions of time- slowing, pausing, speeding, imagining- that were implemented by communities seeking physical and social change towards and/or back to times of growth and vitality, and immigrants striving to settle,

integrate and belong in Canadian society. The paper concludes with a discussion of what the changing settlement patterns of immigrants means for planning communities of diversity and difference outside the cosmopolis.

Citations

- Burayidi, M. A. (Ed.). (2015). *Cities and the politics of difference: Multiculturalism and diversity in urban planning*. University of Toronto Press.
- Degen, M. (2018). Timescapes of urban change: The temporalities of regenerated streets. *The Sociological Review*, 66(5), 1074-1092.
- Grosz, E. (1998). Thinking the new: Of futures yet unthought. *sympleke*, 6(1/2), 38-55.
- Laurian, L., & Inch, A. (2019). On Time and Planning: Opening Futures by Cultivating a “Sense of Now”. *Journal of Planning Literature*, 34(3), 267-285.
- Qadeer, Mohammad Abdul. *Multicultural Cities: Toronto, New York, and Los Angeles*. University of Toronto Press, 2016.

Key Words: rural immigration and settlement, temporality, community well-being, becoming, planning for diversity and difference

SURVEYING THE TOPOLOGY OF PLANNING THEORY USING BIBLIOMETRIC ANALYSIS

Abstract ID: 1425

Individual Paper Submission

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A first-year planning graduate student once asked: What are the ten most influential planning theory journal articles? As scholars, we know that this question has no easy answer. Different approaches to planning theory produce different perspectives, reflected in the content and structure of planning theory course syllabi. Planning theory scholars in the Information Age have a new, powerful tool to help planning students grasp the complex, interconnected nature of planning theory thought: network analysis. The Google PageRank algorithm, which undergirds modern internet search engines, uses network analysis to provide a ranked list of results related to a search. Undoubtedly, many students (and scholars) have found it useful to google planning theory. As scholars and educators, we need to go further. This paper presents one approach, which is to construct a network diagram of planning theory thought using publication metadata from Scopus. I call this a survey of the topology of planning theory, which is a recurring theme in scholarly discussions of planning theory (Klosterman, 2011).

My paper shows how network diagrams built using bibliometric tools can be used to help planning theory educators and scholars explore, teach, and understand planning theories. In the paper, I build on the work of Friedmann (1987), who traced the major influences of planning theory stretching back to the 18th century, and successfully diagrammed the influential thinkers, schools of thought, disciplines, and their relationships. Like Friedmann's (1987) terrain of planning thought, bibliometric analysis provides a map of the terrain of planning theory based on publication metadata – a networked map. Bibliometric analysis, constructed from publication metadata, provides a useful method for exploring core themes, papers, researchers, and institutions engaged in planning theory.

This paper is relevant to planning theorists, scholars, and educators for several reasons. Bibliometric analysis provides a unique way to explore core themes in planning theory, understand different planning cultures, and discover trends, old and new, in planning theory. Bibliometric analysis of planning theory citation networks can help to explore questions around the evolving core of planning theory, as discussed in Beard & Basolo (2009). Network analysis of the different scholars, institutions, and countries that produce planning theory can help theorists to understand the different cultures of planning theory (Forsyth, 2012). Last, planning researchers are using bibliometrics to chart trends in planning. Daniel & Pettit (2022) used bibliometric methods to examine the growth of planning decision support systems. Such work provides scholars, educators, and practitioners a valuable window into the growth of a research trend or topic.

While bibliometrics often serves an evaluative function, I eschew this and present several findings from my paper meant to generate dialogue among students, scholars, and educators. I present three conclusions from my work that are therefore tentative, listed below:

- Planning theory operates in a core-periphery dynamic consistent with Bradford's Law and Lotka's Law;
- Planning theory is multi-paradigmatic and bibliometrics can articulate the conceptual networks of the paradigms; and
- Valuable new paradigms, scholars, or institutions in planning theory may be invisible to the wider network if not connected to a key node (i.e. journal, institution, co-author, or well-cited paper). Ultimately, the rapid increase in academic publications and journals makes it paramount to understand where new knowledge is being produced, the many journals planning theory is being published in, and the themes planning theory scholars are engaging with

across time.

Citations

- Beard, V. A., & Basolo, V. (2009). Commentary: Moving beyond crisis, crossroads, and the abyss in the disciplinary formation of planning. *Journal of Planning Education and Research*, 29(2), 233–242. <https://doi.org.proxy.library.cornell.edu/10.1177/0739456X09342555>.
- Daniel, C., & Pettit, C. (2022). Charting the past and possible futures of planning support systems: Results of a citation network analysis. *Environment and Planning B: Urban Analytics and City Science*. <https://doi.org/10.1177/23998083211072866>.
- Forsyth, A. (2012). Commentary: Alternative Cultures in Planning Research-From Extending Scientific Frontiers to Exploring Enduring Questions. *Journal of Planning Education and Research*, 32(2), 160–168. <https://doi-org.proxy.library.cornell.edu/10.1177/0739456X12442217>.
- Friedmann, J. (1987). *Planning in the public domain: from knowledge to action*. Princeton, N.J.: Princeton University Press.
- Klosterman, R. E. (2011). Planning Theory Education: A Thirty-Year Review. *Journal of Planning Education & Research*, 31(3), 319–331. <https://doi-org.proxy.library.cornell.edu/10.1177/0739456X11413601>.

Key Words: Planning theory, planning education, bibliometrics, planning theory paradigms

INDIGENIZING PLANNING: REFLECTIONS ON HOW COLONIAL PLANNING ENCOUNTERED THE INDIGENOUS CONSCIOUSNESS OF SPACE IN POSTCOLONIAL SRI LANKA

Abstract ID: 1434

Individual Paper Submission

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Our study examines the impact of nationalism, ethnic identities, and religious expressions of space on planning and place-making in postcolonial Ceylon (Sri Lanka since 1972). We investigate the first planned community in independent Sri Lanka, the New Town Plan of Anuradhapura, in 1949, in the context of Sinhala-Buddhist nationalists' conceptualization of their spatial identity. We approach the new Anuradhapura planning project as a ground-up knowledge-building project, demonstrating that planning is a critical instrument that can provide a spatial form to the ideological stances of nationalism.

Anuradhapura is the most-ancient capital city known to have existed on the Lankan territory, established circa 250 BCE. In the late 19th century, the British colonial government in Ceylon adopted Anuradhapura into the colonial administrative discourse by making it a regional capital. At the dawn of the 20th century, the leaders of the rising nationalist movement approached Anuradhapura. For them, it was a sacred space that held the virtues of Buddhism and the glory of their ancestors. Consequently, the nationalists saw the need to define the sacred area by removing the structures that served the daily routines, i.e., 'secular uses' of the inhabitants – schools, markets, shops, and offices – from the sacred site. This spatial separation reflects Buddhist activist beliefs in their authority to control their sacred space by removing the non-Buddhist practices from the site. However, their demand for spatial separation and the stamping of the Sinhala-Buddhist desire was politicized explicitly in the mid-20th century by an influential politician and later Prime Minister S.W.R.D. Bandaranaike (1899 – 1959), whose nascent political movement demanded Ceylon to become a Sinhalese only state. The Anuradhapura new town planning project thus marks the location where the colonial planning discourse met the national consciousness.

The study of Anuradhapura's new plan and the planning process enable us to understand the influencing ideologies such as Sinhalese-Buddhist nationalism, how they were negotiated, and the potential impact of the planning process. Accordingly, we examine the development of this project in the context of Buddhist nationalists' conceptualization of their sacred city. First, we delve into why Anuradhapura became crucial for the Ceylonese Government at the dawn of independence -why Anuradhapura was significant. Then, along with the actors who put up with the new planning scheme, we explore the perspectives that contested the new town's formation in Anuradhapura. Finally, the study demonstrates that Anuradhapura's planning provided a rationale for the nationalists' political claim for space, laying the basis of postcolonial spatial thinking in Ceylon. Furthermore, the study indicates that planning is inherently political that can be a means of liberation or oppression of the spatial expressions of the communities.

We draw on the scholarship on nationalism, colonialism, and postcolonialism, focusing on planning. It contributes to the broader planning scholarship of colonial and postcolonial urban spaces (Beebejaun 2021; Raychaudhuri 2001; King 2009; Perera 2008; Roy and Ong 2011). Methodologically the study consults archival materials such as British colonial administration reports, maps and statics of the colonial government, and correspondence between natives and colonial authority. Also, it rests on two extensive field studies in Anuradhapura in 2017 and 2019.

Citations

- Beebeejaun, Yasminah. 2021. "Provincializing Planning: Reflections on Spatial Ordering and Imperial Power." *Planning Theory*, August. <https://doi.org/10.1177/14730952211026697>.
- King, Anthony D. 2009. "Postcolonial Cities." In *International Encyclopedia of Human Geography*, edited by Rob Kitchin and Nigel Thrift, 321–26. London: Elsevier Inc.
- Perera, Nihal. 2008. "The Planners' City: The Construction of a Town Planning Perception of Colombo." *Environment and Planning A* 40 (1): 57–73.
- Raychaudhuri, Siddharta. 2001. "Colonialism, Indigenous Elites and the Transformation of Cities in the Non-Western World?: Ahmedabad (Western India), 1890-1947." *Modern Asian Studies* 35 (3): 677–726.
- Roy, Ananya, and Aihwa Ong. 2011. *Worlding Cities: Asian Experiments and the Art of Being Global*. Worlding Cities: Asian Experiments and the Art of Being Global. New Jersey: Wiley-Blackwell.

Key Words: Anuradhapura, Colonial Spaces, Indigenizing Planning, Nationalism, Place Making

EXPOSING AND HEALING THE RIFTS: THE POTENTIAL OF POST-COLONIAL PLACEMAKING

Abstract ID: 1443

Individual Paper Submission

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Planning in settler colonial societies has been critiqued as enabling an extractive and exclusionary approach to place that facilitates a sense of disconnectedness and alienation from landscape. Some would go as far to say that the settler-colonial city has been planned in order to sit "above place" (Davison, 2019), seeing landscape as a passive tabula rasa ripe for exploitation (Potter, 2012). In recent decades, placemaking has gained renewed popularity in Anglophone settler-colonial societies as a means of promoting vitality and a sense of connectedness in cities through interventions made at the fine-grained level. However, ambiguity remains around the aims and nature of placemaking practice. Further, there are enduring research gaps around the nature of placemaking in a settler-colonial context, leaving open questions about whether and how placemaking might seek to address the extractive and exclusionary foundations of settler-colonial planning.

In this paper, I explore the potential of a post-colonial conception of placemaking in the land known as Australia. I do so through my positionality as a second-generation settler of continental European ancestry in a land where First Nations renderings of Country as a nourishing terrain that holds all life endure beneath the concrete of the settler-colonial city (Porter, 2018; Greenaway et al, 2014; Bird Rose, 1996). The research involves autoethnographic field exploration of three placemaking interventions on Bunurong and Wadawurrung Country, in the cities now known as Melbourne (Naarm) and Geelong (Djilang). By uncovering the processes and impacts of placemaking interventions, the research reveals that ways of working are key to the sense of connectedness and community cohesion, which a placemaking intervention can promote. The research brings forward an ethic of practice in placemaking grounded in reciprocity, embodied connectedness and working to support the ability of place to hold life. In this research a "layered invitation" is put forward as a framework that details how placemaking processes can foster a deeper sense of shared dwelling and relationality that works against the grain of exclusionary and extractive planning approaches. The findings contribute to evolving conceptions of the importance and potential of placemaking in settler-colonial societies to foster a post-colonial ethic of care, healing and emergent possibility (Graham, 2008; Jacobs, 1996; Gandhi, 2018; Kimmerer, 2013).

Citations

- Barry, J., & Agyeman, J. (2020). On belonging and becoming in the settler-colonial city: Co-produced futurities, placemaking, and urban planning in the United States. *Journal of Race, Ethnicity and the City*, 1(1–2), 22–41. <https://doi.org/10.1080/26884674.2020.1793703>
- Graham, M. (2008). Some Thoughts about the Philosophical Underpinnings of Aboriginal Worldviews. *Australian Humanities Review*, 45, 181–194.
- Greenaway, J., McGaw, J., & walliss, J. (2014). *Designing Australia – Critical Engagement With Indigenous Place Making*. In G. Cairns (Ed.), *Design for a Complex World*. Libri Publishing.
- Potter, E. (2012). Introduction: Making Indigenous place in the Australian city. *Postcolonial Studies*, 15(2), 131–142. <https://doi.org/10.1080/13688790.2012.708315>
- Porter, L. (2018). From an urban country to urban Country: Confronting the cult of denial in Australian cities. *Australian Geographer*, 49(2), 239–246. <https://doi.org/10.1080/00049182.2018.1456301>

Key Words: Placemaking, Settler-colonialism, Post-colonial

THE PERIPHERY AS A FRONTIER: AUTHORITARIAN ENCLAVES IN RIO DE JANEIRO AND THEIR EFFECTS ON PLANNING.

Abstract ID: 1444

Individual Paper Submission

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This paper will illustrate how milícias are transforming the peripheries of Rio de Janeiro into frontiers of social, political, and economic difference, and analyze how this criminal organization challenges the planning field in this context. In the Global South, the periphery has been an important concept to understand how urbanization unfolded from the 20th Century onwards and to develop planning mechanisms to deal with inequality and segregation (e.g., the Zones of Social Interests). Commonly, peripheries are seen as the outskirts of cities, sites of urban informality, and for the relocation of “unwanted” populations. These conditions contribute to the peripheries’ exclusion but also lead to the formation of hybrid spaces, capable of absorbing tensions inherent in the intersection of substantially different ways of doing things, thus sites of hope, innovation, and agency. However, the involvement of milícias with urbanization in Rio de Janeiro challenges the understanding of the periphery as such.

Milícia is the Brazilian term used to refer to criminal organizations comprised of active and former state security agents, which offer or impose, various services for personal profit. They emerged in the 1990s in the peripheries of Rio de Janeiro, and like other criminal groups—such as drug traffickers—usually control the territory through violence. Territorial control is critical for them because they extract funds from rents and gain electoral power by forming electoral corrals electing themselves or their representatives to public office. Nevertheless, from the 2000s onwards, they became involved with space-making. Recent research shows that milícias already control more than half of Rio’s territory, and construction activity was higher in these areas in the last decade, which shows the scale and pace of this phenomenon.

Space-making by milícias refers to the production of ‘authoritarian enclaves’ (as I call them) that correspond to land occupations done through illegal land seizure and subdivisions for sale. In these enclaves, milícias are the rulers imposing social and behavioral norms, privatizing and monopolizing the provision of public services and infrastructure (e.g., security, water, and electricity), as well as blocking off avenues for political competition. In this context, I argue that Rio’s peripheries should be understood not only as hybrid, hopeful, and innovative spaces but also as frontiers of social, political, and economic difference where regimes of power and capital are in the process of reconfiguring space in their own image. This paper will illustrate the transformation of the periphery into a frontier through the analysis of São Bento, a neighborhood in the metropolitan region of Rio that milícias have urbanized since the beginning of the 21st Century. Additionally, it will discuss the effects of this transformation for the understanding of urbanization in the Global South and the challenges for the planning field in this context. This work counts with: (a) ethnographic material collected between 2019 and 2022, (b) a bibliographic review of the planning literature on peripheries and frontiers, and (c) archival research in local newspapers.

Citations

- Bou Akar, H. (2018). For the war yet to come: Planning Beirut’s frontiers. Stanford University Press.
- Caldeira, T. (2017). Peripheral urbanization: Autoconstruction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society and Space*, 35(1), 3–20. <https://doi.org/DOI:10.1177/0263775816658479>
- Holston, J. (2009). *Insurgent Citizenship: Disjunctions of Democracy and Modernity in Brazil*. Princeton University Press.
- Simone, A. (2010). *City Life from Jakarta to Dakar: Movements at the Crossroads*. Routledge.
- Rolnik, R. (2019). *Urban Warfare: Housing under the Empire of Finance* (G. Hirschhorn, Trans.). Verso.

Key Words: Peripheries, Frontiers, Authoritarian Enclaves, Global South, Criminal Organizations

“GROWTH IN ALL DIRECTIONS”: PLANNING THOUGHT AND URBAN EXPANSION IN PRINCE GEORGE FROM 1946 TO 1981

Abstract ID: 1448

Individual Paper Submission

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The objective of this paper is to contribute to the understanding of the concepts and forces shaping urban planning in cities in Canada's provincial north. Focusing on post war urban development in Prince George British Columbia, we re-examine two dominant planning models that shaped urban development in cities across Canada in the 20th century. More specifically, we situate Howard's Garden City model and Perry's Neighbourhood Unit concept as direct and significant forces behind the urban development patterns that shaped what would become British Columbia's northern capital.

Existing literature links the development of the Grand Trunk Pacific to the City Beautiful movement and offers insights into how these forces contributed to the initial establishment of Prince George as a colonial urban settlement in northern British Columbia (Hodge and Robinson 2001). In this paper, we turn our attention to the topic of urban planning during the significant wave of population growth and urban expansion that occurred in Prince George over a roughly 30-year period following WWII.

We examine the planning literature related to the Garden City and Neighborhood Unit concepts to establish a context for understanding how these planning ideas shaped urban development in northern Canada. This includes examining theoretical and empirical contributions to the planning literature, particularly as they relate to the normative development outcomes sought under each concept, the planning tools used to pursue these goals, and the benefits and points of contention that scholars associate with each concept.

We examine archival evidence in the form of historical planning maps, policy and reports that illustrate how the Garden City and Neighbourhood Unit emerged in urban planning thought in a northern context, and how these concepts shaped physical urban space. Principles drawn from these theories anchored a vision for urban growth as early as 1946 in a plan prepared by the Regional Planning Division of the Bureau of Post-war Rehabilitation and Reconstruction. Their use continued and crystallized in a growth initiative in the mid-1970s that rationalized urban expansion to accommodate a future population that would never come. Using a range of contemporary and retrospective media sources, we also illustrate public sentiment related to planning during this period of notable change.

The present-day consequences of the historical influences we discuss are outside the scope of this paper. However, we acknowledge these influences as an ongoing element shaping the present-day urban challenges in many of Canada's northern cities. Post war urban development and the planning concepts that informed it are an ever-present reality for communities seeking to address urban sustainability and climate resilience, population health and equality, and a growing imperative to contribute to decolonization of urban settlements and planning practice. Our work informs a clearer understanding of how planning ideas helped to define the physical context of settlement within a defining period of urban expansion in Canada's north.

Citations

- Banerjee, T. & W. C. Baer. (1984), *Beyond the Neighbourhood Unit. Residential Environments and Public Policy*. Plenum Press, New York.
- Brody, J. (2013), 'The neighbourhood unit concept and the shaping of land planning in the United States 1912-1968', *Journal of Urban Design*, 18, 340-62.
- Grant, J. (1997). *Next Generation Neighbourhoods: Finding a Focus for Planning Residential Environments*. *Canadian Journal of Urban Research*, 6(2), 111-134.
- Mumford, L. (1954), 'The neighborhood and the neighborhood unit', *Town Planning Review*, 24, 256-70.
- Talen, E. (2017). *Social science and the planned neighbourhood*. *Town Planning Review*, 88(3), 349.

Key Words: neighbourhood unit, postwar urban growth, postwar north, garden city

HENRY WRIGHT PLANNING PIONEER

Abstract ID: 1453

Individual Paper Submission

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The years before Henry Wright's partnership with Clarence Stein were among the most productive of his career. Wright adopted an integrative and holistic approach to planning as the profession itself was emerging in the early 20th century. Shortly after earning his architecture degree, he relocated to St. Louis while working with nationally prominent landscape architect George Kessler, bringing him in direct contact with civic leaders agitating for city improvements. Though he continued his design practice, he began reinventing himself as a planner, and his evolution as he grew into the profession can be traced to these early years in St. Louis.

First, he contributed in 1902-03 to Kessler's design of an urban park and boulevard network, which reflected an

understanding of street function, land use adjacencies, and the role and impacts of parks. Wright then advanced his planning expertise by more fully combining social and physical planning as primary researcher and author on a committee report to the 1907 St. Louis Plan, which he parlayed into being the primary author of a 1911 report advocating adoption of a comprehensive city plan. The growing recognition of his planning expertise at the national level combined with his ongoing role in St. Louis led to his appointment as Town Planning Assistant with the Emergency Fleet Corporation in 1918. Following the war, when he returned to St. Louis, Harland Bartholomew, whom Wright helped attract to the city in 1915 to serve as its engineer, chose Wright as the city architect to continue shaping its planning documents. That role concluded shortly before Wright relocated to New York City in 1923 to join Clarence Stein's Architects Associated and the newly formed Regional Planning Association of America (RPAA).

Using primary and secondary sources, including unpublished papers and plans, correspondence, writings, and accounts from the period, this study focuses on critical junctures during Wright's early career to inform our understanding of his planning ethic. It applies an interpretive-historical methodology to contextualize and critique this archival material. Wright distinguished himself as a planning pioneer – contributing to the profession significantly earlier than widely acknowledged or understood. His planning philosophy, matured by his over 20-year career in St. Louis, complemented and enhanced the focus of the RPAA. He contributed an advanced understanding and treatment of site design/engineering, planning, transportation networks, land development, and cost analysis.

Unlike his fellow architects, Wright moved fluidly between the planning, design, and development professions, recasting himself to respond to the context and challenges before him. His projects; site design consulting; public practice, piloted at the local and federal levels; and handful of writings during these early years attest to a philosophy that function, not aesthetics, should guide the architect. For him, a multi-scalar approach was essential – the efficient flow and healthful enjoyment of living spaces determined the layout of an individual unit that became the building block, along with the green and transportation networks, civic spaces, and commercial uses, of the community. This expertise is evident in his collaborations with Stein and other members of the RPAA. Not surprisingly, his resume indicates his position as Town Planner on the landmark projects of Sunnyside Gardens in Queens; Radburn, New Jersey; and Chatham Village in Pittsburgh.

Citations

- Berke, Philip R. 2008, "The Evolution of Green Community Planning, Scholarship, and Practice", *Journal of the American Planning Association* 74(4): 393-407.
- Civic League of Saint Louis, *A City Plan for Saint Louis: Reports of the Several Committees Appointed by the Executive Board of the Civic League to Draft a City Plan* (St. Louis: The Civic League of Saint Louis, 1907).
- Larsen, Kristin E. *Community Architect: The Life and Vision of Clarence S. Stein*. Ithaca, NY: Cornell University Press, 2016.
- Stein, Clarence S. *Toward New Towns for America*. Cambridge: The M. I. T. Press, 1957.
- Wright, Henry. *Rehousing Urban America*. New York: Columbia University Press, 1935.

Key Words: Planning History, New Towns, Community Planning, Regionalism

REVIVING THE VISUAL DISPLAY OF PLANNING THOUGHT AND IDEOLOGIES: A CRITICAL REAPPRAISAL OF PLANNING'S VISUAL HISTORY AND THE VALUES EMBEDDED IN TRADITIONAL PLANNING DIAGRAMMS

Abstract ID: 1491

Individual Paper Submission

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This paper examines the underestimated influence of graphic visualizations in shaping and codifying planning thought. We employ diagrams to reinforce and crystalize planning ideas, and assume they are a neutral mirror of the text. But they often have a life of their own. They frame debates, steer thinking, and tacitly constrain or expand our planning imagination. As a spatial field and as applied social scientists – and as prolific producers and consumers of maps, plans and charts – planners consider themselves as doubly savvy visual thinkers. Yet our field often uncritically views these graphics as unproblematic, passive illustrations of planning ideas.

I explore two arguments: First, diagrams shape our thinking more than we likely admit, and have unintended consequences. The relationship between visual representations and theories (typically in text and narrative format) is two-way and dynamic. We should therefore curate our use of planning's historical diagrams – and draw new diagrams – with as much critical reflection as we choose our words and tabulate our data. Second, if we seek to revitalize planning theory (not just as a specialization within planning, but also as the shared forum where we debate planning-wide values and concepts), then we are well advised to critically also rethink our visuals: to lead this reinvigoration of planning theory with graphical and not just textual arguments.

I revisit the standard portfolio of diagrams in introductory courses and textbooks. (I focus on the visualization of planning ideas, rather than the visualization of plans and related reference or thematic maps, illustrations, photographs, data tables and charts — except when the latter are used to make conceptual arguments.) It's a familiar list: Howard's Garden City (1898); Geddes' "valley section" (1909); Burgess's concentric zones (1925); bid rent curves; HOLC's "redlining" maps (1930s); Corbusier's radiant city (1933); NRPB regional maps (1930s); Isard's regional science hexagons (1956); Interstate highway map (1956); Jean Gottmann's megalopolis (1961); Neil Smith's gentrification "rent-gap" (1979); Friedmann's world city map (1986); DPZ's transect (1997); etc.

This chronology of influential graphics provides only a partial and outdated visual history of planning. What voices and ideas are excluded? These images lean with a deference to clear lines, networks, simplification: modernist infrastructure; idealized visions of efficient mobility; stylized urban economics; aspirational models of "balanced" metropolitan systems — either urban/suburban/rural or the "three Es." This graphical vocabulary fails to engage the breadth and array of planning ideas. Important debates within planning theory (e.g., advocacy & communicative action, postcolonialism, social & environmental justice) frequently lack a visual language to drive our thinking.

Can one conclude that planning has grown less visual over time (GIS notwithstanding) and much of planning theory isn't suitable for graphic argumentation? That debates about power, institutions, governance, racism and gender are most effectively engaged through oral and written rhetoric? (A review of planning theory articles confirms this text-centric focus, whose figures are often wordy, unmemorable tables with detailed taxonomies of concepts, variables and actors.) But though planning continues to expand its disciplinary scope into social concerns, we are a discipline that invariably translates these issues into problems of land, property, boundaries and communities — and the primary language of space is the visual language of maps, plans and diagrams, with either existing, projected or idealized land uses. It is not just the explicitly spatial specializations of land use, urban design and transportation planning, but also planning theory, that needs a robust arsenal of communicative and analytical tools — including visualization.

The goals of this paper are thus to both critique the traditional use of diagrams in planning's intellectual history and promote a more critical and reflective visual thinking in contemporary planning theory.

Citations

- Hein, C. (2019). What's in a cover image? How to depict planning history. *Planning Perspectives*, 34, 1-11.
- Moroni, S., & Lorini, G. (2016). Graphic rules in planning: A critical exploration of normative drawings starting from zoning maps and form-based codes. *Planning Theory*, 16(3), 318-338.
- San Francisco Planning and Urban Research Association (SPUR). "Grand Reductions: Ten diagrams that changed urban planning." Exhibit. San Francisco, CA.
- Söderström, O. (1996). Paper Cities: Visual Thinking in Urban Planning. *Ecumene*, 3(3), 249-281.
- Tufte, E. (1983). *The Visual Display of Quantitative Information*. Cheshire, Conn: Graphics Press.

Key Words: planning theory, planning history, visualization, maps, visual thinking

WHAT IS URBAN TRANSPORT PLANNING? EXPLORING PLANNING THROUGH A POST-FOUCAULDIAN GOVERNMENTALITY FRAMEWORK

Abstract ID: 1532

Individual Paper Submission

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"What is planning?" is a question regularly contested in planning scholarship (Alexander, 2016; Fischler, 2012). Theorisation usually concerns land-use planning; rarely are other domains of planning used as a departure point. This research examines the question of what planning is by reflecting instead on transport planning — a field whose practice and research alike is often associated with quantitative, techno-rationalist mindsets drawn from statistics and civil engineering.

This research uses a framework drawn from the governmentality scholarship (Dean, 2010). We draw on semi-structured interviews with over forty transport planning actors in the Melbourne (Australia) and Toronto (Canada) regions, in which interviewees were asked, "what is urban transport planning?". These responses are supplemented by transport planning documentation produced between 2000 and 2018.

The findings highlight key features of transport planning, as understood by those who practise, including transport planning's concern with the movement of people (and goods), its use of a central set of technologies, its interest in spatiality and temporality, and its desire to improve. As such, the paper argues that urban transport planning is a contemporary, contingent manifestation of the Foucauldian concept of government — "the conduct of conduct" (Dean,

2010) – focused chiefly on the optimisation of the circulation of the population within a calculable territory.

The contributions of this paper to planning scholarship are twofold. Firstly, the paper offers a development of the conversation about what planning is by applying a novel theoretical framework, governmentality: an approach well suited to engaging the tensions and paradoxes at the heart of planning (Fischler, 2012; Raffnsøe et al., 2016). Secondly, our paper responds to invitations in the literature for further critical research examining how urban transport planning is practised (Marsden & Reardon, 2017). An understanding of what planning is using a governmentality framework will allow for greater engagement in questions of the operation of power in urban and transport policy.

Citations

- Alexander, E. R. (2016). There is no planning—only planning practices: Notes for spatial planning theories. *Planning Theory*, 15(1), 91-103. <https://doi.org/10.1177/1473095215594617>
- Dean, M. (2010). *Governmentality: Power and Rule in Modern Society* (2nd ed.). Sage.
- Fischler, R. (2012). Fifty theses on urban planning and urban planners. *Journal of Planning Education and Research*, 32(1), 107-114. <https://doi.org/10.1177/0739456x11420441>
- Marsden, G., & Reardon, L. (2017). Questions of governance: rethinking the study of transportation policy. *Transportation Research Part A: Policy and Practice*, 101, 238-251. <https://doi.org/10.1016/j.tra.2017.05.008>
- Raffnsøe, S., Gudmand-Høyer, M., & Thaning, M. S. (2016). Foucault's dispositive: the perspicacity of dispositive analytics in organizational research. *Organization*, 23(2), 272-298. <https://doi.org/10.1177/1350508414549885>

Key Words: governmentality, transport planning

EVOLUTION OF URBAN PLANNING TERMINOLOGY OVER TIME: A BIG DATA EXPLORATION OF WORD USE IN AMERICAN ENGLISH BOOKS

Abstract ID: 1536

Individual Paper Submission

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Like any field, urban planning has terminology used to represent the ideas and concepts of the field. Terminology changes over time as ideas appear, fade, and evolve. The emergence of “big data” allows for the study of terminology in ways that are difficult, if not impossible, to do previously. Michel, et al. (2010) discuss the creation of a massive digital “corpus,” or collection of text, containing all the words in over five million digitized books. That corpus is searchable using the Google Books Ngram Viewer.

Michel, et al. describe “high-throughput” quantitative analysis of culture, such as word study through the corpus, as the field of “culturomics.” Since being published, authors in many disciplines have utilized the corpus to explore their sub-cultures, including planning-adjacent fields such as landscape architecture (Antrop and Van Eetvelde, 2017) and environmental, civil, and transportation engineering (Leary, et al., 2011). This study performs a culturomic exploration of urban planning terms and concepts referenced in the American English portion of the Michel, et al. corpus through 2019. Some notable findings include:

References to planning in books peaked in 1974: Terms referring to the field of planning emerged in the dataset around 1900. References to the field grew as a proportion of all words in books from then until 1974, when reference share began dropping precipitously. By this metric, urban planning has become a relatively less prominent feature of societal discourse since the 1970s.

Zoning = planning?: Zoning is by far the most frequently used planning term in books, mentioned more often than the field of planning itself. As of 2019, zoning appears approximately once out of every 2,500 words in the corpus.

Planning ideas go viral and fade, but don't disappear: Some concepts, when new, rapidly increase in popularity. The City Beautiful and Garden City movements rose quickly in the early-1900s, as did urban renewal in the 1950s and 1960s. Frequency of mentions for all these terms eventually greatly decreased, but not entirely. This indicates a level of reflectiveness in planning in that past ideas still get discussed, even those no longer in vogue.

Visualizing book mentions highlights sequential relationship of ideas: Some ideas in planning can arise as a response to previous trends. Graphing book mentions can highlight such relationships. For example, two affordable housing production strategies, inclusionary zoning and density bonuses, emerged in the 1980s. Both appear following a similar sized emergence in mentions of downzoning, a housing constraint, 10 years earlier.

Notable urban figures referenced as much as less famous US presidents: The most frequently mentioned people related to urban planning, such as Lewis Mumford, Robert Moses, and Jane Jacobs have been discussed in books in recent years about as frequently as the least mentioned US presidents, such as Chester A. Arthur and Millard Fillmore.

Overall, while the corpus/nGram viewer is a relatively simple tool, it allows exploration of planning trends in a quantitative way. Graphs based on the data allow for visualizations on the evolution of planning ideas. Additionally, the corpus' scope covering books of all topics allows for the exploration of planning not just within the field itself, but also in comparison to ideas in society as a whole.

Citations

- Michel, J.-B., Shen, Y. K., Aiden, A. P., et al. (2011). Quantitative Analysis of Culture Using Millions of Digitized Books. *Science*, 331(6014), 176-182. doi:10.1126/science.1199644
- Leary, M., Pearson, G., Burvill, C., Mazur, M., & Subic, A. (2011). N-gram Analysis in the Engineering Domain. International Conference on Engineering Design. Copenhagen.
- Antrop, M., & Van Eetvelde, V. (2017). The History of Landscape Research. In *Landscape Perspectives: The Holistic Nature of Landscape* (pp. 11-34). Dordrecht, Netherlands: Springer.

Key Words: culturomics, planning history, big data

HOW THE CATHOLIC CHURCH PLANNED NEIGHBORHOODS MIDST RACIAL AND RELIGIOUS TENSION IN TWENTIETH-CENTURY DETROIT

Abstract ID: 1590

Individual Paper Submission

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This paper reinterprets the history of Detroit by examining a powerful institution that planned the city around parish neighborhoods but has nevertheless been neglected by urban planning: the Catholic Church. I investigate how twentieth-century Catholic parish neighborhoods in Detroit paradoxically served as both places of refuge for European Catholic immigrants against a hostile Protestant national landscape and tools for excluding Black migrants arriving from heavily-Protestant regions of the American South. Despite the Catholic Archdiocese's declarations of racial and religious inclusion, Black residents were often, but not always, excluded from parish neighborhood facilities, most notably parochial schools, which was seen by both Catholics and non-Catholics as vehicles for economic mobility. However, other parish neighborhoods created innovative plans that wove the calls for racial integration with collective decision-making and the physical design of shared space.

Rooted in historical research, this paper asks a question vital to contemporary planning: How do planners make decisions when there are multiple, often opposing, perceptions of space, particularly in relation to racial and religious identities? Through analysis of both academic and religious archival sources and oral histories with clergy, parishioners, and parochial school students, this paper finds that while the Catholic Church was an umbrella institution, the strength of the individual parish neighborhood allowed Catholics to determine inclusionary and exclusionary actions on a local scale. Moreover, through digital humanities mapping methodologies, this paper finds that this Catholic concept of space sharply contrasts with Detroit's myriad Protestant denominations that did not define membership by geography but rather through networks of church communities. Through oral histories, I have found that both Black and White Catholics claimed a sense of ownership over the parish and negotiated, on the parish level, actions for or against racial integration. According to former parishioners, these various segmented efforts are often overshadowed by singular monolithic narratives of the Civil Rights movement.

This paper focuses on two scenarios of how parish neighborhoods reacted to religious and racial change and tension. The first scenario investigates how some parishes paradoxically transitioned from places of refuge to tools for exclusion. For example, the parishioners at St. Albertus, the first Polish parish in Detroit, opposed racial integration, using the lack of Polish language skills as the reason. Through demographic analysis and the mapping of buildings over time, I found that these circumstances often led to sudden departure as a parish unit in tandem with the closure of neighborhood facilities. The second scenario examines how Catholic parishes intervened against exclusionary attitudes both within the Catholic Church and as an antidote to exclusionary tools such as redlining and restrictive covenants by setting up parishes as models of integration. During the 1950s, the Archdiocese set up Gesu parish as a model of integration, hosting interfaith meetings and partnering with Black and non-Catholic residents to integrate its parochial school. The strategic placement of community amenities, such as playgrounds, between Black and White neighborhoods sometimes led to interaction and the eventual merging of communities and parish resources.

While much has been written about Detroit's Black-White urban-suburban divide, this project narrows in on how the neighborhood space is tied to both religion and race. In today's cities, where one lives shapes one's ability to access

quality resources and services such as schools, recreational and community space, social services, and health facilities—services that the Catholic Church once provided in neighborhoods across Detroit. By expanding the paradigm of urban planning to include religious institutions, this paper reveals how, by finding tangible ways to enact the call for inclusion, some communities hoped for, imagined, and, in some cases, succeeded in building an alternative future for their neighborhood.

Citations

- Manouchehrifar, Babak. "Is Planning 'Secular'? Rethinking Religion, Secularism, and Planning." *Planning Theory & Practice* 19, no. 5 (October 20, 2018): 653–77. <https://doi.org/10.1080/14649357.2018.1540722>.
- Thomas, June M. "Integrating the Spiritual and the Practical." *Planning Theory and Practice* 7, no. 1 (March 2006): 93–95. <https://doi.org/10.1080/14649350500497521>.
- McGreevy, John T. *Parish Boundaries: The Catholic Encounter with Race in the Twentieth-Century Urban North*. Historical Studies of Urban America. Chicago: University of Chicago Press, 1996.
- Dillard, Angela. *Faith in the City: Preaching Radical Social Change in Detroit*. Ann Arbor: University of Michigan Press, 2007.
- Thomas, June Manning. *Redevelopment and Race: Planning a Finer City in Postwar Detroit*. Creating the North American Landscape. Baltimore: Johns Hopkins University Press, 1997.

Key Words: Race, Religion, Neighborhood, Inclusion, Digital Humanities

DISASTERS, PLANNING AND COLONIAL EXPERIMENTATION IN PUERTO RICO

Abstract ID: 1605

Individual Paper Submission

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As an “unincorporated territory” of the United States, Puerto Rico has endured the imposition of numerous governance experiments, designed and implemented by Federal authorities, that have perpetuated a highly unequal colonial relationship. Previous scholarship (Torruella 2018) has underscored how a handful of legal frameworks, from the Foraker Act of 1900 (which established a civilian colonial government in the island) to the 2016 passing of the Puerto Rico Oversight, Management and Economic Stability Act (PROMESA) (which imposed a control board to address numerous fiscal woes), have been instrumental in helping build and expand colonial rule for over a century. This paper takes these ideas as a point of departure to explore how colonial experimentation has continued throughout the island’s bankruptcy and post disaster process through a series of rules, programs and policies that aim to structurally adjust the local economy and “build back better” the damage caused by a string of storms and earthquakes. Through historical research, it demonstrates how planning, and a distinct planning mentality (Boyer 1997) has played a fundamental role in this long experimental tradition (Hansen 1953, Tugwell 1968). The paper also explains how the simultaneous deployment of austerity initiatives and a massive reconstruction effort— a unique “experiment” with few or no parallels—is generating new planning challenges and increasing vulnerabilities in the midst of mounting disasters. Interestingly, despite the widespread debate and media attention to Puerto Rico’s reconstruction and bankruptcy process, many of these critical planning issues are rendered invisible through the strategic use of technocratic discourse and approaches like “resilience planning” and “risk management” (Vale and Campanella 2005, Roy 2011). Furthermore, the analysis shows how some grassroots communities are responding and collectively building a community-driven recovery infrastructure that hopes to ensure that the historically marginalized and most vulnerable are treated with dignity and are also empowered politically.

Citations

- Boyer, Christine M. 1997. *Dreaming the rational city: the myth of American city planning*. Cambridge, Mass: MIT Press.
- Roy, Ananya. 2011. “Urbanisms, worlding practices and the theory of planning”. *Planning Theory*. 10 (1): 6–15.
- Torruella, Juan R. 2018. "Commentary, Why Puerto Rico Does Not Need Further Experimentation with Its Future: A Reply to the Notion of “Territorial Federalism”, 131 *Harvard Law Review Forum* 65.
- Tugwell, Rexford G. 1968. *The stricken land: the story of Puerto Rico*. New York: Greenwood Press.
- Vale, Lawrence J., and Thomas J. Campanella. 2005. *The resilient city: how modern cities recover from disaster*. New York: Oxford University Press.

Key Words: Puerto Rico, Colonial Experimentation, Resilience, Austerity, Post Disaster Reconstruction

THE PROBLEM WITH "WICKED PROBLEMS"

Abstract ID: 1660

Individual Paper Submission

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Recent urban planning research has resulted in an understanding of cities as complex adaptive systems (Skrimizea et al., 2019). This perspective views cities as “complex interacting systems” which generate “wicked problems” that resist general planning strategies and make the prediction of outcomes impossible (Goodspeed, 2020; Zellner & Campbell, 2015). Accordingly, Goodspeed (2020) argues that the challenges posed by climate change, technological change, and sustainability goals “requires breaking from past planning approaches” (Goodspeed, 2020, p. viii). The traditional – or rational – planning approach ignores the future’s radical uncertainty, and problematically extends current trends using projections or forecasts. This has led, and continues to lead, to serious planning failures (Goodspeed, 2020).

This argument depends on blaming planning’s failures on the rational and systems planners that considered cities as closed systems capable of scientific management. Instead, cities understood as open systems should be viewed as fundamentally unpredictable, and planning must be a collaborative effort to foster better decisions in the face of uncertainty. The dilemmas posed by the uncertainty of planning for open systems are, of course, what Rittel and Webber (1973) famously called “wicked problems”.

Recently, many planners sharing this perspective (see Goodspeed 2020; Zellner & Campbell, 2015) have returned to this – seemingly – devastating critique of rational and systems planning. But, today’s rediscovery of wicked problems begs several questions. First, why now? Second, if the line of critique opened up by the discovery of wicked problems is so devastating, why was it not initially more successful in eliminating rational planning as the dominant approach to planning? The very existence of contemporary critiques of rational planning demonstrates that the approach remains entrenched at the top of the planning discipline. If the initial wicked problems critique was not successful to move planning beyond the rational approach, why not? What are the reasons we think it would be now? In other words, have the conditions under which cities are planned changed to make it more or less likely that the wicked problems paradigm will enable the move beyond the rational planning paradigm?

To address these questions, I offer a reassessment of the original “wicked problems” framework. This study grounds Rittel and Webber’s intervention in the historical context from which it emerged, going beyond “Dilemmas in a General Theory of Planning” (1973), to analyze both Rittel’s and Webber’s work leading up to, and following, their seminal publication. Analysis of lesser-known publications reveals both authors deep commitment to cybernetics as a scientific approach to explain the behavior of urban systems. As a result, and against the grain of dominant understandings, I read Rittel and Webber’s famous intervention as a contribution to the rational or systems planning approach. In this sense, Rittel & Webber (1973) elaborates the kinds of insights cybernetics can offer a rational planning which must exercise some form of urban control despite fundamental uncertainty. I determined that the form of control advocated by both Rittel and Webber involves the substitution of design (especially design of planning process) solutions over state-directed solutions to urban social problems.

Two paradoxes emerge as a result of this reassessment. First, the scope of problems facing cities and society today would seem to demand the kind of large-scale, state-led interventions that the wicked problems framework has discredited. And second, as recent scholarship has demonstrated, this ‘new’ complex systems planning approaches to understanding cities is itself indebted to the scientific insights of cybernetics (Krivý, 2018), an intellectual debt it shares with rational and systems planning. Given these, it is urgent that we critically examine such problematic connections to ‘traditional’, rational planning approaches at the moment of the planning’s supposed break from it.

Citations

- Goodspeed, R. (2020). *Scenario Planning for Cities and Regions: Managing and Envisioning Uncertain Futures*. Lincoln Institute of Land Policy: Cambridge.
- Krivý, M. (2018). Towards a critique of cybernetic urbanism: The smart city and the society of control. *Planning Theory*, 17(1), 8–30. <https://doi.org/10.1177/1473095216645631>
- Rittel, H., & Webber, M. M. (1973). Dilemmas in a General Theory of Planning. *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/BF01405730>
- Skrimizea, E., Haniotou, H., & Parra, C. (2019). On the ‘complexity turn’ in planning: An adaptive rationale to navigate spaces and times of uncertainty. *Planning Theory*, 18(1), 122–142. <https://doi.org/10.1177/1473095218780515>
- Zellner, M., & Campbell, S. D. (2015). Planning for deep-rooted problems: What can we learn from aligning complex systems and wicked problems? *Planning Theory & Practice*, 16(4), 457–478. <https://doi.org/10.1080/14649357.2015.1084360>

Key Words: Wicked Problems, Rational and systems planning, Urban cybernetics, Design, Complex systems

REGULATION BY DATAFICATION: RELATIONS OF INFRASTRUCTURES AND PLATFORMS IN URBAN MOBILITY

Abstract ID: 1710

Individual Paper Submission

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Planning practice has a long history of turning to new kinds of data to generate knowledge of the city. In this paper, I examine how data is not just a way to learn about the city, but a means by which the city is ordered and bounded. Drawing from research on the case of “new mobility,” understood broadly as the expansion of digital tools for managing urban transportation, I show that digital architectures have roles in envisioning and regulating the city comparable to those of plans and policies.

New mobility is characterized by partnerships involving local DOTs and transit agencies contracting with mobility service providers, especially ride-hailing and bikeshare companies. The traditional approach to public-private partnerships asks how such profit-driven firms can be regulated so that their innovative products and efficient operations can be channeled towards the public interest that government sets out to protect. However, I argue that this perspective can be enriched by seeing these organizational incentives together with a closer attention to the differences in their tools. Specifically, planners work within an infrastructure paradigm, while many of the new mobility providers are shaped by Silicon Valley’s platform paradigm. The view of public-private partnerships that focuses on distinguishing between investors and citizens fails to capture the differences between the workings of platforms and infrastructures in shaping socio-material relations, a contrast that the datafication of mobility has highlighted.

My analysis of these trends within transportation planning is shaped by STS-informed work on infrastructure studies as well as media studies literature on digital platforms. Infrastructures, including systems like an energy grid or a bus network, are shaped by ideas of distribution and consumption. This leads to regulatory efforts focused on achieving objectives of universal or equitable service provision. Platforms, whether for social media or for transportation, are interested instead in what their participants generate, including web content and personal data. Their development is focused on seeing and capturing such activity, without explicit concern for the end state. Digital data is at the center of this platform, as it allows both visibility and control at scale. For urban mobility, these two paradigms align with two types of regulation. One is the familiar boundaries of policy, which envisions an outcome (e.g., an accessible and equitable bikeshare system) and creates requirements and prohibitions to move various actors towards that goal. The other, newer type of regulation is datafication, by which I mean the rendering of previously informal relations as structured data according to specified rules. Datafication governs how elements connect, and so it begins from a center and works outward. Its interests are in facilitating exchange and increasing legibility.

This study—involving qualitative analyses of data specifications, software development, municipal permits, and policy documents—shows datafication and policy working together in novel ways, both controlling means of connection from the inside and envisioning ends from the outside. While the historical origins of these paradigms in public policy and tech startup culture align them with public and private sector actors, I find that they are increasingly blurred across types of organizations in planning practice. The case of new mobility shows why planning needs to pay attention to the political and regulatory functions of datafication.

Citations

- Barns, S. (2020). Platform Urbanism: Negotiating Platform Ecosystems in Connected Cities. Springer Singapore. <https://doi.org/10.1007/978-981-32-9725-8>
- Graham, S., & Marvin, S. (2001). Splintering urbanism: Networked infrastructures, technological mobilities and the urban condition. Routledge.
- Helmond, A. (2015). The Platformization of the Web: Making Web Data Platform Ready. *Social Media + Society*, 1(2), 1–11. <https://doi.org/10.1177/2056305115603080>
- Krivy, M. (2016). Towards a critique of cybernetic urbanism: The smart city and the society of control. *Planning Theory*, 1473095216645631. <https://doi.org/10.1177/1473095216645631>
- Plantin, J.-C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2018). Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*, 20(1), 293–310. <https://doi.org/10.1177/1461444816661553>

Key Words: infrastructure, platforms, datafication, public-private partnerships

THE EVOLUTION OF EMINENT DOMAIN FOR SLUM CLEARANCE: THE ROAD FROM WASHINGTON, D.C.’S ALLEYS TO BERMAN V. PARKER

Abstract ID: 1717

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In the 1954 *Berman v. Parker* case, set in Southwest Washington, D.C. (DC), the Supreme Court granted state governments sweeping powers of eminent domain: The constitutional requirement that government acquisition of private property be for “public use” could be met if the legislature could claim any plausible benefit to the public. This landmark case provided the legal scaffolding for midcentury urban renewal – which razed entire neighborhoods, often for privately-run amenities and housing aimed at upper- and middle-income residents, and was dubbed “Negro removal” for the massive and disproportionate displacement of Black communities (Fullilove, 2001). Although this important case has attracted much scholarship, including attention to its historical context (Lavine, 2010), there is little research into the preceding evolution of eminent domain in DC which laid its foundation. The case emerged from a local context of struggles over slum clearance and public housing on increasingly large scales, originating in efforts to eradicate alley communities inhabited by impoverished Black residents. In this paper, I track the step-by-step development towards the expansive powers permitted in *Berman* across DC’s housing and redevelopment agencies, illuminating the gradual transformation to a broad interpretation of “public use.” In particular, I demonstrate the inequitable burden of this interpretation on Black residents from its roots in alley clearance, foreshadowing the racial inequities of urban renewal.

Only twenty years before *Berman*, it was unclear whether the government had the power to exercise eminent domain over slums at all, let alone hand over land for privately-run projects with private use. Slum clearance and corresponding public housing were the key issues around which eminent domain jurisprudence underwent a rapid and striking transformation from requiring that land seized by eminent domain be accessible and usable by the public (Fogelson, 2001; Pritchett, 2003). As eminent domain’s use evolved and expanded across city authorities, the size of the targeted communities and the role of the private sector grew. DC is not merely a representative case, but served as a critical laboratory where novel approaches to eminent domain were tested and tweaked.

This case study not only sheds light on how a permissive interpretation of “public use” evolved to permit large-scale destructive urban renewal programs, but also lays bare the risks linked to it from its origins. I show that surrendering firm guidelines around public access and rights opened the door for subjective preconceptions and private profit-driven interests to suffuse determinations of what constituted “blight” and what subsequent uses of acquired property were appropriate – particularly racialized constructions of property value. Black residents ultimately not only bore disproportionate burdens of displacement, but were also shut out of the benefits of the ostensible public purpose. The central importance of eminent domain as a land use tool for urban planning lends urgency to the need to recognize how the interests and preconceptions of dominant actors have been built into it from its foundation, at the expense of the most marginalized.

Citations

- Fogelson, R. M. (2001). *Downtown: Its Rise and Fall, 1880-1950*. Yale University Press.
- Fullilove, M. T. (2001). Root shock: The consequences of African American dispossession. *Journal of Urban Health*, 78(1), 72–80.
- Lavine, A. (2010). Urban Renewal and the Story of *Berman v. Parker*. *The Urban Lawyer*, 423–475.
- Pritchett, W. E. (2003). The “public menace” of blight: Urban renewal and the private uses of eminent domain. *Yale Law & Policy Review*, 21(1), 1–52.

Key Words: Eminent domain, Slum clearance, Urban renewal, Displacement

IS CLIMATE CHANGE CHANGING PLANNING? THOUGHTS ON THE CURRENT ERA OF CLIMATE CHANGE PLANNING IN THE TORONTO REGION

Abstract ID: 1777

Individual Paper Submission

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While land-use planning has been integrating climate change issues into theory and practice for some 20 years now, the question arises about whether tackling climate change is actually causing planning to fundamentally change? The answer may be “no” or at least by “not much”. In fact, climate change may have brought back into focus the central conundrums of land-use planning: housing density and neighbourhood design, transportation and mobility, development vs conservation, policy vs implementation, and of course utopianism and the desire to express normative socio-environmental values in shaping the built environment. But the answer may also be “yes” as integrating energy and emissions and other climate-specific matters may be causing major shifts in approach (Bulkeley, 2019). Much of the scholarship on climate planning has focused on defining the problems associated with reducing emissions and adapting to a changing climate, recounting case studies of global best practices, and providing

"how to" guidance (from Davoudi, Crawford, & Mehmood, 2009 to Hurlimann, Moosavi, & Browne, 2021), but less has been about the evolving nature of planning itself.

Based on a review of climate plans, planning policies, and processes in the Toronto region where many communities are leaders in climate action (and where many are not), I consider the tenets of planning and ask whether the climate crisis is changing the planning imagination (Tewdwr-Jones, Phelps, & Freestone, 2014). My focus is on environmental planning, as climate change issues are most often subsumed under "environment", but I am interested broadly in whether and how climate change may be making planners reconsider the fundamentals of planning and design (Jabareen, 2013). I am also interested in how the practice of planning is responding to the challenge of including climate change mitigation and adaptation in policy-making, plan-making, and development approvals processes. Drawing upon interviews with practicing planners in the region, I consider whether they feel their jobs are changing and whether they have the knowledge and skills to deal with climate issues.

Citations

- Bulkeley, H. (2019). Managing Environmental and Energy Transitions in Cities: State of the Art & Emerging Perspectives. Background Paper for an OECD/EC Workshop on 7 June 2019 within the Workshop Series "Managing Environmental and Energy Transitions for Regions and Cities", Paris.
- Davoudi, S., Crawford, J., & Mehmood, A. (Eds.). (2009). Planning for Climate Change: Strategies for Mitigation and Adaptation for Spatial Planners. Earthscan.
- Hurlimann, A., Moosavi, S., & Browne, G. R. (2021). Urban planning policy must do more to integrate climate change adaptation and mitigation actions. Land Use Policy.
- Jabareen, Y. R. (2013). Planning the resilient city: Concepts and strategies for coping with climate change and environmental risk. *Cities*, 31, 220–229.
- Tewdwr-Jones, M., Phelps, N. A., & Freestone, R. (Eds.). (2014). *The planning imagination: Peter Hall and the study of urban and regional planning*. Taylor and Francis.

Key Words: climate, mitigation, adaptation, practice, Toronto

PROGRESS, PROFIT AND STATECRAFT: INDUSTRIAL CAPITALISM AS VEHICLE OF PLANNING IN INDIA, CA. 1940

Abstract ID: 1783

Individual Paper Submission

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In theories of development, public infrastructure serves as one of the myriad mediums through which the state seeks validation. In the modern period, infrastructure has often served as the symbol of state led progress. Infrastructure is thus a project of endorsement and justification of state's intervention. Infrastructure is also central to the discourse of planning. Needless to say, that infrastructure is thus a contested terrain within which the political economy of development unfolds. This paper argues that it is through this iteration of infrastructure's intricate ways of creation and functioning that private capital begins to accumulate in post-colonial contexts such as India. In doing so, the paper illustrates the historicity of public-private partnership (PPP) projects as it relates to infrastructure planning. The paper traces the history of one of the earliest examples of the Indian PPP model, which has come to dominate planning practice.

The project looks at the discourse of industrial development and planning in late and post-colonial India, investigating the manner in which infrastructure appears as a trope not only for state's validation but also for aggregation of the Indian industrialist class. How are the modernizing technopolitical state and infrastructure entangled? The paper attempts to answer this question by studying closely the iconic Howrah Bridge, a cast iron structure which opened to the public in 1943 forever transforming the urbanscape of the erstwhile British capital in the east, the city of Calcutta. The paper is based on extensive archival research conducted at national at private museums in India and the United Kingdom. Secondary sources obtained at the National Archives of India, the Nehru Memorial Museum and Library, New Delhi, the Tata Steel Archives, Jamshedpur, the Tata Company Archives, Pune, the British Museum and Library, London, and the London Metropolitan Archives, London enrich the findings. The paper benefits from qualitative interviews with current Tata Steel Company employees and archivists at the Tata Company Archives.

The paper highlights the ways in which late colonial strategies negotiated questions of foreign and native enterprise by constructing what would become the largest bridge in India in 1943. In the process, this paper untangles the relationship between private capital and its implications in the institutional development of national planning in post-colonial India by studying the role and activities of the burgeoning industrial capitalist class in India that pioneer the institutionalization of urban planning in early post-colonial India. The Howrah Bridge project allows entrance to the broader realm of public infrastructure and tests the boundary between 'public' and 'private' in development projects.

Along with other engineering consultants the Tata group, a burgeoning industrial giant in the early 1900s took a pioneering role in this project by supplying almost singlehandedly the steel required to construct the bridge. On the one hand, Tata Company's involvement underscores how the corporate house was mediating questions of economic sovereignty parallel to their negotiation with the British colonial market; on the other hand, like other native capitalists of the time, the Tata group was simultaneously deeply implicated in nationalist arguments for sovereignty of the nation-state, involving debates around tariffs, rights recovery and the like.

The history of construction of the Howrah Bridge offers an alternate, albeit subverted history of urban development in which the infrastructural object backgrounds the functioning of capital, thus establishing infrastructure as the fulcrum around which to pivot reading the history of state and capital. The relevance of this finding lies in its methodical unfolding of structural forces that continue to shape the perpetually reinventing system of capitalism shadowing modern planning practices via mechanisms such as the public-private partnership endeavors, which increasingly dominate urban infrastructure development across continents.

Citations

- Bear, L. (2007). *Lines of the Nation: Indian Railway Workers, Bureaucracy, and the Intimate Historical Self*. New York: Columbia Univ. Press.
- Dutta, A. (2006). *The Bureaucracy of Beauty: Design in the Age of its Global Reproducibility*. New York: Routledge.
- Larkin, B. (2013). The Politics and Poetics of Infrastructure. *Annual Review of Anthropology*, Vol. 42, pp. 327-343.
- Mbembe, A. (2001). *On the Postcolony*. Berkeley: University of California Press.
- Vale, L. (1993). *Architecture, Power and National Identity*. Routledge: London and New York.

Key Words: Progress, Planning, Infrastructure, Modernity, Nation-building

LINDA DAVIDOFF: A FEMINIST PLANNER WHO FOUGHT FOR THE PROGRESSIVE CITY

Abstract ID: 1788

Individual Paper Submission

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While planning scholars have acknowledged the critical contribution early feminist thinkers and activists made to the launch of the urban planning profession in the United States, less attention has been given to feminist contributions to planning scholarship and practice in recent years. One of the most important feminist voices that has been overlooked by contemporary planning historians is Linda Stone Davidoff, a graduate of the Master of Science in Urban and Regional Planning Program at the University of Pennsylvania, who co-authored with her first husband Paul Davidoff, a series of important scholarly articles examining residential segregation in American suburbs.

Linda Davidoff was also a co-founder, along with her husband and Neil Gold, of the Suburban Action Institute which initiated more than two dozen legal suites between 1969 and 1979 to dismantle exclusionary zoning ordinances and building codes which limited access for poor and working-class families to the rapidly expanding economic opportunities in the suburbs. Following her work at Suburban Action Institute, Linda Davidoff serves as the Executive Director of several of New York City's most influential good-government groups, including the: Parks Council, New York League of Conservation Voters, HumanScerve, and the Citizen Union. Among her many accomplishments, were the establishment of the Gotham Gazette, an influential NYC public policy journal and the passage of the 1992 National Voter Registration Act.

Active in electoral politics, Linda Davidoff served as the Campaign Manager for Liz Hotzman's unsuccessful 1990 campaign for the US Senate and Ruth Messinger's unsuccessful 1997 campaign for Mayor of NYC, and was an advisor for Howard Dean's 2004 Presidential campaign. A lifelong advocate of historic preservation, an improved public realm, affordable housing, and mass transit, Linda Davidoff spent the last years of her career organizing a broad-based coalition of citizen groups to challenge Donald Trump's Television City Complex which featured the construction of a series of massive residential/ commercial towers on platforms above Manhattan's Westside rail lines. Through her skillful leadership, the community's proposal for a less dense, mixed use development featuring a considerable portion of permanently affordable housing, significant open space connected to the Hudson River waterfront was negotiated and built.

Several months after her death in 2004, former New York City Parks Commissioner dedicated a lovely greensward sloping towards the Hudson as "Linda's Lawn" in recognition of her tireless efforts to assure NYC's poor and working-class residents easy access to Manhattan's waterfront.

This paper will describe and analyze Linda Stone Davidoff's many contributions, as both a scholar and activist, to

equity-oriented planning. The paper will drawn upon an extensive review of the planning history and practice literature as well as face-to-face interviews with Linda Stone Davidoff's contemporaries carried out by the author as part of The Davidoff Tapes Project (www.pauldavidoff.com)

Citations

- Ajhar, P. (2016). Linda's Lawn in Riverside Park South. Westside Rambler. <http://westsiderambler.com/blog/2016/8/31/lindas-lawn-in-riverside-park-south>
- Davidoff, P. & Davidoff, L. (1978). "Advocacy and Urban Planning." *Social Scientists as Advocates: Views from Applied Disciplines*. Edited by George H. Weber and George J. McCall, Thousand Oaks, CA: Sage Publications Inc., pp. 99-120.
- Davidoff, P., Davidoff, L., & Gold, N. N. (1970). "Planning for an Open Society." *Journal of the American Institute of Planning*, Volume 36, Number 1, January, pp. 12-21.
- Davidoff, L., Paaswell, R., & Schwartz, H. (2003). *20/20 VISION: SMART GROWTH FOR THE NEW YORK METROPOLITAN REGION*. New York: Revson Foundation and The CUNY Institute for Urban Systems. Retrieved from <http://cunyurbansystems.org/wp-content/uploads/2012/02/SmartGrowth-Report.pdf>
- Linda Stone Davidoff, A Campaign Adviser And Social Activist, 62. (2004). *The New York Times*, 2004-01-04.

Key Words: Advocacy, Feminism, Reform, Participation, Progressive

SIXTY YEARS OF RACIAL EQUITY PLANNING: EVOLUTION OF AN ETHIC

Abstract ID: 1830

Individual Paper Submission

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Debates about race and reparations in America are front and center in the 21st century. From the Black Lives Matter (BLM) movement to the caging of indigenous migrant children from Mexico and Central America to rising Asian American Pacific Islander discrimination due to COVID-19, the urgency for an explicit understanding of what racial equity planning is and examples of how the ethic has evolved could not be more pressing.

At the same time racial equity and social justice are especially crucial components of planning's guiding ethical principles. For example, AICP's recently revised Code of Ethics and Professional Conduct emphasizes "economic, social and racial equity." This increased attention to race highlights the need for a re-emergence of race-specific equity-based planning.

This paper traces the historical evolution of equity – specifically racial equity – through five key planning eras: the Origins of Equity Planning & the Civil Rights Era; Model Cities & Equity Planning; the Evolution of Equity Planning after HOPE XI, the Sustainable Cities Initiative/Obama Regional Grants; and Racial Equity Planning Beyond Reparations. We ask how and why has racial equity planning conceptually evolved in the academic planning literature and in representative racial equity plans, policies, and programs that improve urban environments for communities of color?

We identified a total of 17 geographically dispersed plans explicitly focused on racial equity during a three-phase collection strategy over a span of 61 years (between 1959 and 2020). Several plans are well-known in field (e.g., The Cleveland Policy Plan, 1974) while others are more recent and novel (e.g., City of Evanston Restorative Housing Program, 2021). The initial collection phase bounded specific scholarly planning eras with representative plans created concomitantly or catalyzed by majority events during that period. The second phase of plan collection identified plans in key cities (multiple scales) known for established racial equity commitments from previous strategies. A final phase relied on award winners of APA National Planning Excellence Awards over the last decade, including recipients of the Advancing Diversity and Social Change in Honor of Paul Davidoff, Daniel Burnham Award for a Comprehensive Plan, Planning Excellence Award, and Resilience and Sustainability Award. Plans spanned the U.S. from Puget Sound, WA to Birmingham, AL to New York, NY and featured primary planning functions including housing, transportation, urban design, economic development, and cultural heritage/historic preservation. Finally, we analyzed a twenty-year period of the Planners Network newsletter to uncover details about more radical and rogue forms of racial equity planning across the United States.

Through content analysis of racial equity plans produced by both government, non-government organizations, and private-public partnerships, we highlight the precise ways in which different planning institutions embrace racial equity frameworks. This process allowed us to identify the most significant, and oftentimes, lesser known and under-celebrated racial equity-oriented plans during the turbulent years of the Civil Rights Movement to present day.

This paper provides a conceptual framework of racial equity within planning to help scholars and practitioners foreground the importance of past achievements. Our goal is to inform planning scholars and practitioners of the diverse approaches that racial equity planning encompasses to help develop urban policies. We aim to help planners contextualize the value of a racial equity ethic within historical and contemporary efforts via the changing context of federal planning policies during a highly charged racialized contemporary context. The racial equity plans analyzed inform planners of the diverse approaches that racial equity planning has taken over time and helps them better implement goals that align with their planning agency's mission. Racial equity planning has always been a cornerstone of the field and lessons from literature and related plans merit deeper attention.

Citations

- Bates, L. (2019). Growth Without Displacement: A Test for Equity Planning in Portland. In *Advancing Equity Planning Now* (pp. 21–43). Cornell University Press.
- Davidoff, P. (1965). Advocacy and Pluralism in Planning. *Journal of the American Institute of Planners*, 31(4), 331–338.
- Krumholz, N. (1986). City Planning For Greater Equity. *Journal of the American Planning Association*, 12.
- Reece, J. W. (2018). In Pursuit of a Twenty-first Century Just City: The Evolution of Equity Planning Theory and Practice. *Journal of Planning Literature*, 33(3), 299–309. <https://doi.org/10.1177/0885412218754519>
- Williams, R. A. (2020). From Racial to Reparative Planning: Confronting the White Side of Planning. *Journal of Planning Education and Research*, 0739456X2094641. <https://doi.org/10.1177/0739456X20946416>

Key Words: equity, social justice, race, AICP, urban policy

APPLYING RESILIENCE THINKING FOR COMPLEX ADAPTIVE SYSTEMS TO POLICY AND PLANNING

Abstract ID: 1840

Individual Paper Submission

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In this integrative review, we present a conceptual framework developed from our synthesis of the body of literature on resilience theory as developed for the study of Complex Adaptive Systems (CASs). We discuss two cases illustrating its application to planning and policy.

Case 1. Learning from pandemics: applying resilience theory to identify priorities for policy and planning (published July 2021)

The COVID-19 pandemic spurred many predictions and prescriptions about the resilience of human settlements, but individual disciplines have different, overlapping conceptualizations of *resilience*, tuned to their examination of specific areas of concern. Since a colossal range of actions and processes at multiple spatiotemporal scales were impacted, cementing our expectation of system-wide disturbances, this interdisciplinary narrative literature review applied resilience theory for CASs as a conceptual framework to identify priority areas for planning/policy transformation. The research was conducted from January–November 2020, involving a review of ~500 articles on the COVID-19 outbreak by authoritative news outlets, and 237 journal articles on disease emergence, local and community transmission, and outbreak.

Examining how shocks like novel disease emerge, why human settlements are vulnerable to them, which stresses exacerbate the impacts of these shocks, and how response diversity and adaptive capacity help buffer those impacts, revealed five planning/policy issues to prioritize. First, since urban settlements and activities facilitate pathogen transmission between species, reducing 'shocks' like zoonotic diseases and climate change requires not just prioritizing urbanization patterns and land use in urban policies for environmental health, but also animal rearing practices and biodiversity maintenance. Second, since disease transmission is linked to not just contact rate but also host susceptibility, reducing vulnerability by improving equity in access to essential infrastructures like housing, water, sanitation, healthy food, green/public spaces, healthcare—that impact human health directly and indirectly—is critical. In its absence, curbing disease transmission requires focusing on contact rate suppression, but doing so brings human activity to a halt, decimating the economy and livelihoods. Third, the persistence of many pathogens or their vectors in environmental media suggests that built environment & public health professionals must address maintenance of environmental quality at various scales. Fourth, there is a need for redundancy, be it in commodity supply chains (like PPE, food) or data management for say, monitoring & enforcement of home quarantines during a pandemic. Fifth, as the Indian state of Kerala illustrates, social adaptive capacity— which requires investing in social capital (human capital, bonding and bridging relationships), developing

social networks between state and non-state actors (via trust and clear communication, reciprocal and repetitive interactions)--is critical to responding to shocks.

Case 2. Applying CAS theory to holistically study obesity prevention in SNAP (analysis underway)

Public Policy theory, practice, and education center on linear processes, not accommodating the dynamic conditions, processes, and interdependencies that inform agenda setting and policy development. This narrative literature review of ~100 key journal articles discusses an update of public policy theory using the CAS literature, illustrated through a discussion of how to holistically, comprehensively study obesity prevention within SNAP. Obesity is an epidemic, with low-income people using SNAP benefits experiencing high obesity rates. The challenge for policy makers is providing nutritional support adequate to the economic limitations of the SNAP consumer community without incentivizing or supporting behaviors leading to obesity and its manifest negative individual and societal impacts. The contributors to these behaviors are complex, dynamic, and consist of interacting social and ecological variables, but are not studied in an integrated manner. This analysis uses our conceptual framework to identify the many *variables* that will require examination, explain how they are *related* to each other, integrate the *scales* of action and change, and accommodate the timeline of *policy cycles*.

Citations

- Walker, B., & Salt, D. (2006). Resilience thinking: sustaining ecosystems and people in a changing world. Island Press.
- Walker, B., & Salt, D. (2012). Resilience practice: building capacity to absorb disturbance and maintain function. Island Press.
- Syal, S. (2021). Learning from pandemics: Applying resilience thinking to identify priorities for planning urban settlements. *Journal of Urban Management*, 10(3), 205-217.
- Cobb, & Elder, C. D. (1972). Participation in American politics: the dynamics of agenda-building. Allyn and Bacon.
- Schneider, Anne L., Ingram, Helen (1997). Policy design for democracy. University of Kansas Press.

Key Words: resilience, complex adaptive systems, pandemic, public policy

RE:CODE L.A.: UNDERSTANDING THE POLITICS AND PRACTICES OF REZONING THE DEMOCRATIC-CAPITALIST CITY

Abstract ID: 1880

Individual Paper Submission

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Planning urban development in a democratic city is necessary—and—impossible. Zoning codes are ostensibly meant to regulate development to produce a good city for all, but empirical research explains how it often creates or reinforces a system of social and economic inequality. U.S. zoning evolved from a tool for rational expert decision-making, to a political mechanism used by powerful actors to control development in their interests. Scholars and zoning reform advocates suggest that recent innovations can democratize the process, through flexible tools of negotiation that bring various actors together in shared decision-making. However, political economy literature has extensively critiqued how state planning and zoning work to insulate economic interests from democratic decision-making. More recent literature, on post-politics and the post-democratic city, explains how mechanisms of governance go further to repress, disavow, or foreclose democratic politics. Therefore, what remains important for ongoing analysis is, first, how the production of new zoning tools is shaped by structural forces and various agents, and second, how is implementation of these tools enabling and constraining democratic politics.

This research addresses these issues by analyzing the evolving politics and practices of comprehensive zoning reform in Los Angeles from 2013 to present. The City's project "Re:Code L.A." seeks to modernize the existing code first adopted in 1946. It presents a critical case to study new zoning tools and practices that address the challenge of balancing economic development with democratic decision-making. Los Angeles is a complex and diverse city with a history of urban development influenced by powerful political forces. Specifically, the Downtown communities of Chinatown, Little Tokyo, and Skid Row have been historically marginalized by land use and zoning changes. As a result, these communities developed robust community planning coalitions of their own. Therefore, this case study opens a unique window to examine how new zoning tools and planning practices intersect with power and politics through urban governance.

This in-depth case study links the two overlapping processes of the creation of the new citywide zoning 'framework,' and its first implementation in the Downtown planning area, to answer the following research questions: (1) How have urban regimes influenced the shaping of the new zoning framework? (2) How are new planning tools used to

negotiate conflicting interests in Downtown Los Angeles? Qualitative methods are used to collect multiple types that answer these research questions. Archival research including project documents, correspondence, and planning drafts are used to construct a narrative of the chronological development and path dependency of the new zoning framework. Indirect observation of planning videos and visual analysis of planning presentations are used to examine how language and visual materials are used to make claims, exert influence, and justify decision making. Semi-structured interviews conducted with city planners, expert advisors, community coalitions, and other downtown interest groups are used to collect concrete information about the planning process, subjects' perceptions and beliefs about the project, and identify public debates from different perspectives.

Citations

- Ben-Joseph, E. (2005). *The Code of the City: Standards and the hidden language of place making*. Cambridge, MA: MIT Press.
- Friedmann, J. (1987). *Planning in the Public Domain: From knowledge to action*. Princeton, NJ: Princeton University Press.
- Harvey, D. (1985). *Urbanization of Capital: Studies in the history and theory of capitalist urbanization*. Baltimore, MD: Johns Hopkins University Press.
- Stone, C. N. (1993). Urban Regimes and the Capacity to Govern: A political economy approach. *Journal of Urban Affairs*, 15(1), 1-28.

Key Words: Planning Theory, Zoning, Political Economy

DIVERSE EPISTEMOLOGIES AND PLANNING

Abstract ID: 1940

Individual Paper Submission

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Why do urban and regional planning efforts so often fail to achieve their goals of justice, inclusion and sustainability? Why do even participatory planning processes frequently disregard the perspectives, priorities, hopes and dreams of diverse groups? I argue, these failures stem in part from planning's canonical epistemologies, or ways of knowing. Professional planners are trained to think within the constraints of these canons. When soliciting outside input, planners identify stakeholders and interpret their contributions by way of these standard epistemologies. They thus ignore many stakeholders' different ways of knowing and imagining, and thereby limit the scope of the possible to that which can be envisioned through a standard lens.

In response to this issue, I trace the origins of planning's dominant epistemologies to modern science. I place this genealogy in the broader context of modernity/coloniality, and show how planning's canonical ways of knowing systematically reproduce inequality. Second, I offer a brief but multi-disciplinary review of scholarly literature on diverse epistemologies. This review provides a sense of the diverse ways of thinking, knowing and imagining which have always existed in the world, and which planning could nurture rather than suppress. Third, I explore ways in which planning could cultivate diverse epistemologies through three case studies, focused respectively on: planning scholarship; planning education; and planning practice. These three case studies illustrate specific ways in which planners can diversify their own epistemologies, while also supporting varied epistemologies among fellow teachers, students, researchers, practitioners and stakeholders.

Key findings

-Planning's traditional ways of knowing are based on the universalization of specific privileged perspectives as "objective," and the marginalization of disfavored perspectives as "subjective."

-Planning's dominant epistemologies, cast as "objectivity," systematically reproduce uneven outcomes which disadvantage disfavored groups while blinding planners to a vast universe of alternative futures.

-Enlarging the canon will not be sufficient to ensure equity and inclusion; rather, planning must develop a framework which continually supports diverse epistemologies from diverse sources.

-Diversifying planning's epistemologies will require deliberate efforts by planning researchers and instructors; conference organizers and journal editors; and planning practitioners.

-Specific planning interventions might include: greater transdisciplinarity; centering marginalized perspectives; creative methods; integration of spirituality, emotion, and storytelling; radical experimentation; and continual reflexivity.

Citations

- Bates, Lisa K., Sharita A. Towne, Christopher Paul Jordan, and Kitso Lynn Lelliott, eds. 2018. "Interface: Race and Spatial Imaginary: Planning Otherwise." *Planning Theory & Practice* 19 (2): 254–88. <https://doi.org/10.1080/14649357.2018.1456816>.
- Grosfoguel, Ramón. 2007. "The Epistemic Decolonial Turn." *Cultural Studies* 21 (2–3): 211–23. <https://doi.org/10.1080/09502380601162514>.
- Haraway, Donna Jeanne. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14 (3): 575–99. <https://doi.org/10.2307/3178066>.
- Meléndez, José W., and Brenda Parker. 2019. "Learning in Participatory Planning Processes: Taking Advantage of Concepts and Theories Across Disciplines." *Planning Theory & Practice* 20 (1): 137–44. <https://doi.org/10.1080/14649357.2018.1558748>.
- Porter, Libby, Ananya Roy, and Crystal Legacy, eds. 2021. "Planning Solidarity? From Silence to Refusal." *Planning Theory & Practice* 22 (1): 111–38. <https://doi.org/10.1080/14649357.2021.1872952>.

Key Words: Diversity, Epistemology, Equity, Planning theory, Radical planning

REFUGEE, AGENCY, CITY

Abstract ID: 1962

Individual Paper Submission

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This paper is a part of my PhD dissertation titled 'Refugee, Agency, City,' which grew out of an ethnography conducted in Milan, Italy, motivated by a search for collective claim making projects of refugees in the years following Europe's 2015 so-called refugee crisis.

The paper engages with critical governance theories and critical urban theories, particularly the question of scale ((Davies, 2011; Jessop, 1997, 2016; Brenner, 2019), at the intersection with social movements' scholarship , particularly with regard to self-organizing ((Tilly and Tarrow, 2015; Martinez et al., 2019; Swyngedouw, 2018; Amendola et al., 2020), and critical migration studies, with particular attention to the question of agency (Walia, 2021; Mezzadra and Neilson, 2013; De Genova, 2013, 2017). I engage with these scholarships in order to situate self-organizing practices for migrants' protagonism within governance frame, with the aim to examine the capabilities, limits, and potentials of self-organizing for migrants' protagonism.

Through the deployment of Gramscian interpretations of governance, I develop a relational ontology and a multi-scalar methodology, in order to grasp some aspects of how the tensions and contradictions among multiple governance types at work by multiple actors in multiple scales construct the panorama of urban refugee governance in a dialectical relationship. Asserting that the relationship between coercion and consent is inherently dialectical, I discuss instances of governance by hegemony, governance by exclusion, and counter-hegemonic governance within refugee governance.

In refugee governance, the state, including the national, subnational and supranational ones, deploy multiple types of governance, such as governance by hegemony and governance by exclusion. Referring to state's governance by hegemony, the third sector, once sought to intermediate the relationship between civil society and state by an ethos of democratization through participation, revealed its coercive aspects in a continuum from hegemonic leadership towards domination in managerialist, and hierarchical processes in refugee governance. At the same time, it was a carrier for mobilizing the forces of civil society for solidarity with migrants to be channeled in the structures for civil society-state partnership in refugee management on a local scale through assistentialist and humanitarianist techniques. At its own turn, it had become the shadow of coercive power of the state, and in dialectical relationship with instances of the states' migration governance by exclusion, such as governance through campization, ghettoization, and the detention and deportation regimes.

Given the structural conditions, if we consider the social movements as the counter-power to the state power, for the specific positioning they have in relation to the state on one hand, and with migrants on the other hand, they are building other multiple types of governance simultaneously. In their relation to the state, they try to build counter-hegemonic governance, while in the internal dynamics in the encounter with migrants, they examine the opportunity to build a governance based on affective trust. By articulating social movements' counter-hegemonic governance in solidarity with migrants, the paper hopes to speak to the urban social movements which care for organizing and solidarity with migrants within and against the asymmetric power relations in the field of migration.

Citations

- Brenner, N. (2019) *New Urban Spaces: Urban Theory and the Scale Question*. New York, NY: Oxford University Press.
- Davies, J.S. (2011) *Challenging governance theory: from networks to hegemony*. Bristol: Policy Press.
- De Genova, N. (2013) 'Spectacles of migrant "illegality": the scene of exclusion, the obscene of inclusion', *Ethnic and Racial Studies*, 36(7), pp. 1180–1198.
- Tilly, C. and Tarrow, S.G. (2015) *Contentious politics*. Second revised edition. New York, NY: Oxford University Press.
- Walia, H. (2021) *Border and Rule: Global Migration, Capitalism, and the Rise of Racist Nationalism*. La Vergne: Haymarket Books.

Key Words: Urban Social Movements, Critical Urban Governance, Refugee Governance, Gramscian Hegemony, Ethnography

SOCIAL JUSTICE AND THE IMMIGRANT CITY

Abstract ID: 2008

Individual Paper Submission

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The theme of social justice has long occupied planning theorists, and urban theorists more generally. Fainstein (2010), for instance, argues for making justice, and its components, the central criteria for the evaluation of plans, policies, and even cities. And the AICP's Code of Ethics has social justice in several points among planners' foundational "principles to which we aspire." But while the concept of justice is widely used, it also inspires widespread disagreement. Furthermore, it is a concept that has often struggled with questions of migration and immigration. As Fraser (2009) has argued, social contract theories of justice from Hobbes onwards have had to erase questions of "the who" in justice, in order to focus on "the what" of justice. Those theories have done so by either assuming that "the who" is a closed and bounded political community, or by advocating for such closure. John Rawls, perhaps the most prominent liberal moral philosopher of the last 50 years has said he assumes, "a closed system; there are no significant relations to other societies, and no one enters from without for all are born into it to lead a complete life" (Rawls, 1999, p. 323). Alternatively, communitarians such as Walzer (1983) and Miller (2016) have advocated for limited immigration to protect the coherence of the political community. Such views of both immigrants and of the political community are problematic because they are disconnected from the world that we have (which has large numbers of trans-national migrants, and the presence of such migrants does not prevent societies from debating questions of justice), and essentializes identities in ways that are both theoretically problematic and empirically unjustified.

Alternative frameworks for thinking through justice and immigrant societies have certainly been proposed, and most influential in planning has been Iris Marion Young's work. Young begins her magisterial book *Justice and the Politics of Difference* with the completely justified observation that, "theories of justice have operated with a social ontology that has no room for a concept of social groups" (1990, p. 1). In contrast, Young and others have argued for the primacy of social groups in understanding social justice. In so doing, however, they are themselves engaging in a form of essentializing differences between groups.

In this talk I will argue against the tendencies to both universalize the meanings of justice, and essentialize the meanings of group identity. I do this in several ways. First, following Sen (2009), I argue that having a complete understanding of "what is justice?" is neither necessary nor doable in dealing with injustices. Instead, we should think of justice as "practical reason" as we debate what is to be done and what is just. Second, I borrow from those theorizing racial formations and ethnic constructions, to build an understanding that the meanings of immigrants' ethnic identities are socially and politically constructed. They do not exist a priori, but emerge contextually. Third, I borrow from Dewey a recognition that the public itself is a processual realm, rather than a static thing. A public that is ever forming is an explicit rejection of fixed identities, and allows those identities to contextually emerge in the process of public making.

These writers' works come together to offer planning theory a way to think about urban social justice without resorting to either frameworks that require a closed political community or those that foreground and essentialize differences between groups.

Citations

- Fainstein, Susan. 2010. *The Just City*. Ithaca, NY: Cornell University Press
- Fraser, Nancy. 2009. *Scales of Justice*. New York: Columbia University Press
- Rawls, John. 1971. *A Theory of Justice*. Cambridge, MA: Harvard University Press
- Sen, Amartya. 2009. *The Idea of Justice*. Cambridge, MA: Belknap Press of Harvard University Press

- Young, Iris Marion. 1990. *Justice and the Politics of Difference*. Princeton, NJ: Princeton University Press

Key Words: Justice, Immigration

MONETARY SANCTIONS AND THE HISTORY OF DRIVER'S LICENSE POLICY

Abstract ID: 2017

Individual Paper Submission

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A driver's license serves two broad purposes: primarily, as a tool to filter and enforce who is eligible to drive legally, and secondarily as a general form of official identification. Over the course of the twentieth century, people increasingly needed to drive. The more essential a driver's license was for daily life, the more effective the threat of a suspension could be. Over the same period, however, California judges had largely determined that driving was not a fundamental right but a privilege. Court arguments that suspensions for nonpayment discriminated against people with low-incomes and were not reasonably related to road safety fell on deaf ears. Legislators could safely use suspension statutes to pursue a range of policy aims increasingly divorced from transportation concerns. With the advent of database sharing and tracking technology, state agencies were better able to enforce suspension statutes. Suspensions quickly became an easy tool legislators could use to enforce monetary sanctions associated with welfare and drug policies. Federally-backed child support delinquency suspension legislation in the early 1990s marked the beginning of a slew of non-driving-related suspension statutes in California. Drivers could lose their license for skipping school, graffiti, using a firearm, or engaging in prostitution. And it was not just technology that enabled the state to treat suspensions as a form of monetary sanction at a large scale. The playing field of auto interests had changed. When failure-to-pay suspensions were once again contested in the courts in the 2010s, the auto interests that had advocated for driver's license suspensions in the early auto era were for the most part absent. Auto clubs and insurance groups that had lobbied on behalf of suspension statutes were no longer pursuing this strategy, and in their place was a small group of civil rights legal advocates more connected with broader criminal justice issues than road safety.

When a driver loses their driver's license, they not only lose their right to drive legally, but also risk their livelihoods, ability to participate in elections, and easy access to various public institutions and services. Existing studies show that non-white drivers and drivers in low-income neighborhoods are more likely to be stopped by law enforcement, and more likely to have their license suspended (Bender et al., 2015; Joyce et al., 2020). The purpose of this study is to answer the questions: 1) how did our current licensure regime come to be; and 2) how does license policy compound existing income and race/ethnicity-based disparities in accessibility? To understand how non-transportation policies about driver's licensing have changed over time, and if race/ethnicity is implicated in these changes, I review state legislative records, law review articles, and newspaper articles from newspapers in California that relate to licenses beginning in 1905, when California cities first adopted driver's license statutes until present day. I supplement my analysis of historical newspapers, statutes and court records with a descriptive analysis of California Department of Motor Vehicle data on suspensions for failure-to-appear in court, failure-to-pay fines and fees, and child support delinquency from 2013 to 2019.

This study adds to the literature on monetary sanctions, impediments to mobility, and racial profiling in law enforcement (Garrett & Wagner, 2009; U.S. Department of Justice, 2015). It also highlights the ways states such as California use driver's licenses for purposes other than driving and, in so doing, disenfranchise minority populations. In some states, again like California, these types of policies have reform efforts. This study, therefore, informs current policy debates on license suspension reform.

Citations

- Bender, Alex, Stephen Bingham, Mari Castaldi, Elisa Della Piana, Meredith Desautels, Michael Herald, Endria Richardson, Jesse Stout, and Theresa Zhen. "Not Just a Ferguson Problem. How Traffic Courts Drive Inequality in California." Lawyers Committee foR Civil Rights of the SF Bay Area, East Bay Community Law Center, Western Center on Law & Poverty, A New Way of Life, Legal Services for Prisoners with Children, 2015.
- Garrett, T. A., & Wagner, G. A. (2009). Red ink in the rearview mirror: Local fiscal conditions and the issuance of traffic tickets. *The Journal of Law and Economics*, 52(1), 71-90.
- Joyce, Nina R., Melissa R. Pfeiffer, Andrew R. Zullo, Jasjit Ahluwalia, and Allison E. Curry. "Individual and Geographic Variation in Driver's License Suspensions: Evidence of Disparities by Race, Ethnicity and Income." *Journal of Transport & Health* 19 (December 1, 2020): 100933. <https://doi.org/10.1016/j.jth.2020.100933>.
- U.S. Department of Justice (2015). Investigation of the Ferguson Police Department. Retrieved October 17, 2020, from https://www.justice.gov/sites/default/files/crt/legacy/2015/03/04/ferguson_findings_3-4-15.pdf

Key Words: Driver's license, monetary sanctions, suspensions, race/ethnicity, poverty

FROM WALL-TO-WALL BROADLOOM TO ROCK CLIMBING WALLS: THE PRODUCTION OF HIGH-RISE LIFESTYLE ACROSS PLANNING AND MEDIA ARCHIVES

Abstract ID: 2028

Individual Paper Submission

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Across North America, planners and urban designers call for densifying housing, revitalizing downtowns and retrofitting suburbs (e.g. Dunham-Jones & Williamson 2011). The City of Toronto has over seventy years of experience in producing density through high-rise buildings, first through a rapid expansion of suburban rental apartments in the 1960s and later in waves of downtown condominium development (Relph 2014; Boudreau, Keil & Young 2009). Against the backdrop of valorized low-rise suburban expansion, Toronto planners and developers in the post-war decades worked to produce a desirable image of high-rise forms and apartment living. In doing so, they facilitated a lasting framework for public and private investments across the regional landscape.

Research on high-rise lifestyle has largely focused on the recent condo boom (Kern 2010; Lehrer 2012). Less attention has been paid to the historical role of rental buildings and the first condos, which through their advertising strategies shaped enduring expectations about urban ways of life. We ask: How have the advertised lifestyle features and amenities in Toronto's high-rise buildings changed or remained the same over time? What factors explain these continuities and divergences?

Toronto's planners were instrumental in zoning high-rise apartment clusters long before "density nodes" or "compact city" were trending. Planners clearly shape the built environment, but what roles have they played in producing spatial meaning? The role that developers and their advertising agencies play in lifestyle is explicit; we argue that planners too are agents of lifestyle. Planning reports are not just technical documents, but cultural artefacts in the archive of the city. Planners' visions retold in the news media alongside apartment building advertisements produce an image of high-rise living.

Our focus is on a sample of apartment building advertisements in a major daily newspaper, The Toronto Star, at intervals between 1961 and 2011. We compare the historical trends to contemporary advertisements in Condo Life magazine and developer websites. We examine these trends alongside a close reading of key planning documents and shifts in the broader context, building a political economy analysis of the densifying built environment.

From the historical ads for modern and luxurious apartments with wall-to-wall broadloom carpeting to contemporary condos boasting rock climbing walls, pet spas and celebrity-designed interiors, this paper offers an analytical guide through the city's high-rise archives. Toronto is a global influencer of high-rise condo culture. The city has much to reveal about lessons learned through decades of densification and the pursuit of the good life at the complex intersection of planning-for-the-public-good and real-estate-capitalism.

Citations

- Boudreau, J.-A., Keil, R., & Young, D. (2009). *Changing Toronto: Governing urban neoliberalism*. Toronto: University of Toronto Press.
- Dunham-Jones, E. (2011). *Retrofitting suburbia: urban design solutions for redesigning suburbs*. Hoboken, New Jersey: Wiley.
- Kern, L. (2010). *Sex and the revitalized city: Gender, condominium development, and urban citizenship*. Vancouver: University of British Columbia Press.
- Lehrer, U. (2012). "If you lived here...": Lifestyle, marketing, and the development of condominiums in Toronto. *Scapegoat*, (3), 23.
- Relph, E. (2014). *Toronto: Transformations in the city and Its region*. University of Pennsylvania Press.

Key Words: high-rise, lifestyle, planning archive, built environment, housing history

ASSEMBLING FOR JUSTICE? INFRASTRUCTURAL POLITICS IN TWO TEXAS CITIES

Abstract ID: 2046

Individual Paper Submission

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The racialized and politicized development of the US highway system is intertwined with the displacement of working-class, black and brown communities, and the fracturing of their connections to land, homes, and businesses. While both elites and ordinary residents shape transportation policies, the lack of means and know-how to challenge eminent highways constructions often render community needs and struggles invisible (Biles and Rose, 2020). More recently, however, challenges to transportation projects illustrate how the inclusion of non-human elements--technology, buildings, streets, and property--assembles a politics around infrastructure projects enabling the reconstruction of citizens as political actors in asserting their rights over contested transportation space (Shelton, 2017). However, **critical theorists have challenged assemblage theory for inadequately addressing structural causes of injustice** (Brenner et al., 2011). Despite the emergence of alternative assemblages shaping the future of highway projects (Khalaj et.al., 2020), the question remains whether highway removal subsequently reconnects fragmented neighborhoods and promotes racial equity.

Drawing on assemblage theory, we use a case study approach to trace the networks engaged with highway oppositions in Dallas and Houston (TX) to evaluate their social justice potential. We seek to articulate who, how and what these projects assemble to understand whether the question of highway oppositions--both removal and expansion--may lead to just outcomes. For each case study, we ask the following questions: 1) What is being assembled through political mobilizations focused on infrastructure? 2) How do assemblages develop and change over time? 3) What does the assemblage produce in terms of strategies for achieving social justice? The mobilization of actors, data, media and narratives aimed at highway removal in Dallas illustrates how projects may claim equity outcomes but will likely still benefit capitalist development over local communities. In Houston, an assemblage centered on mapping residents' displacements and environmental justice offer alternatives for just outcomes.

Citations

- Biles, R., & Rose, M. H. (2020). At the Intersection of Race, Class, Gender, and Highway Politics. *Journal of Urban History*, 46(3), 677–684.
- Brenner, N., D. J. Madden, & D. Wachsmuth. (2011). Assemblage Urbanism and the Challenges of Critical Urban Theory. *City* 15 (2): 225–240.
- Khalaj, F., Pojani, D., Sipe, N., & Corcoran, J. (2020). Why are cities removing their freeways? A systematic review of the literature. *Transport Reviews*, 40(5), 557–580.
- Shelton, K. (2017). *Power moves: Transportation, politics, and development in Houston* (First edition). University of Texas Press.

Key Words: theory, assemblage, justice, infrastructure, politics

Track 13 Posters

SHINY OBJECTS, GALAXIES, AND BODIES OF PLANNING THEORY: DIAGRAMS OF POSITIONALITY AND THE FIELD BY EMERGING SCHOLARS

Abstract ID: 1040

Poster

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The planning profession and planning theory have been compared to the ‘magpie’ (Sandercock, 2000; Barry et al, 2018). Similarly, students of planning theory could be likened to magpies, gathering the shiny objects of planning theory (shiny as judged from their own perspectives) and building them into their own nests of research and self-development. In fact, the shiny objects presented as planning theory have been in continual flux. John Friedman’s (1988) diagramming of two centuries of planning theory sheds much light on canonical texts. Since then there has been much debate as to how to characterize the corpus of theory and its relationship to planning practice. A growing

number of scholars have challenged planning theory to embrace lessons from Indigenous feminist praxis (Dorries & Harjo, 2020), engage in insurgent practices and imagine alternative futures (Miraftab, 2019), reflect Black spatial imaginaries (Poe, 2021), rethink biased measures of vulnerability (Jacobs, 2019), contemplate post-humanism and the relationships between society and nature (Jon, 2020), and incorporate the ethics of planning with things (Beauregard, 2012). Meanwhile, challenges to positivism, theories of communicative action and power, collaboration and complexity, and debates over agency versus structure endure as key themes and debates. Planning theory remains a contested terrain, easily challenged as too rooted in Global North sources and discourses. Scholars such as Vanessa Watson (2002, 2009) advocate for incorporating viewpoints from the Global South when theorizing about the city and planning practices, arguing that not every theory is universally applicable. Vasudevan & Novo (2021) invite reconceptualizing planning as a pluriversal field that makes space for multiple ways of being and producing knowledge.

While planning theory is often oriented toward textual analysis, this poster provides a set of graphical representations of the personal intellectual journeys, fruitful tensions, contributions and limitations to the research endeavors, practices, and lives of doctoral and master's students in the fields of city and regional planning, regional science, and anthropology and who came from a variety of educational and professional backgrounds, nationalities, ethnic identities, and research interests. In a doctoral level Advanced Planning Theory Seminar, students and instructor set out to explore the boundaries, edges, lineages, canons, imaginaries, master signifiers, actors, networks, and assemblages of planning theory. What can observations of emerging planning scholars tell us about the field of planning theory? This poster is a reflection on that question, focusing on the presentation and analysis of diagrams that reflect the intellectual journeys, queries, and positionalities. The title of the poster is based on both distinct and repeated metaphors explored in widely divergent ways in student-crafted diagrams.

The poster affords educators the opportunity to reflect on the pedagogy of planning theory. In preparation for teaching the course, the instructor reviewed the syllabi from her own doctoral educational experiences and compared them to more recent versions of syllabi from planning theory courses. In addition, she reviewed a scan of planning syllabi performed by a PhD student a few years prior. After the seminar began, she was further informed by a bibliometric analysis of planning theory conducted by one of the students in the seminar (Bower, 2021). After the seminar, a more systematic review of planning theory syllabi was conducted. This poster introduces a graphical depiction of the content of planning theories from this scan of syllabi.

Please note: this poster is derived from the diagrams and writings of 12 students and one instructor. Only eight names could be included in an ACSP abstract. The poster will list the names of all co-authors.

Citations

- Barry, J., Horst, M., Inch, A., Legacy, C., Rishi, S., Rivero, J. J., Taufen, A., Zanotto, J. M., & Zitcer, A. (2018). Unsettling planning theory. *Planning Theory*, 17(3), 418–438. <https://doi.org/10.1177/1473095218763842>
- Dorries, H., & Harjo, L. (2020). Beyond safety: Refusing colonial violence through indigenous feminist planning. *Journal of planning education and research*, 40(2), 210-219.
- Jacobs, F. (2019). Black feminism and radical planning: New directions for disaster planning research. *Planning Theory*, 18(1), 24-39.
- Jon, I. (2020). Deciphering posthumanism: Why and how it matters to urban planning in the Anthropocene. *Planning Theory*, 19(4), 392-420.
- Vasudevan, R. and Novoa E., M. (2021) Pluriversal planning scholarship: Embracing multiplicity and situated knowledges in community-based approaches. *Planning Theory* 147309522110003. doi:10.1177/14730952211000384.

Key Words: Planning Theory, Planning Pedagogy, Doctoral Education, Planning history, Visual media

Track 14 - Transportation & Infrastructure Planning

Track 14 Pre-Organized Session Summaries and Abstracts for the Sessions

LIVED EXPERIENCES AND PERSPECTIVES OF STAKEHOLDERS IN DISABILITY AND TRANSPORTATION

Pre-Organized Session 39 - Summary

Session Includes 1576, 1577, 1578, 1631

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Many of the 43 million people with disabilities in the U.S. experience transportation challenges that hinder their ability to fully participate in society. People with disabilities face various types of challenges in traveling, from accessing public transit services to using ride-hailing services and purchasing a wheelchair-accessible vehicle. To better serve the transportation needs of people with disabilities, federal and local government, ride-hailing services, and transportation agencies need innovative, inclusive solutions. This session brings together a group of emerging scholars to explore the barriers to transportation faced by people with disabilities and potential avenues to increase access. Through qualitative methods, the papers highlight the lived experiences of people with disabilities navigating built environments and transportation and the perspectives of other stakeholders, including app-based ride-hailing drivers and vehicle modification experts.

Objectives:

- Understand the lived experience of people with disabilities experiencing transportation barriers and navigating such challenges
- Learn from the perspectives of service providers how to better meet the transportation needs of people with disabilities in planning practices and policies

FIRST AND LAST MILE ACCESSIBILITY: THE EXPERIENCES OF PEOPLE WITH DISABILITIES USING PUBLIC TRANSIT IN AUSTIN AND SEATTLE

Abstract ID: 1576

Abstract within Pre-Organized Session 39

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In transportation planning practice and research, disability is largely mistreated and oversimplified (Terashima & Clark, 2021). People with disabilities account for 26 percent of adults in the U.S., but experience disparate travel outcomes compared to the rest of the population because they are underrepresented in the transportation planning process (CDC, 2019). While the Americans with Disabilities Act (ADA) of 1990 was a significant step in the right direction towards inclusion and accessibility to public entities, institutional barriers, and built environment challenges, the social exclusion of people with disabilities continue to exist (Eisenberg & Maisel, 2021). Even though public agencies build new infrastructure in compliance with the ADA guidelines, these minimum standards are not adequate for barrier-free travel including first and last mile travel to public transit stops.

Public transit systems connect people to opportunities using space-efficient and relatively affordable modes, providing low-cost mobility for those who cannot or do not want to drive. However, the decision for a potential transit rider to use the system depends on their conception of the local built environment and their capacity to actually reach a transit stop along the first and last mile. The perceived quality of built-environment features is amplified for people with disabilities, and urban residents report more severe disabilities when the urban built environment is unfavorable (Rosso et al., 2011). In addition, people with disabilities face insecurity, exclusion, and ultimately travel less because of the social conditions they experience in public spaces (Iudici et al., 2017).

This research evaluates first and last mile access to transit for people with disabilities through semi-structured interviews with transit riders in Austin, TX and Seattle, WA. My primary research question is: how do the current perceived social and built environments influence access to transit along the first and last mile for people with disabilities? The purpose of the study is to provide practitioners and policymakers guidelines regarding meaningful

public engagement regarding access to public transit for people with disabilities. I ensured diversity of the sample by engaging participants with different types of disability, culture, gender, sexual orientation, race, age, level of activism, and education. Interview questions are centered on self-identification, lived realities, critical perceptions of accessibility, and reimagining the built and social environments to improve transportation and disability justice. By having interviewees self-identify and describe their ideal travel conditions, I challenge established transportation planning norms, categories, and stigmas about disability and other identities. I argue that the absence or limited inclusion of lived experiences along the first and last mile for people with disabilities in traditional transportation planning has exacerbated existing inequalities in transit access. Interview findings reveal how social attitudes, interactions with other pedestrians, and feelings of safety and security influence accessibility and perceived access to transit.

Citations

- CDC. (2019, March 8). Disability Impacts All of Us Infographic | CDC. Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html>
- Eisenberg, Y., & Maisel, J. (2021). Environmental Contexts Shaping Disability and Health. In D. J. Lollar, W. Horner-Johnson, & K. Froehlich-Grobe (Eds.), *Public Health Perspectives on Disability: Science, Social Justice, Ethics, and Beyond* (pp. 107–128). Springer US. https://doi.org/10.1007/978-1-0716-0888-3_5
- Iudici, A., Bertoli, L., & Faccio, E. (2017). The ‘invisible’ needs of women with disabilities in transportation systems. *Crime Prevention and Community Safety*, 19(3), 264–275. <https://doi.org/10.1057/s41300-017-0031-6>
- Rosso, A. L., Auchincloss, A. H., & Michael, Y. L. (2011). The Urban Built Environment and Mobility in Older Adults: A Comprehensive Review. *Journal of Aging Research*, 2011, 1–10. <https://doi.org/10.4061/2011/816106>
- Terashima, M., & Clark, K. (2021). The Precarious Absence of Disability Perspectives in Planning Research. *Urban Planning*, 6(1), 120–132. <https://doi.org/10.17645/up.v6i1.3612>

Key Words: disability, first and last mile, accessibility, public transit

ACCESSIBLE PUBLIC TRANSIT FOR PEOPLE WITH DISABILITIES THROUGH THE LENS OF LIFE-SPACE MOBILITY

Abstract ID: 1577

Abstract within Pre-Organized Session 39

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According to 2016 Behavioral Risk Factor Surveillance System (BRFSS) survey, one in four noninstitutionalized adults in the U.S. lives with one or more types of disability (Okoro et al., 2018). Persons with disabilities face greater transportation barriers to move around, which results in fewer day-to-day travel because of disabilities (Brumbaugh, 2018). The Americans with Disability Act (ADA) promotes the inclusion of people with disabilities in every aspect of life, including transit accessibility, which is one of the basic needs to ensure everyone’s access to essential goods, services, employment, and social participation.

This study uses an interdisciplinary lens to explore the connection between the built environment and mobility in the needs of people with disabilities. First informed by gerontologists, life-space mobility measures a broad scope of mobility experienced in different spatial locations in daily lives (Peel et al., 2005). For people with disabilities, the scope of a journey isn’t simply from the trip origin to the destination, and this relates to the first mile/last mile discussion. Through the lens of life-space framework, the authors address the gaps between the needs of transit users and the current transportation planning practices of service providers by exploring collected data from semi-structured interviews, focus groups, and citizen advisory group meetings.

Although it is evident that transit authorities focus on what is in their jurisdiction, transit users with disabilities are concerned about the whole system. It’s from one’s home to the destination, from trip planning to interpersonal connections/communications with drivers and the transit system, and from personal considerations to broader themes. The unmet needs can address a new perspective of transit planning for people with disabilities and accessibility justice for all.

Citations

- Brumbaugh, S. (2018). Travel patterns of American adults with disabilities. Bureau of Transportation Statistics. <https://www.bts.dot.gov/sites/bts.dot.gov/files/docs/explore-topics-and-geography/topics/passenger-travel/222466/travel-patterns-american-adults-disabilities-11-26-19.pdf>
- Okoro, C. A., Hollis, N. D., Cyrus, A. C., & Griffin-Blake, S. (2018). Prevalence of disabilities and health care access by disability status and type among adults—United States, 2016. *Morbidity and Mortality Weekly Report*, 67(32), 882.
- Park, J., & Chowdhury, S. (2018). Investigating the barriers in a typical journey by public transport users with disabilities. *Journal of transport & health*, 10, 361-368.
- Peel, C., Baker, P. S., Roth, D. L., Brown, C. J., Bodner, E. V., & Allman, R. M. (2005). Assessing mobility in older adults: the UAB Study of Aging Life-Space Assessment. *Physical therapy*, 85(10), 1008-1019.
- Stjernborg, V. (2019). Accessibility for All in Public Transport and the Overlooked (Social) Dimension—A Case Study of Stockholm. *Sustainability*, 11(18), 4902.

Key Words: accessibility, disability, life-space mobility, transit

VEHICLE MODIFICATION FOR PEOPLE WITH DISABILITIES: CHALLENGES AND STRATEGIES

Abstract ID: 1578

Abstract within Pre-Organized Session 39

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Some people with mobility disabilities can modify a vehicle with ramps and hand controls to enable them to drive independently or ride as a passenger more conveniently. Previous research has shown that driving a modified vehicle is associated with higher chances of being employed, spending more time outside socializing, and participating in more recreational activities (Darcy and Burke, 2018; Mtetwa et al., 2016; Tsai et al., 2014). Yet, vehicle modification can be cost-prohibitive (Remillard et al., 2022); people with spinal cord injuries—the most common disability among disabled drivers—spend on average \$6,500 USD and up to \$65,000 USD to modify a vehicle.

Beyond these cost figures, we know little about the experience of purchasing a modified vehicle in the United States. To my knowledge, there is no qualitative data on experiences of people with disabilities purchasing a modified vehicle in the U.S. context. While a few scholars have studied challenges in purchasing a modified vehicle in New Zealand (Woodbury, 2013), Australia (Darcy and Burke, 2018), and South Africa (Mtetwa et al., 2016), these studies have not explored how people with disabilities navigate the many financial and administrative hurdles of finding, financing, and purchasing a modified vehicle. Thus, additional research in the U.S. context is necessary to understand the challenges people with disabilities face in the vehicle modification process and what strategies do they employ to procure a modified vehicle.

To fill this gap, I interviewed 25 people with spinal cord injuries. I recruited participants through the Christopher and Dana Reeve Foundation, a national non-profit organization dedicated to the well-being of people with spinal cord injuries. I conducted in-depth interviews with individuals who own modified vehicles and those who wish to own a modified vehicle. For the latter, I ask what has kept the interviewees from getting a modified vehicle. When interviewing respondents with modified vehicles, I focus more on how the interviewees have overcome challenges to make a purchase.

My research reveals that many people with spinal cord injuries in my sample found it difficult to afford a modified vehicle and that the limited market for vehicle modification complicated their search process. To overcome these barriers, most interviewees received public or private financial assistance, such as vehicle modification grants offered by state vocational rehabilitation centers. Some took out vehicle loans and around half of the interviewees used their employment income. Many purchased used vehicles, but this choice was severely restricted by some grant agencies and occasionally led to problems with reliability.

In addition, I conducted interviews with five vehicle modification experts (e.g., state vocational rehabilitation center supervisors and vendors) to assess their view on the financial and informational resources available for vehicle modification. My interviews with vehicle modification experts suggest that eligibility criteria for vehicle modification subsidies vary heavily across states.

Based on my findings, I suggest three recommendations for increasing access to modified vehicles for people with disabilities: revising the vehicle modification grant programs offered by state vocational rehabilitation centers; making information on state vehicle modification programs more accessible online; and considering federal or state loan programs for modified vehicles.

Finally, by positioning people with disabilities as active agents in navigating transportation challenges rather than passive recipients of policy intervention, my research illustrates the importance of involving people with disabilities in the planning process.

Citations

- Darcy, S., & Burke, P. F. (2018). On the road again: The barriers and benefits of automobility for people with disability. *Transp. Res. Part A: Policy Prac* 107, 229-245
- Mtetwa, L., Classen, S., & Van Niekerk, L. (2016). The lived experience of drivers with a spinal cord injury: A qualitative inquiry. *South African Journal of Occupational Therapy*, 46(3), 55-62
- Tsai, I. H., Graves, D. E., & Lai, C. H. (2014). The association of assistive mobility devices and social participation in people with spinal cord injuries. *Spinal cord*, 52(3), 209-215
- Woodbury, E. Z. (2013). "Auto-mobile: Disabled Drivers in New Zealand." PhD diss., University of Otago
- Remillard, E. T., Campbell, M. L., Koon, L. M., & Rogers, W. A. (2022). Transportation challenges for persons aging with mobility disability: qualitative insights and policy implications. *Disability and health journal*, 15(1), 101209

Key Words: disability, accessibility, car ownership, transport disadvantage, vehicle modification

DRIVING WHEELCHAIR USERS ON THE UBER AND LYFT APP: DRIVERS' EXPERIENCE AND PERSPECTIVE

Abstract ID: 1631

Abstract within Pre-Organized Session 39

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Uber and Lyft have become ubiquitous and important players in the transportation landscape. They are lauded for bringing innovative technology solutions to transportation (Jin, et al., 2018) and even filling transportation gaps for people with disabilities (Brewer, et al., 2019). The companies' reputation, however, is tarnished regarding service for riders in wheelchairs. Some of the problems identified pertain to driver practice and behavior, such as service denial, driver refusal to assist with wheelchairs and helping riders transfer into vehicles, and lack of proper training (Gebresselassie, 2021; San Francisco Municipal Transportation Agency, Taxis and Accessible Services Division, 2019). Complaints and lawsuits in relation to wheelchair accessible service attempt to hold the companies accountable. The response from Uber and Lyft has been to cite their non-discrimination policies and consequences for drivers who do not comply with policies (Perry, 2018).

The perspective of drivers regarding service to disabled riders is not represented in the literature except in a few studies. There is little known about the Uber and Lyft drivers (Berliner & Tal, 2018; Brewer et al., 2019), much less about drivers in relation to wheelchair accessibility. This research fills the gap in focusing on the perspective of drivers by taking a case study of transportation service hailed through these apps in Washington, DC. It investigates the problems identified in literature such as ride declines and poor service as highlighted in Francisco Municipal Transportation Agency, Taxis and Accessible Services Division (2019) and Gebresselassie (2020). Semi-structured interview with 12 drivers on the apps was conducted to understand drivers' perceptions and experiences and how these relate to the service they provide to wheelchair users. The interview questions focused on the drivers' experiences interacting with wheelchair users in relation to the themes highlighted in literature, for instance service refusal. Drivers who did not have experience providing service to wheelchair users were also interviewed to understand how they perceive providing service to wheelchair users and how that may translate into their practices and behavior. Both groups - drivers with and without experience - were asked questions about their perception of providing service to wheelchair users compared to serving non-wheelchair users.

The findings indicate that some drivers perceive and experience transporting wheelchair users as markedly different from the service to non-wheelchair users due to the extra time and labor required to stow a wheelchair and assist the rider transfer into the vehicle. For some, this makes the service "above and beyond" as described by one driver, requiring extra compensation. For others, the process of assisting wheelchair users can be stressful since extended pickup time may delay traffic or subject them to possible accidents in dangerous locations. While none of the drivers interviewed reported refusing a ride to wheelchair users, they perceive ride refusals to possibly stem from uncompensated extra time and labor required in transporting wheelchair users and perceptions of liability of injuring them in the process of assisting them. One possible solution to tackle discrimination against wheelchair users is to use the app technology to keep a record of ride requests by wheelchair users who volunteer to disclose disability status and incentivize drivers for completed rides.

The purpose of the study is to create better knowledge of wheelchair in/accessibility of transportation service hailed through Uber and Lyft by engaging the direct service providers. This helps to understand what is currently working and what the problems are from their point of view. The study also informs app-design based solutions and policymaking to overcome problems of accessibility where they exist and help in making transportation options accessible to all in current options and their future iterations.

Citations

- Brewer, R. N., Austin, A. M., & Ellison, N. B. (2019). Stories from the Front Seat: Supporting Accessible Transportation in the Sharing Economy. *Proceedings of the ACM on Human- Computer Interaction*, 3(CSCW), 1-17.
- Gebresselassie, M. (2022, January). Wheelchair users' perspective on transportation service hailed through the Uber and Lyft apps. [Poster presentation]. Transportation Research Board, Washington, DC.
- Jin, S. T., Kong, H., Wu, R., & Sui, D. Z. (2018). Ridesourcing, the sharing economy, and the future of cities. *Cities*, 76, 96-104.
- Perry, D. (2018). Can Uber and Lyft Become Wheelchair Accessible? Retrieved from <https://psmag.com/social-justice/can-uber-and-lyft-become-wheelchair-accessible>
- San Francisco Municipal Transportation Agency, Taxis and Accessible Services Division. (2019). TNCs and Disabled Access. Retrieved from https://www.sfmta.com/sites/default/files/reports-and-documents/2019/05/tnc_and_disable_access_whit_paper-rev11_2.pdf

Key Words: Service provider experience and perspective, Uber and Lyft apps, Transportation equity, Platform labor, Gig economy

Track 14 Roundtables

FINDING RESEARCH QUESTIONS WORTH ANSWERING IN TRANSPORTATION PLANNING

Abstract ID: 1519

Roundtable

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GIULIANO, Genevieve [University of Southern California] giuliano@usc.edu, participant

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KING, David [Arizona State University] david.a.king@asu.edu, participant

Many academics complain that the pressure to publish more and more has led to a proliferation of mediocre research (Sarewitz, 2016), a lack of relevance of academic research for today's world (e.g. Jaschik, 2021), and a pattern of incremental rather than transformational science (Sverdlov, 2018). The proposed ACSP roundtable session aims to inspire and help transportation planning researchers at all levels "up their game" with research that is attuned to the pressing problems of today's world, asks questions that we do not already know the answers to, and sometimes moves beyond the incremental science model. We aim to accomplish this with a 2-part session.

First, we will have a short (~15-20 minutes) roundtable discussion by leading transportation planning scholars to set the stage and begin a conversation that identifies key challenges in transportation planning and discusses how to craft research questions that speak to those challenges. This will be followed by a technology-enhanced, full-participation brainstorming session to generate research questions and jumpstart new collaborations among all in attendance.

We hope you will join us!

Citations

- Jaschik, S. "The Engaged Scholar": Author discusses his new book "on expanding the impact of academic research in today's world." *Inside HigherEd*. <https://www.insidehighered.com/news/2021/03/26/author-discusses-his-new-book-engaged-scholar>
- Sarewitz, D. The pressure to publish pushes down quality. *Nature* 533, 147 (2016). <https://doi.org/10.1038/533147a>
- Sverdlov, E. D. (2018). Incremental Science: Papers and Grants, Yes; Discoveries, No. *Molecular Genetics, Microbiology and Virology*, 33(4), 207-216.

Key Words: transportation planning, policy-oriented research, research design

TO ADVOCATE OR NOT: EXPLORING THE PROMISE AND PERILS OF EVANGELISM AMONG TRANSPORTATION PLANNING PROFESSORS

Abstract ID: 1715

Roundtable

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FAN, Yingling [University of Minnesota] yingling@umn.edu, participant

LEE, Amy [UC Davis] aelee@ucdavis.edu, participant

MANVILLE, Michael [University of California Los Angeles] mmanvill@ucla.edu, participant

What should transportation planning professors do when an idea is widely shared among our colleagues and our students but is not embraced by the public or experts from other disciplines? In this roundtable, we invite participants and audience members to explore this question together. We will discuss the following questions: When is advocacy appropriate? For which topics and in which settings? How should we balance the risks of advocacy with a sense of professional obligation to champion our values? If we decide that advocacy is indeed appropriate, how should we approach it and how do we make sure our own institutional structures recognize and reward advocacy? Finally, what does our stance on advocacy mean for pedagogy?

Two policy positions that are emblematic of the gap between the views of the transportation planning professoriate and the public are congestion mitigation and parking (Ralph et. al. 2022). While the public broadly supports building our way out of congestion, either via additional road or transit capacity, transportation planning professors tend to favor congestion pricing. With parking, transportation planning professors favor eliminating parking minimums while the public favors parking requirements.

In assessing the suitability of advocacy, it might seem most appropriate to be evangelical in cases where our professional expertise and training lead us to have systematically different knowledge than the lay public. For instance, whereas planning students near universally understand induced demand, the idea is widely misunderstood by the public. While debates about the role of advocacy are difficult enough when it comes to factual knowledge, they are thornier still when considering differences in beliefs, preferences, and values. Should planning professors become evangelical about our interpretation of planning history or our views?

In making these decisions, we must be clear-headed about the potential risks of embracing advocacy. What unintended consequences might materialize? What will it take to maintain our scholarly credibility and fend off claims of undue bias? Could a shift to advocacy draw greater scrutiny to our departments, bringing the culture wars to our doorstep?

Despite these risks, some may argue that those of us in the academy have an obligation to advocate much more actively. Grant-funded nonprofits and consulting firms are unlikely to aggressively question the status quo because their funding would likely dry up. Who else has the expertise, the manpower, and the stable funding base to bring about meaningful reforms?

If we are to become evangelical, how should we go about it? What approaches would be most effective? Some of us already take to Twitter and the op-ed pages. Others join planning commissions and lobby our local, state, and national representatives. What other venues should we use to make our individual and collective voices heard? Can our research inform our advocacy to identify ways to improve our outreach?

How can our institutions begin to formally recognize and reward advocacy? There is a sense that advocacy is undervalued in most corners of the academy, which leads many junior scholars to make the reasonable choice to put off advocacy until tenure. If we want more scholars to pursue advocacy, how do we reform our institutional structures?

Finally, if and how should our advocacy inform our pedagogy? Is it sufficient for our students to simply practice communicating core planning ideas or should we require them to get involved in planning disputes as advocates? Should we direct our students to work locally to remove minimum parking requirements, modify traffic impact analysis, and oppose road widenings? What additional skills and training will they need to do so effectively and how can we provide it?

Citations

- Ralph, K. M., Klein, N. J., Thigpen, C., & Brown, A. (n.d.). Are transportation planning views shared by engineering students and the public? *Journal of Planning Education and Research*, Accepted (Forthcoming).
- Boykoff, M., & Oonk, D. (2020). Evaluating the perils and promises of academic climate advocacy. *Climatic Change*, 163(1), 27–41. <https://doi.org/10.1007/s10584-018-2339-3>

- Smith, K. E., & Stewart, E. A. (2017). Academic advocacy in public health: Disciplinary ‘duty’ or political ‘propaganda’? *Social Science & Medicine*, 189, 35–43. <https://doi.org/10.1016/j.socscimed.2017.07.014>
- Kotcher, J. E., Myers, T. A., Vraga, E. K., Stenhouse, N., & Maibach, E. W. (2017). Does Engagement in Advocacy Hurt the Credibility of Scientists? Results from a Randomized National Survey Experiment. *Environmental Communication*, 11(3), 415–429. <https://doi.org/10.1080/17524032.2016.1275736>

Key Words: Advocacy, Transportation, Pedagogy

Track 14 Individual Paper Submissions

HETEROGENEOUS NONLINEAR RELATIONSHIPS BETWEEN BUILT ENVIRONMENT ATTRIBUTES AND VMT IN SUBURBAN AND URBAN AREAS

Abstract ID: 4

Individual Paper Submission

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Limited developable lands and high development costs in urban areas have been pushing new residential development to suburban areas (Levitt & Eng, 2021). Because suburbanites tend to drive longer than urban residents, designing effective built environment interventions to reduce suburbanites’ auto use is key to sustainable transportation. The literature on the built environment and auto use sheds light on the issue. There are, however, two research gaps. First, few studies focus on the relationships between built environment attributes and auto use in suburban areas. Previous studies often examine the whole metropolitan area or compare traditional and suburban neighborhoods in the same region, and conclude that neo-traditional neighborhood design helps mitigate auto use. However, the results derived from these studies and associated planning implications may not be applicable to suburban areas. Several studies have shown the heterogeneous effects of the built environment across their study areas (Elldér et al., 2020; Salon, 2015). Second, previous studies often apply (generalized) linear models, which may bias the true relationships between built environment attributes and auto use. Recent studies have shown that the relationships are irregularly nonlinear (Ding et al., 2018). Linear models may not fit these nonlinear relationships well and hence underestimate the efficacy of using built environment interventions to alter travel behavior (Wu et al., 2019).

Using household travel survey data from the Twin Cities area, USA, we applied the gradient boosting decision tree method to address two research questions: Is the built environment equally important to predicting vehicle miles traveled (VMT) in urban and suburban areas? How do the relationships between built environment attributes and VMT in suburban areas differ from those in urban areas? Results showed that built environment attributes in suburban areas collectively have a smaller contribution to predicting VMT than those in urban areas. By relaxing the linear assumption, we found that population density, land use entropy, and transit stop density, important to VMT in urban areas, have trivial influences on VMT in suburban areas. By contrast, promoting job accessibility and intersection density in suburban areas seems promising to mitigate auto use.

This study contributes twofold to the literature. First, it shows that the nonlinear relationships between built environment attributes and VMT are prevalent and differ between urban and suburban areas, which informs the research design of future studies on the relationships. Second, the results suggest that policy makers should ponder built environment interventions for reducing auto use in suburban areas. Policies that work in urban areas, such as population densification and land use diversification, might not be effective at all in suburban areas.

Citations

- Ding, C., Cao, X. J., & Næss, P. (2018). Applying gradient boosting decision trees to examine non-linear effects of the built environment on driving distance in Oslo. *Transportation Research Part A: Policy and Practice*, 110, 107–117. <https://doi.org/10.1016/j.tra.2018.02.009>
- Elldér, E., Haugen, K., & Vilhelmson, B. (2020). When local access matters: A detailed analysis of place, neighbourhood amenities and travel choice. *Urban Studies*, 59(1), 120–139. <https://doi.org/10.1177/0042098020951001>
- Levitt, Z., & Eng, J. (2021). Where America’s developed areas are growing: ‘Way off into the horizon’. *The Washington Post*. Retrieved 02-24-2022 from <https://www.washingtonpost.com/nation/interactive/2021/land-development-urban-growth-maps/>

- Salon, D. (2015). Heterogeneity in the relationship between the built environment and driving: Focus on neighborhood type and travel purpose. *Research in Transportation Economics*, 52, 34-45. <https://doi.org/10.1016/j.retrec.2015.10.008>
- Wu, X., Tao, T., Cao, J., Fan, Y., & Ramaswami, A. (2019). Examining threshold effects of built environment elements on travel-related carbon-dioxide emissions. *Transportation Research Part D: Transport and Environment*, 75, 1-12. <https://doi.org/10.1016/j.trd.2019.08.018>

Key Words: VMT, land use, machine learning, travel behavior, suburban planning

ASSESSING THE SEVERITY OF TRAFFIC CRASHES IN ABU DHABI: A MACHINE LEARNING APPROACH

Abstract ID: 1005

Individual Paper Submission

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The World Health Organization identifies road traffic injuries as a global health problem as traffic crashes are predicted to become the seventh leading cause of death by 2030, especially among youth aged between 15-29 years of age (WHO, 2018). The 2018 Global Status Report on Road Safety identifies that the traffic death in the Eastern-Mediterranean region reached 18 deaths per 100,000 population, the third-highest in the world after Africa (26.2 per 100,000) and South-east Asia (20.7 per 100,000) (WHO, 2018).

Previous studies either were not comprehensive with the use of indicators (Alikhani et al., 2013) or those with more comprehensive approach did not include characteristics of initiator and victim to examine the severity of accidents (De Ona et al., 2013). Also, the middle-eastern region has remained outside the purview of recent studies using the ML approaches to predict severity of accidents except for a few (Jamal et al., 2020) focusing in Saudi Arabia. This is one of the first studies predicting the severity of crashes among the drivers in the United Arab Emirates. Traffic Accident Data from the Abu Dhabi Police were analyzed using an artificial intelligence approach for the severity of accidents measured as Mild, Moderate, Severe and Fatal. About 11,400 observations for 2014-2017 were accessed. Indicators of individual characteristics, vehicular characteristics, behavioral characteristics, and accident characteristics were analyzed for their importance using several machine learning algorithms, including gradient boosting (GB), support vector machines (SVM), and random forest (RF). The chosen techniques are well documented in the literature with proven predictive abilities for classification problems (Lin et al., 2021). Each model is tuned using a random search using 1000 iterations. Random search does not test all hyperparameter combinations but rather randomly selects a defined number of hyperparameter combinations, hence it is typically less expensive while producing competitive results (Probst et al., 2019). The models are evaluated using two performance metrics, accuracy and F1-scores.

Results indicate no case of overfitting of the data. The RF outperformed both the GB and the SVM approaches with the confusion matrix of RF reporting a better prediction for all the four classes of severity of accident. The feature importance values report that the age of car, age of the injured, and the age of the initiator have the highest effect on severity. Vehicle and road characteristics such as vehicle class, accident type, lighting are slightly associated with the severity. Consistent with other studies, gender was the least important predictor of severity.

The implications are directed towards the Abu Dhabi Department of Municipalities and Transport (AD-DMT) that provide crucial insight for road safety policies and appropriate countermeasures to mitigate the occurrence and severity of crashes.

Citations

- Alikhani, M., Nedaie, A., & Ahmadvand, A. (2013). Presentation of clustering-classification heuristic method for improvement accuracy in classification of severity of road accidents in Iran. *Safety science*, 60, 142-150.
- de Oña, J., López, G., & Abellán, J. (2013). Extracting decision rules from police accident reports through decision trees. *Accident Analysis & Prevention*, 50, 1151-1160.
- Jamal, A., & Umer, W. (2020). Exploring the injury severity risk factors in fatal crashes with neural network. *International Journal of Environmental Research and Public Health*, 17(20), 7466.
- Lin, M., Ali, A., Andargie, M. S., & Azar, E. (2021). Multidomain Drivers of Occupant Comfort, Productivity, and Well-Being in Buildings: Insights from an Exploratory and Explanatory Analysis. *Journal of Management in Engineering*, 37(4), 04021020.
- Probst, P., Wright, M. N., & Boulesteix, A. L. (2019). Hyperparameters and tuning strategies for random forest. *Wiley Interdisciplinary Reviews: data mining and knowledge discovery*, 9(3), e1301.

IMPACTS OF ACTIVE TRANSPORTATION PLANS ON BUILT ENVIRONMENT AND TRAVEL BEHAVIOR: A LONGITUDINAL ASSESSMENT OF THE SAN FRANCISCO BAY AREA

Abstract ID: 1008

Individual Paper Submission

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Following the global climate movement, cities around the world have adopted climate action plans and other forms of sustainable plans that promote active transportation (i.e., walking and cycling). Although previous studies have evaluated the impacts of active transportation policies, they possess several limitations including inconsistent measures, a lack of ideal research design to evaluate before-and-after treatment effects, and failure to control other factors such as policy context, culture, custom and habit that tend to influence the magnitude of impacts (Pucher et al., 2010). Moreover, few studies have examined the causal impacts of plans (Millard-Ball, 2013), specifically what gets implemented as the outcome of such plans.

This study adopts a mixed method approach to investigate the impacts of various levels of active transportation plans on the actual built environment and pedestrian infrastructure changes, as well as their influence on regional level travel patterns in the San Francisco Bay Area for the past decade. Using a novel historical dataset of pedestrian infrastructure generated from Google Street View images (Li et al., 2022), along with multiple years' of household travel surveys (e.g., CHTS, NHTS, and app-based survey), this study aims to address some limitations of previous studies evaluating the effectiveness of active transportation programs and policies systemically. Comparing cases from other geographic areas, future studies can potentially identify divergent policy impacts and implications of active transportation plans in different contexts.

Citations

- Li, M., Sheng, H., Irvin, J., Chung, H., Ying, A., Sun, T., Ng, A., & Rodriguez, D. (2022). Using Computer Vision on Street View Imagery to Map Crosswalks of Transit-Oriented Development Station Areas in the United States from 2007 to 2020. 101th Annual Meeting of the Transportation Research Board, Washington, D.C.
- Millard-Ball, A. (2013). The Limits to Planning: Causal Impacts of City Climate Action Plans. *Journal of Planning Education and Research*, 33(1), 5–19. <https://doi.org/10.1177/0739456X12449742>
- Pucher, J., Dill, J., & Handy, S. (2010). Infrastructure, programs, and policies to increase bicycling: An international review. *Preventive Medicine*, 50, S106–S125. <https://doi.org/10.1016/j.ypmed.2009.07.028>

Key Words: active transportation, built environment, travel behavior, computer vision

STUDY ON ROAD NETWORK CHARACTERISTICS AND RESILIENCE MEASUREMENT OF FIVE NEW TOWNS IN SHANGHAI

Abstract ID: 1017

Individual Paper Submission

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Since the new century, as one of the biggest cities in China, Shanghai has been trying to solve the problem of "big-city disease" through the construction of new towns. During the 14th Five Year Plan period, building "independent and comprehensive node cities" is the core goal of Shanghai new town construction. Considering that building a resilient road network is of great significance to improve the independence and integrity of the functions of the new city, this paper analyzes the structural characteristics of the road networks of five new towns in Shanghai, and measures their resilience level under "random failure" and "deliberate attack", using complex network method. The results show that: (1) the road networks of the five new towns in Shanghai can better absorb the impact of "random failure", while they are vulnerable to "deliberate attack"; (2) the road networks of Fengxian and Jiading with moderate density and complete hierarchy have higher resilience level, while the road networks of Nanhui and Songjiang with low density and poor homogeneity have lower resilience level; (3) the highly "efficient" road network in the daily situation does not always highly "resilient" in the disturbance scenario. Based on the analysis above, the following suggestions are put forward to improve the resilience of road network in five new towns in Shanghai: (1) incorporate the resilience index into the relevant planning of the transportation system and try to find the balance between "efficiency" and "resilience" to improve the comprehensive service level of the road system under both daily and disturbance scenarios; (2) improve the integrity of road hierarchy system on the basis of considering the impact of

density, spatial form and hierarchical structure of road network, so as to comprehensively improve the resilience of road network in ensuring "spatial accessibility" and supporting "efficient flow" under disturbance scenarios; (3) promote the renewal of road network and reasonably change the road width and land use types on both sides, based on the analysis of its current service capability and desired one according to the relationship of road topology and residents' mobility characteristics, so as to better serve the residents' life in Shanghai new towns.

Citations

- Albert R, Jeong H, Barabasi A L. Error and attack tolerance of complex networks [J]. *Nature*, 2000, 406(6794): 378-82.
- Sharifi A. Resilient urban forms: A review of literature on streets and street networks [J]. *Building and Environment*, 2019, 147: 171-87.
- Ganin A A, Kitsak M, Marchese D, et al. Resilience and efficiency in transportation networks [J]. *Science Advances*, 2017, 3(12): e1701079.
- WANG J. Resilience of Self-Organised and Top-Down Planned Cities-A Case Study on London and Beijing Street Networks [J]. *PLoS ONE*, 2015, 10(12): e0141736.
- Boeing, Geoff. OSMnx: New Methods for Acquiring, Constructing, Analyzing, and Visualizing Complex Street Networks [J]. *Computers Environment & Urban Systems*, 2017, 65: 126-39.

Key Words: road network, characteristic analysis, resilience measurement, five new towns in Shanghai, Complex network theory

ASSESSING THE AVAILABILITY OF ALTERNATIVE TRANSPORTATION SERVICES FOR OLDER ADULTS BY AGE GROUP: A CASE STUDY OF FLORIDA

Abstract ID: 1032

Individual Paper Submission

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Background and Objective:

As drivers age, the needs for alternative transportation services become critical to ensure their safe mobility for a lifetime. The expected growth of the older population makes it even more imperative that a widely available network of alternative transportation services is developed, and advocacy efforts are made to improve the safety, access, and mobility of older adults. To inform policies and provide appropriate transportation services other than private vehicles for older adults, this study aims to quantify and visualize spatial gaps between the availability of alternative transportation services and the distribution of older adults' population by age group (i.e., age between 65 and 74, between 75 and 84, and above 85) instead of one group of older adults which represent typically age above 65.

Methods:

Using Florida as a case study, the study mapped the distribution of older adults' population by age group against the availability of alternative transportation services in census block group level. First, this study sought to consider the spatial service area of each alternative transportation service and aggregated the number of available services into census block group level using Find-a-Ride Florida database, which provides available transportation options for older adults hosted in Florida Department of Transportation. After creating the availability GIS layer, Cluster and Outlier Analysis was used to find statistically significant clustered areas with lower values (lower transportation availability), while excluding spatial outliers. Next, this study identified areas with highly clustered older adult populations by age group in the same geographic level. Finally, the spatial gaps were determined by overlapping areas which have both lower transportation availability and concentrated older adults' populations by age group.

Results:

The results revealed the spatial pattern of alternative transportation service-deficient areas with the amount of affected older adult population by the group. Regardless age group distribution, the majority gap areas were observed to be Central Florida as well as part of South-West and East coastal areas. The number of older adults reside in the gap areas were 509,317 (21.9% of total 2,321,394 people), 303,138 (22.6% of total 1,339,375 people), 91,789 (5.9% of total 544,659 people) for older adults age between 65 and 74, between 75 and 84, and 85 above respectively.

Contribution and Conclusion:

While most transportation related studies for older adults looked at the older adults as a single group of 65 or older with bigger analysis units, this approach examined older adults in three age groups with a finer resolution. Through using Florida as a case study, this paper shows that these visualized and quantified outputs would be useful not only

in providing spatial information, but also in providing a valuable framework and information to urban and transportation professionals as well as relevant stakeholders to better resolve mutual challenges.

Citations

- Dumbaugh, E. (2008). Designing Communities to Enhance the Safety and Mobility of Older Adults: A Universal Approach. *Journal of Planning Literature*, 23(1), 17–36. <https://doi.org/10.1177/0885412208318559>
- Sun, Y., & Thakuriah, P. (Vonu). (2021). Public transport availability inequalities and transport poverty risk across England. *Environment and Planning B: Urban Analytics and City Science*, 48(9), 2775–2789. <https://doi.org/10.1177/2399808321991536>
- Wong, R. C. P., W. Y. Szeto, Linchuan Yang, Y. C. Li, and S. C. Wong. (2018). Public Transport Policy Measures for Improving Elderly Mobility. 63, 73-79. <https://doi.org/10.1016/j.tranpol.2017.12.015>

Key Words: Older adults, Alternative transportation service, Spatial transportation availability

DOUBLE DISADVANTAGES FOR OLDER ADULTS DURING THE PANDEMIC: WHEN THE “TRANSPORT DISADVANTAGED” MEETS THE “DIGITAL DIVIDE”

Abstract ID: 1036

Individual Paper Submission

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Older adults face more travel and technology usage difficulties during the pandemic than young people. While they face more health risks during the pandemic and are not encouraged to increase out-of-home activities, they also suffer from the “digital divide”. Though many studies have examined the travel behavior and technology usage changes during the pandemic (Hara & Yamaguchi, 2021; Jiao & Azimian, 2021; Palm et al., 2021; Salon et al., 2021), studies focusing on older adults remain rare. Given the disproportional challenge of out-of-home activity reduction and the prevalent “digital divide” among older adults, examining the technology usage and travel behavior for different activities among older adults during the pandemic is critical. How did older adults adjust their daily routines during the COVID-19? How did their daily technology usage change compared to the pre-COVID? What factors are related to these changes? Are these changes temporary due to the pandemic, or will they create a “new normal” in travel behavior and technology usage among older adults? Answering these questions help planners and social service providers understand older adults’ travel and technology needs during and after the pandemic and develop paths towards age-friendly transportation systems and communities. This study uses a survey on 2,510 older adults in the US to investigate their travel behavior and technology usage changes during the pandemic and the factors related to these changes. Results of the study show that age adds to the transport disadvantage and “digital divide” during the pandemic. Additionally, females, those without college degrees, and those with medical conditions are more likely to reduce daily trips during the pandemic. The increase in technology usage happens among male respondents, those with college degrees, and those who had experiences using the technology before the pandemic. However, the increases in technology usage, especially for social and healthcare activities, occur among people of color and those who experienced job loss and health declines during the pandemic. The study also shows that while some changes during the pandemic, such as the increase of online social activities and meal delivery and decreased driving trips, are temporary and might reduce after the pandemic, some other changes, including the increase in active travel and declines in public transit and ride-hailing, and the increased usage of some technology platforms, such as online shopping and e-banking, tend to continue in many older adults’ post-pandemic life.

Citations

- Hara, Y., & Yamaguchi, H. (2021). Japanese travel behavior trends and change under COVID-19 state-of-emergency declaration: Nationwide observation by mobile phone location data. *Transportation Research Interdisciplinary Perspectives*, 9, 100288.
- Jiao, J., & Azimian, A. (2021). Exploring the factors affecting travel behaviors during the second phase of the COVID-19 pandemic in the United States. *Transportation Letters*, 13(5–6), 331–343.
- Palm, M., Allen, J., Liu, B., Zhang, Y., Widener, M., & Farber, S. (2021). Riders Who Avoided Public Transit During COVID-19: Personal Burdens and Implications for Social Equity. *Journal of the American Planning Association*, 1–15.
- Salon, D., Conway, M. W., da Silva, D. C., Chauhan, R. S., Derrible, S., Mohammadian, A. K., Khoeini, S., Parker, N., Mirtich, L., & Shamshiripour, A. (2021). The potential stickiness of pandemic-induced behavior changes in the United States. *Proceedings of the National Academy of Sciences*, 118(27).

Key Words: pandemic, older adults, daily travel, technology usage, active travel

POP-UP INFRASTRUCTURE'S IMPACT ON BIKESHARE USE: A QUASI-EXPERIMENTAL APPROACH

Abstract ID: 1058

Individual Paper Submission

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The implementation of pop-up infrastructure to support active transportation – such as temporary road closures, non-permanent bike lanes, or timebound pedestrian streets – occurred in diverse environments during the COVID-19 pandemic. Such initiatives provided necessary space for outdoor recreation and allowed for social distancing. While these initiatives were often celebrated by active transportation advocates, there remains much to be learned regarding the effect of pop-up infrastructure on active transportation use during the pandemic and into the post pandemic period. In this paper, we utilize the example of one major roadway closure – Martin Luther King Drive (MLK) in Philadelphia – to investigate how bikeshare use may have altered in response to this pop-up infrastructure intervention. Much research has explored how bikeshare – one of the more popular, and municipally supported active transport modes – use patterns changed during the pandemic, but few studies have explicitly investigated the relationship between pop-up infrastructure and bikeshare use. We employ a quasi-experimental approach that measures the effect of MLK's closure and subsequent reopening on average daily bike share trip durations. We define a “treatment group” as those stations immediately proximate to MLK, and a “control” group as those stations close-by, but not as easily accessible to the closed roadway. We employ a difference-in-difference estimator using time series data to highlight the effect of: 1) the road closure, 2) the road's reopening, and 3) the addition to MLK of new cyclist-serving infrastructure on bikeshare trip duration. While both the treatment and control group stations experienced increases in average trip durations following the closure of MLK to automobiles, the effect for nearby stations was substantively higher. This finding suggests that, even in the pandemic environment, where bikeshare trip durations increased overall, the pop-up infrastructure had an additive effect on the general positive trend. Perhaps most interesting, the different effect on trip durations for treatment as compared to control stations has held into the period following MLK's reopening. This finding suggests that either 1) the impact of the pop-up infrastructure spurred long term behavioral changes for users at nearby stations, 2) that newly added supportive and permanent infrastructure for cyclists on MLK helped sustain changes made during the pop-up period, or 3) some combination of both user behavior and infrastructure investment has yielded a sustained positive effect. We employ an instrumental variable approach to explore these different implications and discuss the results of these implications for policy. Regardless of the exact drivers of the sustained changes in bikeshare use, our results signal that the positive impact of pop-up infrastructure can live past its lifetime on roadways and yield beneficial impacts for active transport users going into the future.

Citations

- Lovelace, Robin. 2021. “Open Source Tools for Geographic Analysis in Transport Planning.” *Journal of Geographical Systems*, January. <https://doi.org/10.1007/s10109-020-00342-2>.
- Wang, Haoyun, and Robert Noland. 2021. “Changes in the Pattern of Bikeshare Usage Due to the COVID-19 Pandemic.” *Findings*, January, 18728. <https://doi.org/10.32866/001c.18728>.
- Schwarz, Lucas, Andreas Keler, and Jukka M. Krisp. 2022. “Improving Urban Bicycle Infrastructure-an Exploratory Study Based on the Effects from the COVID-19 Lockdown.” *Journal of Urban Mobility* 2 (December): 100013. <https://doi.org/10.1016/j.urbmob.2022.100013>.
- Buehler, Ralph, and John Pucher. 2021. “COVID-19 Impacts on Cycling, 2019–2020.” *Transport Reviews* 0 (o): 1–8. <https://doi.org/10.1080/01441647.2021.1914900>.
- Jobe, Jeffrey, and Greg P. Griffin. 2021. “Bike Share Responses to COVID-19.” *Transportation Research Interdisciplinary Perspectives* 10 (June): 100353. <https://doi.org/10.1016/j.trip.2021.100353>.

Key Words: Pop-up infrastructure, Bikeshare, Quasi-experimental, COVID-19

COLOR LINES IN TRANSIT: RACE AND THE IMPLEMENTATION GAP IN ACCESS TO RAIL

Abstract ID: 1090

Individual Paper Submission

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New transit development has the potential to better connect disadvantaged communities to job opportunities, civic participation, health care and key amenities. However, local financial dynamics can be more significant in winning federal rail grants than project benefits (Lowe, 2013), and elite-led coalitions can be critical for rail implementation (Lowe, Reckhow & Gainsborough, 2016), given the various hurdles, from regulatory to financial, that projects face. This presentation will discuss the relationship between implementation of rail transit projects—done by sub-national units of government—and who benefits by race, uncovering the consequences of existing federal policies and norms for financing and building urban rail. While we recognize the potential of bus rapid transit for delivering speed benefits, we focus on rail investments, as in the United States these currently are the projects that tend to offer more notable speed improvements.

Our preliminary research is based on document review of the 34 urban rail projects under environmental review during the Obama administration. It suggests that the details and mechanisms vary, but that the race of residents (based on environmental impact statements mostly using a binary of white, non-Latinx and “minority”) along a proposed corridor is associated with differential implementation, despite federal mandates for equity in transit service. Drawing on growth machine literature (Molotch, 1976) and emerging planning literature on racial capitalism (Dantzer, 2021), we hypothesize that racialized inequities, local government fiscal capacity, and growth machine coalitions interact to shape unequal implementation. Our next phase of research includes a temporally expanded national dataset and preliminary GIS analysis with paired case studies in Baltimore compared with suburban DC in Maryland and Los Angeles compared with Denver.

Citations

- Dantzer, P. A. (2021). The urban process under racial capitalism: Race, anti-Blackness, and capital accumulation. *Journal of Race, Ethnicity and the City*, 1–22. <https://doi.org/10.1080/26884674.2021.1934201>
- Lowe, K., Reckhow, S., & Gainsborough, J. F. (2016). Capacity and equity: Federal funding competition between and within metropolitan regions. *Journal of Urban Affairs*, 38(1), 25–41. <https://doi.org/10.1111/juaf.12203>
- Lowe, K. (2013). Funding rail: Federal decisions and local financing. *Public Works Management & Policy*, 18(2), 127–144. <https://doi.org/10.1177/1087724X12469794>
- Molotch, H. (1976). The city as a growth machine: Toward a political economy of place. *American Journal of Sociology* 82 (September), 309–32.

Key Words: Public transit, rail, race, equity

HAS THE CONSTRUCTION OF THE MINNEAPOLIS BLUE LINE INDUCED GENTRIFICATION? A DEMOGRAPHIC ANALYSIS OF NEIGHBORHOODS ALONG THE BLUE LINE CORRIDOR

Abstract ID: 1095

Individual Paper Submission

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An evaluation of the social impacts of Transit Oriented Development (TODs) presents a paradox. TODs were initially considered a way to provide public transit and employment access to low-income households. However, concern has also been expressed about the potential of TODs to introduce gentrification, primarily in terms of higher housing prices and displacement of low-income households. Other research suggests that gentrification is more a result of development attributes and associated land use planning policies rather than TODs. The gentrification process has appeared highly variable across studies, with cities demonstrating differing patterns and studies employing disparate methodologies. This study seeks to clarify the process in Minneapolis along the Blue Line light rail corridor, where relatively few quantitative studies exist. In a longitudinal analysis, this research examines changes in demographic and housing data in equivalent transit corridors before and after construction of the Metro Blue Line. Findings for the decade of construction suggest that light rail has contributed significantly to an increase in the population with higher education, but not other indicators of gentrification including rising home values or household incomes.

Citations

- Baker, D. & Lee, B. (2019). How does Light Rail Transit (LRT) impact gentrification? Evidence from fourteen U.S. urbanized areas. *Journal of Planning Education and Research*, 39(1), 35–49. <https://doi.org/10.1177%2F0739456X17713619>
- Cao, X. J., & Schoner, J. (2014). The influence of light rail transit on transit use: An exploration of station area residents along the Hiawatha line in Minneapolis. *Transportation Research Part A: Policy and Practice*, 59, 134–143. <https://doi.org/10.1016/j.tra.2013.11.001>

- Kahn, M. E. (2007). Gentrification trends in new transit-oriented communities: Evidence from 14 cities that expanded and built rail transit systems. *Real Estate Economics*, 35(2), 155–182. <https://doi.org/10.1111/j.1540-6229.2007.00186.x>
- Padeiro, M., Louro, A., & da Costa, N. M. (2019). Transit-oriented development and gentrification: a systematic review. *Transport Review*, 39 (6), 733 – 754. <https://doi.org/10.1080/01441647.2019.1649316>
- Rayle, L. (2015). Investigating the connection between Transit-Oriented Development and displacement: Four hypotheses. *Housing Policy Debate*, 25 (3), 531-548. <https://doi.org/10.1080/10511482.2014.951674>

Key Words: Gentrification, Light Rail, Transit Oriented Development, Redevelopment, Demographic Change

ASSESSING ECONOMIC IMPACT OF DISASTER-INDUCED TRANSPORTATION DISRUPTIONS USING A UNIVERSITY-COMMUNITY PARTNERSHIP FRAMEWORK

Abstract ID: 1097

Individual Paper Submission

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Transportation systems play a critical role in maintaining supply chains for effective post-disaster recovery. Modeling the potential economic impact of transportation-related disruptions, therefore, is an important step to promoting pre-event communitywide recovery and resilience planning. While the supply chain analysis is quite common in the field of business administration, it is highly “firm-focused”, that is, focused on improving specific business practices develop novel techniques to model supply. These studies typically either examine supply chains at the firm-level, or examine supply chain disruption management within the firm, or model supply chain linkages between the firm and its counterparts including through transportation systems. This high focus on firm-level action diminishes the utility of this research for planners and policymakers who must conceptualize supply chains within the broader economic context and whose interventions are policy-based, applied area-wide, and largely strategic given financial constraints. Importantly, most such studies use complex stochastic models that are cost prohibitive and overly sophisticated for use by public sector entities with limited resources. What is needed instead are low-cost, public use methodologies to assess regional level economic impacts of disasters.

The objective of this study is to develop a collaborative university-community partnership framework to analyze the economic impact of post-earthquake transportation disruptions. The study is based on the 2019 scenario of a M7.0 earthquake occurring in Salt Lake City segment of Utah’s Wasatch Fault system. A 2015 earthquake scenario report estimated that the six-county Wasatch Front region is extremely earthquake-prone and that a M7.0 earthquake could result in short-term economic loss of \$33 billion. While such earthquake scenario reports are helpful to generate broad-stroke disaster impact assessments, they do not provide enough nuanced or finer grain insights into indirect impacts on the economy. This in turn limits the ability of governments to estimate ROIs on pre-disaster mitigation investment decisions or to promote mitigation thinking in the business community most at risk. This study fills this gap by developing a standard framework that local communities can use to estimate economic impact of disaster-induced transportation disruptions.

This study combines road damage and functionality estimates produced by Hazus, a software commonly used to estimate damage in disaster scenarios, with travel demand modeling (TDM) to calculate estimated truck travel delays. These delays were then annualized based on the Hazus and TDM results and run through REMI PI+, a software used to forecast regional economic, population and labor market impacts. The study found that the Wasatch Front can expect \$5.3 billion of damage due to intermediate supply chain disruptions in the event of an M7.0 earthquake in the SLC Segment of the Wasatch Fault, and that the top 10 worst-affected industrial sectors comprise approx. 70% of Utah’s economy. Importantly, the study demonstrates how to bring a set of public sector actors (namely, emergency management departments, metropolitan planning organizations, port authorities, and university research centers) and tools they already use (namely, HAZUS, travel demand modeling and REMI+) to provide planning support for disaster planning that may otherwise be inaccessible to policymakers. This novel but inexpensive framework can be replicated in other at-risk communities that also wish to build disaster resilience proactively.

Citations

- Albartzeth, G., Pujawan, I. N., Hilletoft, P., & Tjahjono, B. (2020). Mitigating transportation disruptions in a supply chain: a cost-effective strategy. *International Journal of Logistics Research and Applications*, 23(2), 139-158.
- Hosseini, S., Ivanov, D., & Dolgui, A. (2019). Review of quantitative methods for supply chain resilience analysis. *Transportation Research Part E: Logistics and Transportation Review*, 125, 285-307.
- Wagner, S. M., & Bode, C. (2009). Dominant risks and risk management practices in supply chains. In *Supply chain risk* (pp. 271-290). Springer, Boston, MA.

- Goldbeck, N., Angeloudis, P., & Ochieng, W. (2020). Optimal supply chain resilience with consideration of failure propagation and repair logistics. *Transportation Research Part E: Logistics and Transportation Review*, 133, 101830.
- Töyli, J., Lorentz, H., Ojala, L., Wieland, A., & Wallenburg, C. M. (2013). The influence of relational competencies on supply chain resilience: a relational view. *International Journal of Physical Distribution & Logistics Management*.

Key Words: disaster, economy, transportation, earthquake

PLANNING PUBLIC ELECTRIC VEHICLE CHARGING STATIONS FOR EQUITABLE ACCESS AND IMPROVED CURB PRODUCTIVITY

Abstract ID: 1099

Individual Paper Submission

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Studies have shown that curbside Electric Vehicle (EV) energy supply will bring great benefits for raising EV usage by reduced range anxiety, companying with additional privilege in reduced transportation-related greenhouse gas emissions, maximized public investment, and advanced public initiatives (Hall & Lutsey, 2017). Public charging stations at urban center curbs can serve many user cohorts and especially benefit apartment and condo dwellers without home charging access. However, they are still sparsely implemented at urban center curbs, unlike ones installed in private or semi-public parking spots. Although the relatively low-level EV penetration currently represents the most significant barrier to wider deployment of EV charging infrastructure in the U.S., the market penetration of EVs is projected to increase under the recently outlined target of 50% EV sales share in 2030 (The White House, 2021). Additionally, the existing usage of public EV charging stations is insufficient in general and uneven across different locations (Marmaras et al., 2017) with low curb productivity.

In the meantime, emerging mobility-on-demand services keep burgeoning and increasing the demand for curbside space, especially in urban centers due to more pick-up and drop-off activities (Wang et al., 2022). Local municipalities have started to invest in public charging stations on curbsides closed to apartments and condo communities to provide charging accessibility for their residents. They have been hindered from purchasing EVs due to the lack of available public charger (Nazari-Heris et al., 2022). Without proper locational planning and curb use regulations, the urban center curbs could become more burdened, less productive, and with decreased access to the charging stations.

Thus, the research aimed at allocating the EV charging station at urban center curbs for more equitable access and maximizing curb productivity under scenarios of different regulation policies. The paper integrates data-driven optimization and scenario planning based on human behavioral data and employs a survey outcome on the perceptions of potential EV users. We pilot the City of Gainesville, FL, and expect findings from three aspects. First, it helps in understanding the perception and potential behavior of PEV user's residing in apartments and condo dwells in terms of implementing curbside charging stations. Second, it identifies productive curbside spaces and regulation strategies for PEV charging station planning. Lastly, it projected future impact over the next few decades considering the dynamic demands for public EV charging networks and illustrates the co-use of the stations for mobility-on-demand services.

The research addresses the research needs of preparing smart curb environments for the emerging vehicle technologies and mobility services in cities. It innovates data-driven infrastructure planning methods and management strategies for better coordinating the curbside environments, vehicles, and humans. This scenario-based modelling contributes to planning research by including human perceptual attributes, considering the demand of current under-served communities and potential users of PEVs. By optimizing the productivity of curbside charging stations while considering equity, this study suggests planning practices with productive strategies when facilitating equitable access and encouraging EV uptake in the group of apartment and condo dwellers.

Citations

- Hall, D., & Lutsey, N. (2017). Emerging best practices for electric vehicle charging infrastructure. Washington, DC: The International Council on Clean Transportation (ICCT).
- Marmaras, C., Xydias, E., & Cipcigan, L. (2017). Simulation of electric vehicle driver behaviour in road transport and electric power networks. *Transportation Research Part C: Emerging Technologies*, 80, 239–256. <https://doi.org/10.1016/j.trc.2017.05.004>.
- Nazari-Heris, M., Loni, A., Asadi, S., & Mohammadi-ivatloo, B. (2022). Toward social equity access and mobile charging stations for electric vehicles: A case study in Los Angeles. *Applied Energy*, 311, 118704. <https://doi.org/10.1016/j.apenergy.2022.118704>.

- The White House. (2021, August 5). FACT SHEET: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks. Retrieved March 31, 2022, from <https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/>.
- Wang, Y., Hao, H., & Wang, C. (2022). Preparing Urban Curbside for Increasing Mobility-on-Demand Using Data-Driven Agent-Based Simulation: Case Study of City of Gainesville, Florida. *Journal of Management in Engineering*, 38(3), 05022004. [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0001021](https://doi.org/10.1061/(ASCE)ME.1943-5479.0001021).

Key Words: EV Charging Station, Infrastructure Planning, Smart Curb, Social Equity, Energy Transition

IMPACT OF STREETCAR OPERATION ON LAND USE CHANGES, TRAFFIC, AND OTHER OUTCOMES

Abstract ID: 1101

Individual Paper Submission

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Since a two-mile streetcar (S-Line) in Salt Lake City and South Salt Lake, Utah, started operating in December 2013, the surrounding neighborhoods have experienced noticeable growth, having more than 1,000 new residential units and over two million square feet of redevelopment. Despite these changes, no systematic evaluation of the S-Line corridor has been completed to date. While transit systems are often associated with a reduction in traffic congestion, energy consumption (Park & Sener, 2019), and improvement of air quality (Guo et al., 2020), there are also challenges found, such as increased rents (Nelson, 2017), additional trips (Cox et al., 2017), and new parking demands (Wai et al., 2017). Thus, to help shape future transportation policies and create a sustainable transit corridor, we aim to analyze the impact of the S-Line and associated rezonings on land development and traffic along the streetcar corridor.

We employ a quasi-experimental research design and data before and after the S-Line operation to examine changes in the S-Line corridor in terms of land use, property values, trip generation, parking demand, vehicle and pedestrian traffic volumes, traffic safety, energy consumption, and gas emission. The S-Line corridor was defined as the half-mile north and south of the S-Line in Utah. We collected (1) land use and parking volume data from time-series Google maps, Salt Lake County Tax Assessors parcel-level database, and field observations, (2) data on vehicle volumes, transit ridership, pedestrian usage, and crashes from the Utah Transit Agency, Utah Department of Transportation, and field observations, and (3) energy and emission reduction estimates from the metrics developed by the U.S. Environmental Protection Agency. Besides the analyses of the quantifiable changes, we also interviewed developers who have either already built projects along the S-line or are in the process of doing so. The interviews were used to understand the driving forces of redevelopments along the corridor and to enrich our interpretation of the land use and traffic changes.

Some of the key findings of this study are as follows: In the past ten years, 9% of the S-line corridor land experienced a physical change that increased the property value by about \$ 1 billion. Parking demand has risen slightly, managed by different user groups sharing parking facilities and utilizing structured parking spaces. The closest parallel artery (one block distance away from the S-line) showed a 7% increase in the vehicle traffic volume and a 42% rise in pedestrian trips, while the total ridership of S-line and buses operated within the S-line corridor remained steady. Further, crash rates of the S-line corridor were decreased by 17%. As a result of analyzing the wide range of datasets, we concluded that the S-Line operation brought a significant amount of economic development to the nearby neighborhoods while creating safer and pedestrian-friendly environments. However, as the streetcar corridor is expected to continue experiencing land use changes due to the presence of the S-line and potential line extension in the future, further investigations are necessary to evaluate its long-term impact on the local communities.

There is demand in the planning and policy formulation communities for accurate tools that predict the effects of a transit improvement like a new rail line. Other states, regional and local organizations such as State Departments of Transportation and Metropolitan Planning Organizations, public health organizations, transit agencies, and city and county planning commissions are also eager to have reliable evidence of transit's effects on congestion and abutting development. Our work will provide the Utah Transit Authority and other transit operators across the country with information on the possible benefits of the streetcar and the observed impact on local communities.

Citations

- Cox, L., Bassi, A., Kolling, J., Procter, A., Flanders, N., Tanners, N., & Araujo, R. (2017). Exploring synergies between transit investment and dense redevelopment: A scenario analysis in a rapidly urbanizing landscape. *LANDSCAPE AND URBAN PLANNING*, 167, 429–440. <https://doi.org/10.1016/j.landurbplan.2017.07.021>
- Guo, X., Sun, W., Yao, S., & Zheng, S. (2020). Does high-speed railway reduce air pollution along highways? - Evidence from China. *Transportation Research Part D-Transport And Environment*, 89. <https://doi.org/10.1016/j.trd.2020.102607>
- Nelson, A. C. (2017). Transit and Real Estate Rents. *Transportation Research Record*, 2651, 22–30. <https://doi.org/10.3141/2651-03>
- Park, E. S., & Sener, I. N. (2019). Traffic-related air emissions in Houston: Effects of light-rail transit. *Science of the Total Environment*, 651, 154–161. <https://doi.org/10.1016/j.scitotenv.2018.09.169>
- Wai, H. P., Mohammadreza, G. S., & Premkumar, R. (2017). Future Parking Demand at Rail Stations in Klang. 09001, 1–9.

Key Words: Streetcar, Public transportation, Economic development, Quasi experiment

“WAKING THE SLEEPING GIANT”: TRIBAL COMMUNITIES AND EQUITABLE PARTICIPATION IN THE AVIATION PLANNING PROCESS

Abstract ID: 1113

Individual Paper Submission

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In March 2022, the Federal Aviation Administration (FAA) hosted the first symposium on Tribal Aviation. Featured speaker and Department of Transportation Assistant Secretary for Tribal Affairs, Arlando Teller, remarked that aviation infrastructure was a “sleeping giant” in Tribal communities. The years of the COVID pandemic highlighted the importance of airport access for life-saving medical care. However, it also highlighted gaps to airport access and challenges in the airport planning process across Indian Country. Given that both scholarship and practice has long neglected to center the aviation planning context for Tribal communities, there remains much opportunity for preliminary explorations on whether and how to leverage this “sleeping giant” for the protection, advancement, and benefit of Tribal communities.

This research aims to document the barriers for Tribal governments to participate in American federal aviation planning processes and contextualizes the impact of airport access (or lack of) on Tribal communities. To examine barriers and impacts, this work evaluates Tribal airport development case studies, constructs maps of the Indian Country aviation network, and analyzes interviews with relevant leaders within the FAA and within the self-governed and sovereign lands of Native American tribes. To the greatest extent possible, this work aims to center voices and experiences of Tribal leaders using their responses to digital surveys and semi-structured interviews. The data collection effort includes targeted outreach to a sample of the Tribal leaders listed in the Bureau of Indian Affairs’ (BIA) Tribal Leaders Directory. While this research does not contain human subjects, there are additional cultural sensitivities and governance protocols to honor when pursuing research collaborations with Tribal governments. This work adheres to the advice provided by the Policy Research Center of the National Congress of American Indians (NCAI) as well as the pillars for community-based participatory research identified in Lucero et al. (2019), which was prepared in collaboration with NCAI.

The preliminary results of this research identify suggest that the barriers for Tribal nations to participate in American federal aviation planning process include: maintaining sovereignty, managing the Tribal land base, securing financial and knowledge capital, lacking political recognition and inclusion, and experiencing epistemic injustices. For example, the rules, procedures, and grant assurances associated with federal aviation programs can conflict with a Tribal government’s commitment to protect their sovereignty. This barrier is closely linked to the specific challenges in Tribal communities that do not have a land base. Additionally, there are challenges related to the protection of sacred sites, wherein Tribal knowledge holders guard precise location information. This Tribal practice can be met with variations of ignorance and hostility since it conflicts with the precision-mapping approaches used by aviation planners. Regarding the impact of airport access for Tribal nations, preliminary results suggest a few core themes: local tourism, advocacy and governance, fishing, and emergency health care access. For example, Albuquerque International Sunport Airport in New Mexico is significant in providing intrastate connectivity to the state capital, which is significant to the political and legislative activity of the more than twenty sovereign Tribal nations within New Mexico.

The results of this work will enhance information sharing and knowledge capital across Tribal communities, produce recommendations on how the FAA can enhance equitable participation in the aviation planning process, and draw connections to prior planning scholarship on the political significance of Tribal planning as a means of self-determination.

Citations

- Davis, J., Pijawka, K. D., Wentz, E., Hale, M., & King, D. A. (2021). Evaluating Geodesign for Community-Based Tribal Planning: The Role of Planners in Marginalized Communities. *Journal of the American Planning Association*, 87(4), 527–541. <https://doi.org/10.1080/01944363.2021.1873168>
- Haney, W. (2015). Protecting Tribal Skies: Why Indian Tribes Possess the Sovereign Authority to Regulate Tribal Airspace. *American Indian Law Review*, 40(1), 1–40.
- Lane, M. B., & Hibbard, M. (2005). Doing It for Themselves: Transformative Planning by Indigenous Peoples. *Journal of Planning Education and Research*, 25(2), 172–184. <https://doi.org/10.1177/0739456X05278983>
- Lucero, J. E., Emerson, A. D., Beurle, D., & Roubideaux, Y. (2020). The Holding Space: A Guide for Partners in Tribal Research. *Progress in Community Health Partnerships: Research, Education, and Action*, 14(1), 101–107. <https://doi.org/10.1353/cpr.2020.0012>
- Zaferatos, N. C. (1998). Planning the Native American Tribal Community: Understanding the Basis of Power Controlling the Reservation Territory. *Journal of the American Planning Association*, 64(4), 395–410. <https://doi.org/10.1080/01944369808976000>

Key Words: Airport planning, Infrastructure, Tribal governance, Equity

SURVEY OF SOCIAL MEDIA USE BY TRANSIT RIDERS DURING THE COVID-19 PANDEMIC

Abstract ID: 1123

Individual Paper Submission

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Social media (e.g., Facebook, Instagram, Twitter), has proven to be a powerful platform to provide essential information especially during times of disruption and disaster for transit providers. Public transit agencies are increasingly using social media platforms to communicate with riders. These platforms provide a cost-effective, reliable, and timely mechanism for sharing information with passengers and other travelers (Chan and Shofer, 2014; Cottrill et al., 2017; Schweitzer, 2014;).

This research examines how transit riders accessed transit information using social media before and during the COVID-19 pandemic in an effort to understand what types of information were being accessed, and to inform transit agency efforts to expand the use of social media as a communication tool with riders. Given the growing trend of public service agencies using social media platforms for communication, the rise of social media users looking to platforms to access news, and breaking news especially, and the long-standing disruption COVID-19 caused to transit agency providers and services, this work is critically important to identify if and how transit riders who use social media are different from the general public and the extent to which transit agencies should tailor communication strategies and platforms based on the way in which users reported accessing information during the pandemic.

We surveyed transit riders in three metropolitan areas, Boston, MA, New Jersey, and Dallas, Texas, to understand how the COVID-19 pandemic affected transit information retrieval. We analyzed 1,173 valid survey responses from February 2021- to May 2021. Survey respondents were asked to report their use of social media, including platform, frequency, and types of transit related information they accessed, before and during COVID-19.

Previous work does not describe how the characteristics of transit riders using social media differ from the average social media user. This work identifies the key characteristics of social media users that are interacting with transit agencies and differentiates the type of information these users/riders seek. While it is widely documented and known which demographic groups in America use social media platforms and for what purposes, this work presents an even more nuanced approach to identifying who is using social media to gather transit-specific information and what types of transit-specific information they are looking for. This work can inform transportation planners and transit agencies on how to use Twitter to effectively communicate with riders to improve public perception of health and safety as it relates to transit ridership during a public health crisis.

Citations

- Chan, Raymond, and Joseph L. Schofer. "Role of Social Media in Communicating Transit Disruptions." *Transportation Research Record* 2415, no. 1 (January 1, 2014): 145–51. <https://doi.org/10.3141/2415-16>.
- Liu, J. H., Shi, W., Elrahman, O. A. (Sam), Ban, X. (Jeff), & Reilly, J. M. (2016). Understanding social media program usage in public transit agencies. *International Journal of Transportation Science and Technology*, 5(2), 83–92. <https://doi.org/10.1016/j.ijtst.2016.09.005>
- Hagar, C. (2013). Crisis Informatics: Perspectives of Trust – Is Social Media a Mixed Blessing? *School of Information Student Research Journal*, 2(2). <https://doi.org/10.31979/2575-2499.020202>

- Pender, B., Currie, G., Delbosc, A., & Shiwakoti, N. (2014). Social Media Use during Unplanned Transit Network Disruptions: A Review of Literature. *Transport Reviews*, 34(4), 501–521. <https://doi.org/10.1080/01441647.2014.915442>

Key Words: ICTs, transit, communication, twitter, pandemic

A LOCUS OF WICKED PROBLEMS: (RE)DEVELOPING INTERSTATE 35 IN AUSTIN, TEXAS

Abstract ID: 1127

Individual Paper Submission

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This case study interrogates organizational communication of historical and emerging projects on the Interstate 35 corridor in Austin, Texas, using a framework of Critical Realism. This north-south corridor was widened into an inter-regional highway and later became one of the first post-WWII interstates. Since 1928, the route has separated racist zoning policies, and their impacts on underrepresented communities exacerbated as the present decades-old, fully congested, double-decked interstate highway. This study shows how the interstate stands as an obdurate structure, both in the physical sense of community disruptor and separator and as a manifestation of implicit racism and disconnection, with multiple competing visions for its future. Variations of preservation, demolition, and expansion are all on the table in this long-term planning process, with decisions riding on agency budgets, forecasts, and public opinion. This study shows how traffic engineers have used traffic forecasting as a version of quantitative storytelling, iteratively showing increases in future traffic demand when the facility has long stood at capacity. In opposition, local communities have upped their storytelling through digital media and moving film. I show the counter-stories of the government agency “My 35” vision of mobility through added capacity against the local “Our Future 35” approach of access by re-stitching Austin’s communities. Still emerging, this case shows the power of storytelling from both quantitative and qualitative bases. This study shows how quantitative tools still result in stories—different approaches towards transport truths.

Citations

- Erlichman, H. J. (2006). *Camino del Norte*. Texas A&M University Press.
- Herrick, C. (2008). To the west and east of Interstate-35: obesity, philanthropic entrepreneurialism, and the delineation of risk in Austin, Texas. *Environment and Planning A*, 40(11), 2715–2733. <https://doi.org/10.1068/a4048>
- Melia, S. (2020). Learning critical realist research by example: political decision-making in transport. *Journal of Critical Realism*, 19(3), 285–303. <https://doi.org/10.1080/14767430.2020.1765643>
- Texas Department of Transportation. (2022). I-35 Capital Express Central. <https://my35capex.com/projects/i-35-capital-express-central/>
- Texas Historical Commission. (n.d.). The Development of Highways in Texas: A Historic Context of the Bankhead Highway and Other Historic Named Highways Introduction. Retrieved March 27, 2022, from <https://www.thc.texas.gov/public/upload/preserve/survey/highway/Section%20I.%20Statewide%20Historic%20Context.pdf>

Key Words: transportation, politics, history, obduracy, Realism

A DRIVING BURDEN: ANALYZING THE GENDER DIVISION OF CHAUFFEURING CHILDREN TO AND FROM SCHOOL

Abstract ID: 1130

Individual Paper Submission

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More than half of trips to and from school among K-12 students in the U.S. are taken in private vehicles, a share that has increased dramatically over the past half-century. Of these, the vast majority are driven by parents, usually women.

The gender gap in household responsibilities is clearly established in the literature; women typically perform twice the household duties as their male partners. And travel behaviors to and from school are understood, but not across different household structures.

In this study, I hypothesize that women bear the burden in school chauffeuring trips, and that job traits like employment status, work schedule, and telecommuting can help to explain how households make this decision among

male and female adults. I draw on the 2017 National Household Travel Survey to first investigate school trip travel mode choice across household structures. I then examine two-gender two-adult households to analyze the gender division of school chauffeuring trips. This culminates in a pair of binary logistic regressions that explain what factors are associated with one gender of adult driving over the other.

I find that children from two-gender two-adult households are more likely to travel between home and school in a private automobile (53% of trips) than children from other household types (44%). Of the former, female adults bear a substantially greater burden than male adults, serving as the chauffer on two-thirds of all school trips. Women are significantly more likely to drive if the trip occurs in the afternoon (odds ratio 1.37) as compared with the morning, if the child is female (OR 1.17), if only the male adult works (OR 2.49), if only the female adult (OR 1.82) or both adults (OR 1.37) telecommute, and if the male adult is in his 30s. Conversely, men are significantly more likely to drive if the trip occurs in the morning (OR 1.37), if only the male adult telecommutes (OR 2.02), if both adults have a flexible work schedule (OR 1.23), if the male adult has a bachelor's degree (OR 1.39), if both adults are immigrants (OR 1.45), and if the female adult is 50 years old or older (OR 1.27). Notably, trip distance, income, child age, and race are all not significant.

As the share of school trips conducted in private vehicles appears poised to continue increasing, planners and policymakers should turn their attention to how they might provide relief for adult women in the school trip chauffeuring burden. Policies to increase the provision of school bus service, incentivize and streamline the formation of carpools, and promote active transportation could all help to reduce the burden on adult women. Workplace policies to increase telecommuting among men with childcare responsibilities could also help to increase their participation in chauffeuring children to and from school.

Citations

- He, S. Y. (2013). Will you escort your child to school? The effect of spatial and temporal constraints of parental employment. *Applied Geography*, 42, 116–123.
- Smart, M. J., Brown, A., & Taylor, B. D. (2017). Sex or sexuality? Analyzing the division of labor and travel in gay, lesbian, and straight households. *Travel Behaviour and Society*, 6, 75–82.
- McDonald, N. C., Brown, A. L., Marchetti, L. M., & Pedroso, M. S. (2011). U.S. School Travel, 2009: An Assessment of Trends. *American Journal of Preventive Medicine*, 41(2), 146–151.
- Coltrane, S. (2000). Research on Household Labor: Modeling and Measuring the Social Embeddedness of Routine Family Work. *Journal of Marriage and Family*, 62(4), 1208–1233. <https://doi.org/10.1111/j.1741-3737.2000.01208.x>
- Giovanis, E. (2018). Are Women Happier When Their Spouse is Teleworker? *Journal of Happiness Studies*

Key Words: Gender, School travel, Chauffeuring, Escorting, Telecommuting

PREDICTORS OF TECHNOLOGY ADOPTION BY TRANSIT AGENCIES: THE CASE OF GENERAL TRANSIT FEED SPECIFICATION DATA

Abstract ID: 1157

Individual Paper Submission

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The development and widespread adoption of the general transit feed specification (GTFS) data format for transit route and schedule data has transformed the way travelers plan transit trips (McHugh 2013). In the fifteen years since this data standard was initially introduced, most –but not all–transit agencies have begun publishing their route and schedule information in this format. What might explain a transit agency's decision about whether and when to adopt a new data format and publish open data? Rogers' (2003) work on diffusion of innovation highlights several characteristics of individuals that correlate with being early adopters of new technologies, including social status, social mobility, wealth, and social connectedness. The applicability of these results to institutions is neither obvious nor well-established (Dedehayir et al. 2017). Little prior research has been done on the determinants of GTFS adoption. In one such study focusing on California, Frick et al. (2020) found that small transit agencies (reduced reporters) and rural transit agencies were less likely to have published GTFS feeds. Studies on the adoption of other technologies may be informative in identifying agency characteristics that are generally associated with openness to innovation. Iseki et al. (2007) have found that early adopters of smart cards for fare payment tended to be those with greater funding availability and those with established relationships with other transit agencies.

We identified 498 transit agencies in the United States that were providing scheduled transit service in 2006, when the GTFS data standard was initially published. Drawing on three sources of archived GTFS feeds (OpenMobilityData, GTFS Data Exchange, and transitland), we identified the earliest published GTFS feed for each agency, if any. We used the publication date of the earliest available feed for each agency to estimate the length of time it took for each

agency to adopt the GTFS data standard. We estimated a Cox proportional hazards model to determine how geographic and agency characteristics correlate with time between the availability of the GTFS data standard and its adoption by a given agency. We find that smaller agencies and those in closer geographic proximity to Portland (where the standard was initially developed) are more likely to have been early adopters of this technology.

The results of this analysis can inform efforts by state- and national-level agencies seeking to encourage innovation by identifying agencies most likely to be open to adopting new technology. It can also help local agencies identify peers who are likely to have experience with innovation and experimentation.

Citations

- Dedehayir, Ozgur, Roland J. Ortt, Carla Riverola, and Francesc Miralles. 2017. “Innovators and Early Adopters in the Diffusion of Innovations: A Literature Review.” *International Journal of Innovation Management* 21 (08): 1740010. <https://doi.org/10.1142/S1363919617400102>.
- Frick, Karen Trapenberg, Tanu Kumar, and Alison Post. 2020. “Background Paper: The General Transit Feed Specification (GTFS) Makes Trip-Planning Easier — Especially During a Pandemic — Yet Its Use by California Agencies Is Uneven.” University of California Institute of Transportation Studies. 10.7922/G2ZG6QJZ.
- Iseki, Hiroyuki, Allison Yoh, and Brian Taylor. 2007. “Are Smart Cards the Smart Way to Go?: Examining Their Adoption by U.S. Transit Agencies.” *Transportation Research Record: Journal of the Transportation Research Board* 1992 (January): 45–53. <https://doi.org/10.3141/1992-06>.
- McHugh, Bibiana. 2013. “Pioneering Open Data Standards: The GTFS Story.” In *Beyond Transparency: Open Data and the Future of Civic Innovation*, edited by Brett Goldstein and Lauren Dyson, 1st edition, 125–36. San Francisco: Code for America Press.
- Rogers, Everett M. 2003. *Diffusion of Innovations*. 5th edition. New York: Free Press.

Key Words: Technology adoption, Transit, Open data, Standards, Innovation diffusion

PLANNING FOR SUSTAINABLE TRAVEL IN IMMIGRANT COMMUNITIES: THE CASE OF TURKISH IMMIGRANTS IN VIENNA, AUSTRIA

Abstract ID: 1170

Individual Paper Submission

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Immigrants' travel behavior has increasingly received scholarly attention in North America and more recently in Europe as well. Overall, immigrants in North America tend to ride public transit more and also bicycle more compared to the native born, especially in the first ten years of their stay. In Europe, similar trends can be observed in regards to higher public transit usage of immigrants. However, in contrast to immigrants in North America, immigrants in Europe tend to bicycle less compared to non-immigrants.

Literature has shown that throughout various central and western European countries, Turkish immigrants' travel behavior deviates significantly from other immigrants' travel behavior. Turkish immigrants tend to drive much more in daily life compared to not only other immigrant groups but also non-immigrants. There are two counter-intuitive factors which make the research intriguing: 1. The majority of Turkish immigrants live in inner city, dense neighborhoods with extensive public transit offerings. 2. Turkish immigrants often have lower incomes compared to other immigrant groups in Europe (given the higher costs of buying and maintaining a car in most European countries, this is an interesting factor).

The case study city, Vienna, Austria has been ranked among the world's most livable cities by several different quality of life indices. Vienna's affordable and equitable health care system, extensive public transportation system and a large and equitable supply of public housing have been noted as the largest contributing factors to Vienna's high life quality. Several studies have identified public transport in Vienna as exemplary in Europe based on its geographic coverage, cost, and ridership levels.

This paper will use a mixed-methods approach to analyze and understand the motivations of Turkish immigrants to rely more on cars compared to other (immigrant) groups. First a large dataset provided by Statistik Austria is used to statistically capture the differences in travel mode usages among Turkish, non-Turkish and non-immigrant groups through regression analysis. The results of these analyses show that even after controlling for various socio-economic, demographic and land-use variables, Turkish immigrants odds of driving daily and regularly (several times a week) are about 3.5 times compared to other immigrant groups and to non-immigrants.

In addition to the quantitative analysis, qualitative interviews with Turkish immigrants and non-immigrants in

Vienna were/are being conducted. The interview revolves around the questions, what motivates immigrants to drive and what are the underlying causes for the dominance of driving and cars in the Turkish community in DC. The results of the interviews conducted so far displays that Turkish immigrants view the car as a symbol of freedom much more extensively compared to their non-immigrant counterparts and immigrants from other countries. The car was described by Turkish immigrants as the symbol of being a successful immigrant who achieved their socio economic dreams and goals.

This paper contributes to research in that it includes a qualitative perspective which helps understanding cultural and social aspects of mode choice, which cannot be solely and exclusively captured through quantitative statistical analysis. Cities with high immigrant populations planning for green and sustainable travel have to understand that the logic of taking various travel modes can differ between immigrant groups and between immigrants and non-immigrants. Cultural and social factors can play large roles in travel behavior, such as different attitudes towards cars, the role of gender in traveling and the importance of ethnic specific resources and and networks (Blumenberg 2009, Tal 2010).

Citations

- Blumenberg, E. (2009). Moving in and moving around: Immigrants, travel behavior, and implications for transport policy. *Transportation Letters*, 1(2).
- Tal, G., & Handy, S. (2010). Travel Behavior of Immigrants: An Analysis of the 2001 National Household Transportation Survey. *Transport Policy*, 17, 85-93.
- Harms, L. (2007). Mobilität ethnischer Minderheiten in den Stadtgebieten der Niederlande. In: *DfK – Deutsche Zeitschrift für Kommunalwissenschaften*, 46(2), 78–94.
- Welsch, J., Conrad, K., & Wittowsky, D. (2018). Exploring immigrants travel behaviour: Empirical findings from Offenbach am Main, Germany. *Transportation*, 45(3), 733–750.

Key Words: Travel Behavior, Immigrants, Equity, Mode Share

A LATENT CLASS ANALYSIS APPROACH TO UNDERSTAND RIDERS' ADOPTION OF ON-DEMAND MOBILITY SERVICES AS FIRST-MILE/LAST-MILE SOLUTIONS TO TRANSIT

Abstract ID: 1172

Individual Paper Submission

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App-based shared mobility (including ride-hailing, ride-splitting, car-sharing, bike-sharing, micro-transit, etc.) has quickly emerged in recent years and is believed to offer great convenience and flexibility to travelers. One potential direction that app-based shared mobility can contribute to a more efficient and sustainable urban transportation in the United States is to complement traditional public transit, which has long been struggling with providing services at an adequate level of frequency, coverage, and service quality (Manville, Taylor, and Blumenberg 2018). Transit agencies in the United States have thus started to explore ways to incentivize on-demand shared mobility services to supplement existing fixed-route transit in the forms of first-mile/last-mile solutions, guaranteed ride home, or even replacements for low-efficiency transit services. And many of these pilots received funding support from the Federal Department of Transportation (Rodriguez 2020).

However, the exact impacts of incentivizing on-demand shared mobility on rider's travel behavior remain largely unknown. Recent evidence suggested incentivizing app-based services may benefit primarily high-income commuters instead of low-income ones (Shen, Wang, and Gifford 2021). Given the nature of transit as a public mobility service and the strong equity emphasis of many pilots (Gifford, Chazanow, and Hallenbeck 2021; Miller et al. 2021; Martin et al. 2021), policy-makers need to know how riders of different socio-economic statuses adopt the pilot services and whether on-demand services can fill in the mobility gaps for those who need it most. This study aims to fill the research gaps as one of the first studies examining transit agencies' on-demand mobility pilots using rigorous analytical methods. Specifically, the study aims to answer the following questions:

- 1) Are there distinct patterns in the adoption and usage of on-demand mobility services among riders?
- 2) Can these distinct differences be explained by riders' socio-demographic statuses and built environment characteristics?
- 3) Learning from the answers to the above two questions, what should transit agencies consider when designing and implementing similar mobility pilots in the future?

We use Via to Transit, a pilot launched in the Seattle region in the U.S. as a case study. Via to Transit allows people

located within specified service areas to request rides to/from one of five transit hubs using on-demand Via services, and only pay for the costs of standard transit fares. It generated a rich set of trip data (N = 229,133) and rider survey data (N = 1,273). This study employs latent class analysis, a statistical modeling technique that can systematically identify qualitatively different subgroups that share certain commonalities within a population. The latent class analysis answers the first question by grouping Via rider survey respondents into heterogeneous classes that are not easily identifiable from the data. Then it addresses the second question by modeling the latent class membership with various socio-demographic and built environment characteristics. Based on these results, we derive policy recommendations for transit agencies to better tailor future mobility policy innovations to specific rider groups, which addresses the third research question.

Citations

- Gifford, Casey, Abby Chazanow, and Mark E Hallenbeck. 2021. "Mobility on Demand Sandbox Demonstration: Puget Sound First/Last Mile Partnership with Via, Final Report." Federal Transit Administration, U.S. Department of Transportation. Washington, D.C. doi:10.21949/1520669.
- Manville, Michael, Brian Taylor, and Evelyn Blumenberg. 2018. "Transit in the 2000s: Where Does It Stand and Where Is It Headed?" *Journal of Public Transportation* 21 (1): 104–18. doi:10.5038/2375-0901.21.1.11.
- Martin, Elliot, Ziad Yassine, Adam Cohen, and Susan Shaheen. 2021. "Mobility on Demand (MOD) Sandbox Demonstration: City of Palo Alto and Bay Area Fair Value Commuting Evaluation Report." Federal Transit Administration, U.S. Department of Transportation. Washington, D.C. doi:10.21949/1520692.
- Rodriguez, Edwin Adilson. 2020. "FTA Annual Report on Public Transportation Innovation Research Projects for FY 2019." Federal Transit Administration. <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/115886/fta-annual-report-public-transportation-innovation-research-projects-fy-2017-fta-report-no-0120.pdf><https://rosap.ntl.bts.gov/view/dot/39036><https://trid.trb.org/view/>.
- Shen, Qing, Yiyuan Wang, and Casey Gifford. 2021. "Exploring Partnership between Transit Agency and Shared Mobility Company: An Incentive Program for App-Based Carpooling." *Transportation*. doi:10.1007/s11116-020-10140-w.

Key Words: shared mobility, public-private partnership, first-mile/last-mile solutions, transit agency, latent class analysis

THE ROLE OF DISSONANCE IN TRAVEL BEHAVIOR OF TRANSIT-ORIENTED DEVELOPMENT (TOD) RESIDENTS

Abstract ID: 1173

Individual Paper Submission

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A growing body of travel behavior research has explored the role of attitudes as an explanatory variable, sometimes as a control for self-selection. Most studies find that attitudes are significant predictors of mode choice. What has not been explored as much is dissonance -- how well people's attitudes or preferences match their housing locations as well as travel behavior. De Vos and Singleton (2020) review the concept of cognitive dissonance applied to travel behavior. They explain that dissonance between attitudes and behavior leads to discomfort, which can then lead to a person changing their behavior and/or their attitudes. A few studies have explored dissonance among residents of transit-oriented developments. A study in Brisbane, Australia found that 53% of TOD residents were travel consonant, meaning they have positive attitudes towards transit. About one-third of those commuted by transit, a rate about double that of TOD residents with negative attitudes (dissonants) (Kamrussaman et al, 2015). Cao (2015) found that urban residents with positive transit attitudes (consonants) were most likely to commute by transit, followed by pro-transit suburban residents (dissonants), urban residents with negative transit attitudes (dissonants), and suburban residents with negative transit attitudes (consonants).

The objective of this paper is to understand the role dissonance (and consonance) play in the travel behavior of TOD residents. The data are from surveys of 1,543 residents living in 24 different TODs in the Portland, OR region. Most of the TODs are located near light rail or streetcar stations, though some are along high frequency bus lines. The paper first develops different measures of dissonance using travel attitudes (pro-transit or not), importance of transit access in home location choice, current transit use, and transit use at previous residence. Nearly half (48%) of the residents are consonant with positive transit attitudes and a housing preference to be near transit and 22% are consonant with negative or neutral transit attitudes and a low preference to live near transit. These groups were the most and least likely, respectively, to use transit for either commuting or other purposes. The remaining 30% are dissonant. Of those that had negative/neutral transit attitudes but preferred to live near transit (22% of the sample), 19% said they were using transit a lot more than their previous residence, through another 17% said they were using transit a lot less now. The paper uses separate binary and multinomial logit models to explain factors contributing to dissonance and how dissonance and other factors predict travel behavior. Control variables include demographics, work location

characteristics (proximity to transit and parking costs), built environment characteristics (land use diversity, street connectivity), proximity to bus and rail transit, and regional accessibility. The findings reveal that dissonants with negative transit attitudes or weak transit access preferences are less likely to use transit, but that parking pricing at work can counteract that relationship for commuting behavior.

Citations

- Cao, X. J. (2015). Heterogeneous effects of neighborhood type on commute mode choice: an exploration of residential dissonance in the Twin Cities. *Journal of transport geography*, 48, 188-196.
- Kamruzzaman, M., Baker, D., Washington, S., & Turrell, G. (2016). Determinants of residential dissonance: implications for transit-oriented development in Brisbane. *International journal of sustainable transportation*, 10(10), 960-974.
- De Vos, J., & Singleton, P. A. (2020). Travel and cognitive dissonance. *Transportation Research Part A: Policy and Practice*, 138, 525-536.

Key Words: Transit-oriented Development, attitudes, dissonance, travel behavior

INFORMAL SHARING OF AUTOMOBILES BETWEEN AND WITHIN HOUSEHOLDS

Abstract ID: 1174

Individual Paper Submission

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Sharing is a fundamental human behavior. Social scientists from fields as diverse as economics and anthropology recognize that humans have long collaborated to share resources and that these practices have great social, cultural, and economic importance. In the U.S., people frequently drive alone in private vehicles, and this imposes high internal costs on the individual (in terms of out-of-pocket costs and risk of injury) and on society (via air pollution, congestion, and collision rates) (Becker et al., 2012). As a result, many transportation planners have sought to reduce single-occupancy vehicle (SOV) use – via shared travel or otherwise – and to thus address environmental and economic challenges (Cohen & Kietzmann, 2014). Yet in most of the U.S., the reach of public transit systems is limited. Further, survey data indicate that a sizeable proportion of U.S. residents who do not own cars take many of their trips in automobiles anyway (Blumenberg & Thomas, 2014).

In this paper, I analyze the practice of informal automobile sharing and its role in increasing mobility for people experiencing transportation disadvantage. I use statistical methods to model National Household Travel Survey (NHTS) data collected in 2017, modeling mode choice as an expression of rational choice and thus a proxy for the utility it offers travelers. In my definition of informal auto sharing, I include three categories: (1) automobile borrowing, (2) carpooling with individuals outside of the respondents' household, and (3) carpooling with other household members. While all these behaviors involve the shared use of a private vehicle, they offer distinct advantages over other forms of mobility. I also test for associations between personal/household socioeconomic factors and the built environment context and automobile sharing.

In measuring sharing behaviors, I also test for differences between disadvantaged and non-disadvantaged travelers. Preliminary analyses of the NHTS data suggest that automobile sharing behaviors do differ by disadvantage status. For example, in terms of trips taken by auto-less people, those taken by people living in households with incomes below \$25,000 are 1.5 times as likely to be taken via carpool, as compared with non-low-income auto-less people. I also analyze the association between trip purpose and sharing outcomes – specifically examining relationships between automobile sharing and travel for non-commute activities, including by transportation disadvantage. Findings from the sharing literature also suggest that sharing behaviors are specific to social situations (Price, 1975), so I test whether this holds true in the travel context. As one example, I identify differences in the purposes of trips served by carpooling with household members versus non-household members.

This research fills an important gap in knowledge about informal shared vehicle travel behavior. Informal automobile-sharing likely serves different needs than the more-often-studied formal shared mobility options. These differences may be especially critical for disadvantaged travelers – including those who do not own automobiles, cannot drive, and/or reside in rural environments. Understanding how informal sharing benefits disadvantaged travelers can enhance policies to address inequity in transportation and to enhance traveler mobility.

Citations

- Becker, I. U. J., Becker, I. T., & Gerlach, D.-W.-I. J. (2012). The true costs of automobility: External costs of cars overview on existing estimates in eu-27.

- Blumenberg, E., & Thomas, T. (2014). Travel behavior of the poor after welfare reform. *Transportation Research Record*, 2452(1), 53–61.
- Cohen, B., & Kietzmann, J. (2014). Ride on! Mobility business models for the sharing economy. *Organization & Environment*, 27(3), 279–96.2
- Price, J. A. (1975). Sharing: The integration of intimate economies. *Anthropologica*, 17(1), 3–27. <https://doi.org/25604933>

Key Words: shared mobility, transportation equity, travel behavior, automobile access

AN ALTERNATIVE EXPLANATION FOR SHORT COMMUTES AMONG LOW-WAGE WORKERS

Abstract ID: 1193

Individual Paper Submission

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Studies have consistently shown that low-wage workers have, on average, shorter commutes (Blumenberg & King, 2019). This fits the neoclassical urban economists' framework that low-wage workers choose shorter commutes because longer commutes are too costly (Glaeser et al, 2008). In this paper, I propose an alternative, structural explanation for shorter commutes among low-wage workers. I hypothesize that commute lengths are associated with the spatial distribution of jobs, which varies by industry and wages. That is, low-wage jobs, including those in retail and personal care services are spatially dispersed throughout cities and therefore, low-wage workers are more likely to have short commutes. On the other hand, higher-wage jobs, particularly those in the finance, insurance, and real estate (FIRE) industries, benefit from agglomeration and are more likely to be spatially clustered (Sassen, 2005). Thus, higher-wage workers are more likely to have longer commutes.

I estimate commute times for individuals living in the Los Angeles Urbanized Area using American Community Survey (ACS) 1-year data in multivariate regression models. The main explanatory variable is a continuous measure of spatial deconcentration of the industry that the individual is employed in. Control variables include wages, gender, household composition, and race or ethnicity. I expect the measure of spatial deconcentration to have a larger coefficient than wages, which means that spatial concentration of employment is a greater predictor of commute patterns than wages. In addition, while labor markets are segmented socially and spatially (i.e., low-wage jobs are spatially dispersed and higher-wage jobs are spatially concentrated), some low-wage jobs are also spatially concentrated, e.g., manufacturing, and workers in those sectors are predicted to have longer commutes, despite their lower wages.

As an initial analysis, I used publicly available LEHD data at the census block level to calculate measures of employment deconcentration by 20 industry categories for the Los Angeles Urbanized Area (Hipp et al, 2020). As expected, accommodation and food services, other services (except public administration), and retail trade – jobs associated with low-wages and low employment security -- are very deconcentrated. Public administration, utilities, and information are highly concentrated and associated with higher wages or high employment security.

Then, I compared the spatial deconcentration measure with the average commute times of workers in each of the 20 industries. I found a generally positive relationship between employment concentration and average commute time. In other words, workers employed in spatially concentrated industries are more likely to have longer commutes than workers employed in spatially dispersed industries.

Low-wage workers' short commutes to spatially dispersed jobs have several implications for planning and policy. First, efforts to reduce commute lengths and greenhouse gas emissions, including increasing jobs-housing balance, must consider these policies' potentially disparate impacts on workers by wages, particularly if low-wage workers already have shorter commutes and greater jobs-housing balance (Blumenberg & King 2021). Second, public transportation is often prioritized in times and spaces where ridership is concentrated, or 9-5 schedules to central cities, which benefit higher-wage workers (Hu & Schneider, 2017). However, a more equitable transportation policy and planning needs to take into account the spatially dispersed employment patterns of low-wage workers, who are more dependent on public transportation, as well as their part-time or shift schedules, which are outside the 9-5 peak hours.

Citations

- Blumenberg, E., & King, H. (2021). Jobs–Housing Balance Re-Re-Visited. *Journal of the American Planning Association*, 1–13. <https://doi.org/10.1080/01944363.2021.1880961>
- Blumenberg, E., & King, H. (2019). Low-Income Workers, Residential Location, and the Changing Commute in the United States. *Built Environment*, 45(4), 563–581. <https://doi.org/10.2148/benv.45.4.563>
- Glaeser, E. L., Kahn, M. E., & Rappaport, J. (2008). Why do the poor live in cities? The role of public transportation. *Journal of Urban Economics*, 63(1), 1–24. <https://doi.org/10.1016/j.jue.2006.12.004>

- Hipp, J. R., Kim, J. H., & Forthun, B. (2021). Proposing new measures of employment deconcentration and spatial dispersion across metropolitan areas in the US. *Papers in Regional Science*, 100(3), 815–841. <https://doi.org/10.1111/pirs.12593>
- Hu, L., & Schneider, R. J. (2017). Different ways to get to the same workplace: How does workplace location relate to commuting by different income groups? *Transport Policy*, 59, 106–115. <https://doi.org/10.1016/j.tranpol.2017.07.009>

Key Words: Commuting, Labor Markets, Public Transportation, Urban Inequality, Jobs-Housing Balance

EXPLORING NONLINEAR BUILT ENVIRONMENT EFFECTS ON DRIVING WITH A MIXED-METHODS APPROACH

Abstract ID: 1209

Individual Paper Submission

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Auto dependence has caused many problems for society, such as traffic congestion, air pollution, and obesity. To address these issues, policymakers have been interested in using built environment policies to rein in driving as many studies have shown the connections between built environment attributes and auto use (Ewing & Cervero, 2010). While most of these studies assume that the relationships between built environment attributes and driving are linear or generalized linear, some scholars stated that these relationships should be characterized as nonlinear and threshold ones (Boarnet, 2017; Van Wee & Handy, 2016). In the recent five years, a growing number of studies have started to apply machine learning approaches to examine the nonlinear and threshold relationships between built environment attributes and driving (Ding et al., 2018; Wang & Wang, 2021). These studies, however, lack causal explanations of the nonlinear relationships.

Using a mixed-methods approach to analyze the travel survey data from a small city in Norway, Stavanger, this study examined the causal explanations of the nonlinear and threshold influence of built environment attributes on people's driving-related travel behavior, including weekly driving distance, car commuting frequency, and car ownership. The travel survey data from Stavanger contain both questionnaire surveys and interviews. With the questionnaire survey data, we applied the quantitative machine learning approach to estimate the nonlinear relationships between built environment attributes and driving-related travel behavior. With the interview data, we applied the qualitative analysis method to extract people's transport rationales about their activity location and mode choices. We, then, used these transport rationales to explain the causal mechanism of the nonlinear and threshold relationships generated by the quantitative approach.

Our results showed that transport rationales for choosing activity locations and travel modes, along with configurations of the jobs and other facilities, provide causal explanations for the nonlinear and threshold effects of built environment attributes on people's driving-related behavior. In addition, most of the built environment attributes (e.g., distance to local and second-order centers and density variables) in Stavanger and Oslo, a large city, have similar nonlinear effects on driving-related behavior. Therefore, built environment policies that work for Oslo, such as compact and concentrated development, may also work for Stavanger. Planners should prioritize these planning policies in the areas closer to the activity centers in Stavanger.

This study contributes twofold to the literature. First, to our best knowledge, this is the first study that uses both qualitative interview analysis and quantitative machine learning approach to examine the nonlinear influence of the built environment on travel behavior. Second, the results confirmed that the nonlinear built environment effects on driving are similar in both small- and large-city contexts and provided great insights into planning policy applications.

Citations

- Boarnet, M. (2017). Land use, travel behavior, and disaggregate travel data. In G. Giuliano & S. Hanson (Eds.), *The geography of urban transportation* (4th ed.). The Guilford Press.
- Ding, C., Cao, X. J., & Næss, P. (2018). Applying gradient boosting decision trees to examine non-linear effects of the built environment on driving distance in Oslo. *Transportation Research Part A: Policy and Practice*, 110, 107–117. <https://doi.org/10.1016/j.tra.2018.02.009>
- Ewing, R., & Cervero, R. (2010). Travel and the Built Environment. *Journal of the American Planning Association*, 76(3), 265–294. <https://doi.org/10.1080/01944361003766766>
- Van Wee, B., & Handy, S. (2016). Key research themes on urban space, scale, and sustainable urban mobility. *International Journal of Sustainable Transportation*, 10(1), 18–24. <https://doi.org/10.1080/15568318.2013.820998>

- Wang, K., & Wang, X. (2021). Generational differences in automobility: Comparing America's Millennials and Gen Xers using gradient boosting decision trees. *Cities*, 114. <https://doi.org/10.1016/j.cities.2021.103204>

Key Words: land use, machine learning, travel behavior, mixed-methods approach, qualitative analysis

EXPOSING FREEWAY INEQUALITIES IN PASADENA AND PACOIMA

Abstract ID: 1210

Individual Paper Submission

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Central theme

Often celebrated as extraordinary accomplishments of modernity and transportation planning, US freeways have come under scrutiny during our era of racial reckoning. When freeways were superimposed on cities, policy makers overlooked their effects on neighborhoods, businesses, and residents. Freeway burden was not equally distributed throughout metropolitan areas as predominantly minority neighborhoods had to bear a disproportionate cost.

As the epitome of car culture, Southern California has built a significant amount of freeways, outpacing other regions in the country. In this study, we focus on the minority neighborhoods of Pasadena and Pacoima, which have experienced the superimposition of the Foothill Freeway (Pasadena) and the Foothill, Golden State, and Simi freeways (Pacoima). We ask the following:

Research Questions:

What are the short and long-term impacts of these freeways superimposed on these two neighborhoods? How inclusive was the planning process? Why were these routes chosen over others?

Research Approach:

We employed archival research and interviews to link initial conditions to outcomes. For each case study, we drew from primary and secondary sources. We searched for newspaper articles in archival databases (Proquest, California Digital Newspaper Collection, Newspapers.com, Archive.org). Using particular keywords for the timeframe 1950-1980, we identified approximately 140 relevant newspaper articles published in ten different local newspapers. We complemented our archival research with primary sources--planning documents, professional studies, maps and correspondence associated with the Pasadena General Plan of 1962, and Community Development Plans for Arleta-Pacoima (1973-74). Census data helped us analyze changes in the neighborhoods' demographic composition over time. For each case study, we also consulted with local historians, librarians, staff from local nonprofits, and also interviewed a dozen residents who had experienced the construction of the freeways firsthand.

Major Findings:

Our review of archival documents and oral histories offered a glimpse into thriving minority neighborhoods in Pasadena and Pacoima that were decimated by freeway infrastructure, with their residents disenfranchised from planning processes. Planning and transportation authorities deliberately routed the freeways through these neighborhoods, ignoring alternative routes through adjacent areas inhabited by wealthier, primarily white residents. The particular routes chosen displaced more households than the alternative routes would have. Routing decisions were shaped by prominent voices from wealthier, white communities, but also by a deafening silence from minority residents, who did not have a seat at the table. While massive investment in these freeway projects arguably benefited the entire region, their construction placed disproportionate burdens on the residents of these minority neighborhoods. Demolition and displacement were the visible and immediate effects of the freeways. Other long-term effects – toxic pollution, noise, economic decline and stigmatization– affected those residents whose homes or stores might have been spared. Several decades later, these traces of environmental degradation and social inequity persist in both neighborhoods till today.

Relevance and Implications

As policy makers and municipal agencies confront a history of transportation injustice, civic movements are demanding that cities tear down existing freeways. Planners should address public concerns about transportation equity and restorative justice, assessing the kinds of impacts and disparities that freeways still have on minority neighborhoods and communities, and finding ways to respond to them.

Citations

- Avila, E. (2014). *The Folklore of the Freeway: Race and Revolt in the Modernist City* (1st edition). Univ Of Minnesota Press.
- Bullard, R. D., Johnson, G. S., & Torres, A. O. (2004). *Highway Robbery: Transportation Racism & New Routes to Equity*. South End Press.
- Mohl, R. A. (2012). The Expressway Teardown Movement in American Cities: Rethinking Postwar Highway Policy in the Post-Interstate Era. *Journal of Planning History*, 11(1), 89–103.
<https://doi.org/10.1177/1538513211426028>
- Pulido, L. (2000). Rethinking Environmental Racism: White Privilege and Urban Development in Southern California. *Annals of the Association of American Geographers*, 90(1), 12–40.
- Karner, A., Golub, A., Martens, K., & Robinson, G. (2017). Transportation and environmental justice: History and emerging practice. In *The Routledge Handbook of Environmental Justice*. Routledge.

Key Words: Freeways, Minority Communities, Transportation Justice, Pasadena, Pacoima

INFLUENCE OF NEIGHBORHOOD WALKABILITY ON OLDER ADULTS' WALKING TRIPS: DOES INCOME MATTER?

Abstract ID: 1213

Individual Paper Submission

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Aging population is a global phenomenon that is on the rise. As people get older, their declining physical conditions and worsening socio-economic characteristics make their willingness to travel decrease, and this results in reduced activity participation (Hjorthol et al., 2010; Yuan et al., 2019; Cheng et al., 2019). Many empirical studies argue that older adults make fewer trips and travel shorter distances than younger adults (Böcker et al., 2017; Yuan et al., 2019). Although the U.S. CDC recommends having at least 30 minutes of physical activity on five or more days per week (CDC, 2020), it is difficult for older adults to adopt vigorous activity programs, such as gym-based exercises (Wang and Lee, 2010). Several studies find that walking is preferred and recommended among older adults as a moderate and habitual physical activity (Negal et al., 2008; Weng et al., 2019).

Built environment plays a crucial role in shaping travel patterns, including individuals' walking outcomes (Ewing and Cervero, 2010; Cao et al., 2010; Cheng et al., 2019). Older adults generally spend more time home and are more susceptible to environmental constraints (Wang and Lee, 2010). Therefore, neighborhood-level built environment characteristics at residential locations are expected to have a larger influence on older adults' walking decisions as compared to their counterparts (Zhang et al., 2014; Böcker et al., 2017). However, most empirical studies on walking behavior have focused on the general population, even though older adults account for a growing share of the U.S. population (Cao et al., 2010). In this context, this study is concerned with older adults' walking outcomes.

Existing studies have shown that the influence of neighborhood-level built environment on walking may vary across different socio-demographic and economic groups (Ewing and Cervero, 2001; Manaugh and El-Geneidy, 2011; Chia et al., 2016; Cheng et al., 2019). Older adults are more likely to face decreased incomes due to retirement, which many constrain their mobility (Giesel and Köhler, 2015; Srinivasan et al., 2020). However, there are not many empirical studies investigating older adults' walking trips considering different income levels. Within this consideration, this study explores how neighborhood walkability effects older adults' walking trips, considering different household income levels.

This study mainly utilizes the detailed individual-level data from the 2017 National Household Travel Survey-California Add-on (2017 NHTS-CA). We first identify neighborhood walkability based on neighborhood-built environment attributes and access to urban amenities using K-means clustering algorithm. Neighborhoods are classified into three groups based on their walkability: low, medium and highly walkable neighborhoods. We then employ negative binomial regression models to examine whether these neighborhood typologies are associated with older adults' walking trip frequencies across different income levels.

Key findings from our empirical analyses are as follows. First, older adults with physical disabilities tend to have fewer walk trips as compared to those without disabilities. Second, subjective health conditions are critical for older adults' walking trips. Third, older adults in low-income household tend to have more walk trips than those in high-income households. Fourth, after controlling for various other factors, older adults living in more walkable neighborhoods are more likely to have outdoor walking than others. Fifth, walkable neighborhoods are more likely to be associated with older adults' walking trips in wealthier households. The findings of this study suggest enhancing neighborhood walkability is a promising strategy for promoting outdoor walking trips for older adults.

Citations

- Böcker, L., van Amen, P., & Helbich, M. (2017). Elderly travel frequencies and transport mode choices in Greater Rotterdam, the Netherlands. *Transportation*, 44(4), 831–852.
- Cheng, L., De Vos, J., Shi, K., Yang, M., Chen, X., & Witlox, F. (2019). Do residential location effects on travel behavior differ between the elderly and younger adults? *Transportation Research Part D: Transport and Environment*, 73, 367–380.
- Fonseca, F., Ribeiro, P. J. G., Conticelli, E., Jabbari, M., Papageorgiou, G., Tondelli, S., & Ramos, R. A. R. (2021). Built environment attributes and their influence on walkability. *International Journal of Sustainable Transportation*, 1–40.
- Hjorthol, R. J., Levin, L., & Sirén, A. (2010). Mobility in different generations of older persons: The development of daily travel in different cohorts in Denmark, Norway and Sweden. *Journal of Transport Geography*, 18(5), 624–633.
- Wang, Z., & Lee, C. (2010). Site and neighborhood environments for walking among older adults. *Health & Place*, 16(6), 1268–1279.

Key Words: walking trips, older adults, neighborhood walkability, K-means clustering, negative binomial regression models

REPORTS FROM THE BATTLE FOR THE CURB: USING SOCIAL MEDIA TO UNDERSTAND CHALLENGES FACED BY URBAN DELIVERY DRIVERS

Abstract ID: 1227

Individual Paper Submission

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Freight delivery vehicles often find themselves in competition with other road users for curb space. When space is not available adjacent the delivery destination, drivers must resort to alternatives, e.g., waiting for a space to become available, cruising the area to find a spot further from the delivery point, or parking illegally. These issues are of interest to planners and logistics providers alike, primarily for their undesirable impacts on safety, congestion, and shipping costs.

The urgency of these issues has accelerated in recent years, largely due to the emergence and continued growth of rapid-delivery online retail (e.g., Amazon) as well as the onset of the COVID-19 pandemic, which intensified the adoption of such services. Between 2019 and 2020, as the pandemic encouraged people to stay at home and have goods delivered, the volume of small parcels delivered in the United States rose from around 14.7 billion to 20.2 billion. This continuing and rapid acceleration in parcel delivery volume promises to add stress to an already competitive battle for the curb.

While freight vehicles increasingly are forced to park illegally in space-constrained areas in order to make deliveries, communities have often lagged behind in planning for solutions. Moreover, as the volume of last mile deliveries continues to expand, so has the volume of freight-related crashes resulting in injuries or fatalities, outpacing the rate of such incidents in non-freight-related traffic. From the perspective of the logistics industry, these issues often represent inefficiencies that interfere with the distribution of goods and increase costs.

Curb management policies and freight providers' practices alike will need to adapt in the face of this changing landscape, and their success will be contingent on understanding how these problems are unfolding at the curb. While several studies have begun to quantify the problems presented by curb conflicts surrounding delivery vehicles, especially unauthorized parking behavior, fewer have specifically examined these issues through the lens of driver behavior. With notable exceptions, driver viewpoints are often missing from the literature, but are critical to understand since they are the ones operating where planning policies "hit the road". Moreover, to our knowledge, few studies have examined small parcel drivers specifically. To gain on-the-ground insight into the battle for the curb, what issues drivers face, and the circumstances that inform their parking choices and related behaviors, we use data from the online social content sharing platform Reddit to examine driver perceptions and behavior.

Specifically, we pose the following research question(s):

1. What are some key challenges delivery drivers encounter when delivering in urban areas?
2. What strategies do drivers employ when parking their vehicles to make deliveries?

3. What reasons do drivers cite for engaging in unauthorized or questionable parking practices?

By using content analysis techniques to analyze online conversations between drivers, we find that parking is among the largest challenges drivers face while delivering in urban areas, largely because parking difficulties extend the time required to complete many routes. While drivers in our sample prefer to park in authorized spaces, employing various strategies to do so, they generally accept the practice of unauthorized parking to complete their routes. Often, they do so due to lack of available parking, but also for safety and/or expedience. Moreover, drivers reported that parking enforcement personnel rarely issued tickets or other reprimands, acknowledging that for delivery vehicles, unauthorized parking is often necessary. Finally, drivers also described concerns surrounding interactions with other road users while making deliveries, especially in terms of conflict and safety.

Citations

- Conway, A. J., Thuillier, O., Dornhelm, E., & Lownes, N. E. (2013). Commercial Vehicle-Bicycle Conflicts: A Growing Urban Challenge (No. 13–4299). Article 13–4299. Transportation Research Board 92nd Annual Meeting/Transportation Research Board. <https://trid.trb.org/view/1242509>
- Dalla Chiara, G., Krutein, K. F., Ranjbari, A., & Goodchild, A. (2021). Understanding Urban Commercial Vehicle Driver Behaviors and Decision Making. Transportation Research Record: Journal of the Transportation Research Board, 036119812110035. <https://doi.org/10.1177/03611981211003575>
- Kawamura, K., Sriraj, P. S., Surat, H. R., & Menninger, M. (2014). Analysis of Factors that Affect the Frequency of Truck Parking Violations in Urban Areas. Transportation Research Record, 2411(1), 20–26. <https://doi.org/10.3141/2411-03>
- McDonald, N., & Yuan, Q. (2021). Freight Loading Space Provision: Evidence from the US. Journal of Urban Planning and Development, 147(2), 04021015. [https://doi.org/10.1061/\(ASCE\)UP.1943-5444.0000688](https://doi.org/10.1061/(ASCE)UP.1943-5444.0000688)
- Ranieri, L., Digiesi, S., Silvestri, B., & Roccotelli, M. (2018). A Review of Last Mile Logistics Innovations in an Externalities Cost Reduction Vision. Sustainability, 10(3), 782. <https://doi.org/10.3390/su10030782>

Key Words: urban freight, last mile, Reddit, curb, parcel

UNDERSTANDING INTENTIONS TO USE ON-DEMAND AUTOMATED VEHICLES IN CANADIAN CENSUS METROPOLITAN AREAS

Abstract ID: 1235

Individual Paper Submission

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The combination of on-demand mobility tools and automated vehicles (AVs) as an emerging travel mode, could have abundant short-term and long-term implications on built environments and travel behavior. Understanding factors affecting people's intent towards using and paying for on-demand AVs, which contain shared automated vehicles (SAVs) and pooled automated vehicles (PooledAVs), can help predict their possible implications, as well as explore the characteristics of prospective consumers of such mobility tools. There are several studies, where the acceptability and acceptance of AVs have been assessed within various geographic context. These studies have applied human behavior and technology acceptance theories to explore factors affecting intention to use AVs, where the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), the Unified Theory of Acceptance and Use of Technology (UTAUT I & UTAUT II), Theory of Reasoned Action (TRA), and Diffusion of Innovation (DoI) theory were found to be the most frequently adopted theories (Rahman et al., 2017; Nordhoff et al., 2018). Although many studies have attempted to explain the variance of behavioral intent to use on-demand AVs through either affective or instrumental motivations employed within these theories, a consensus model has not yet been obtained and the significant factors explaining the behavioral intent are yet inconsistent and conflicting throughout the literature (Haboucha et al., 2017; Krueger et al., 2016; Sweet & Laidlaw, 2020).

Better understanding factors influencing behavioral intent to use on-demand AVs is critical for planning practice to shape AV technologies towards a socially desirable future. Towards that end, this study investigates the influence of affective motivations on intention to use SAVs and PooledAVs, based on an extended TPB model. Alongside the employed attitudinal factors (attribute towards a behavior, subjective norms, perceived behavioral control, trust, and eco-friendliness), the impact of sociodemographic characteristics, current travel behavior, and geographic context are highlighted. This study uses data from a national survey (N= 5,002) administered in October and November 2021 across six Canadian Census Metropolitan Areas (CMAs): Toronto, Vancouver, Ottawa, Montreal, Calgary, and Hamilton.

Through descriptive and inferential statistics, and a multivariate ordered model, the impacts of affective motivations,

travel behavior, sociodemographic characteristic, and geographic context are investigated. Results indicate that geographic context plays an important role in explaining the future market of on-demand AVs, where people living in congested areas such as downtown Toronto are more likely to use such mobility tools. Affective motivations such as attributes towards a behavior, eco-friendliness, and trust are highly significant, while perceived behavioral control and subjective norms are found to be insignificant in explaining the variance of intent to use on-demand AVs. Sociodemographic characteristics matter in explaining the variance of behavioral intention to use on-demand AVs, where young, full-time male employed, and highly educated people are more likely to use on-demand AVs on a regular basis. Respondents' current travel behavior characteristics are also important. Individuals using ride-hailing services and public transit currently are more inclined to use SAVs and PooledAVs, while people who regularly commute by a privately owned vehicle are more interested in SAVs rather than PooledAVs. The findings of this study could help researchers and manufacturers predict the future market of an unprecedented mobility tool. Additionally, the results of this study provide insight into the pathways by which policy makers can manage the advent of on-demand AVs in transportation policies.

Citations

- Haboucha, C. J., Ishaq, R., & Shiftan, Y. (2017). User preferences regarding autonomous vehicles. *Transportation Research Part C: Emerging Technologies*, 78, 37–49. <https://doi.org/10.1016/j.trc.2017.01.010>
- Krueger, R., Rashidi, T. H., & Rose, J. M. (2016). Preferences for shared autonomous vehicles. *Transportation Research Part C: Emerging Technologies*, 69, 343–355. <https://doi.org/10.1016/j.trc.2016.06.015>
- Nordhoff, S., De Winter, J., Kyriakidis, M., Van Arem, B., & Happee, R. (2018). Acceptance of driverless vehicles: Results from a large cross-national questionnaire study. *Journal of Advanced Transportation*, 2018.
- Rahman, M. M., Lesch, M. F., Horrey, W. J., & Strawderman, L. (2017). Assessing the utility of TAM, TPB, and UTAUT for advanced driver assistance systems. *Accident Analysis and Prevention*, 108(September), 361–373. <https://doi.org/10.1016/j.aap.2017.09.011>
- Sweet, M. N., & Laidlaw, K. (2020). No longer in the driver's seat: How do affective motivations impact consumer interest in automated vehicles? *Transportation*, 47(5), 2601–2634. <https://doi.org/10.1007/s11116-019-10035-5>

Key Words: On-demand Automated Vehicles, Theory of Planned Behavior, Behavioral Intention to Use, Affective Motivations, Geographic Context

LOCAL GOVERNMENTS' DEMAND FOR VMT AND TRAVEL DATA

Abstract ID: 1236

Individual Paper Submission

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Several studies emphasized the coordination of land use and transportation planning across levels of governments and examined the effectiveness of such coordination on VMT reduction (Lovejoy et al., 2013; Salon et al., 2012; Salon, 2014). In the case of California, any government agencies are mandated to replace level of service (LOS) with vehicle miles traveled (VMT) as the basis for mitigating transportation impacts. Given these circumstances, local governments now have a greater need of local VMT data than ever before to make sure their land use decisions would not hinder regional planning efforts to meet VMT/GHG emission reduction goals. However, the institutional structures and roles of MPOs and local governments become a barrier to the coordination. While local governments tend to rely on MPOs to access VMT data, they confront the challenge of acquiring appropriate transportation data that quantifies VMT in smaller geographies. With advances in technologies with big data and artificial intelligence (AI), new sources of travel data are rapidly emerging. Recent studies looked at ways to estimate local road's VMT more accurately by using GPS vehicle trajectory data (Klatko et al., 2017) or more sophisticated statistical tools, such as interpolation methods (Nasri et al., 2019). However, local jurisdictions' accessibility to such datasets/methods is still unknown.

In this paper, we aim to answer these questions; which travel datasets do local governments in California commonly need?; and what are specific planning activities for which they utilize such travel data? Through a survey that targets local governments in California, we aim to understand the state-of-the-practice of local jurisdictions with and demand for VMT data. The results will allow us to identify the void of transportation data demanded by local governments and planning activities and processes impacted by the void.

Understanding the current state of the practice at local governments on VMT estimation and the effectiveness of local policies on regional VMT reduction will help local governments prioritize strategies that significantly reduce VMT and GHG emissions. If VMT estimation at the local level is more accessible and become more readily available, it would

favor infill development and denser urban development in existing urbanized areas.

Citations

- Klatko, T. J., Saeed, T. U., Volovski, M., Labi, S., Fricker, J. D., & Sinha, K. C. (2017). Addressing the Local-Road VMT Estimation Problem Using Spatial Interpolation Techniques. *Journal of Transportation Engineering, Part A: Systems*, 143(8), 04017038. <https://doi.org/10.1061/JTEPBS.0000064>
- Lovejoy, K., Sciara, G.-C., Salon, D., Handy, S. L., & Mokhtarian, P. (2013). Measuring the impacts of local land-use policies on vehicle miles of travel: The case of the first big-box store in Davis, California. *Journal of Transport and Land Use*, 6(1), 25–39. <https://doi.org/10.5198/jtlu.v6i1.336>
- Nasri, A., Zhang, L., Fan, J., Stewart, K., Younes, H., Fu, C., & Jessberger, S. (2019). Advanced Vehicle Miles Traveled Estimation Methods for Non-Federal Aid System Roadways Using GPS Vehicle Trajectory Data and Statistical Power Analysis. *Transportation Research Record*, 2673(11), 296–308. <https://doi.org/10.1177/0361198119850790>
- Salon, D., Boarnet, M. G., Handy, S., Spears, S., & Tal, G. (2012). How do local actions affect VMT? A critical review of the empirical evidence. *Transportation Research Part D: Transport and Environment*, 17(7), 495–508. <https://doi.org/10.1016/j.trd.2012.05.006>
- Salon, D., California Environmental Protection Agency., & University of California, Davis. (2014). Quantifying the effect of local government actions on VMT. <http://catalog.hathitrust.org/api/volumes/oclc/881288766.html>.

Key Words: VMT, Local Governments, GHG emission reduction, Data Source, Local Land Use Planning

EXPLORING THE NEIGHBORHOOD-LEVEL FACTORS ASSOCIATED WITH COLLISIONS BETWEEN FREIGHT TRUCKS AND BICYCLES

Abstract ID: 1241

Individual Paper Submission

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Although there is growing evidence that collisions between freight trucks and bicycles are far more likely to be fatal than other types of traffic accidents, little is known about the neighborhoods wherein trucks tend to collide with bicyclists and the characteristics of these neighborhoods. Previous studies have primarily conducted micro-level analyses to identify person- or crash-related factors that predict truck–bicycle crashes, but they provide limited insight on how infrastructure and land use planning can address this emerging traffic safety issue. To overcome this limitation, this study examines the spatial distribution of collisions involving trucks and bicycles at the neighborhood level and analyzes the factors influencing this distribution. The selected geographical area of study is Seoul, South Korea, where the number of collisions between trucks and bicycles has recently skyrocketed. Using various spatial regression models that can overcome the limitations of standard regression models, this study compares how neighborhood characteristics that predict truck–bicycle crashes differ from those that predict other types of crashes.

The results consistently show that collisions between trucks and bicycles tend to significantly increase in areas located near freight-related facilities, like other types of freight-related traffic accidents. However, unlike other freight-related traffic accidents, truck–bicycle collisions are less likely to occur in neighborhoods with more highways or near major intersections. Instead, trucks tend to hit bicyclists in areas with higher densities of arterial roads or narrower local streets. The results also indicate that neighborhoods with a higher frequency of truck–bicycle collisions differ significantly from those with more passenger–car–bicycle collisions. These results suggest that planning interventions designed to improve road safety should be tailored to the types of vehicles involved in crashes. Specifically, the factors found to be associated with truck–bicycle collisions in this study will help planners develop measures to reduce such collisions and alleviate the adverse impacts of increasing freight movements on local communities.

Citations

- Yang, C., Chen, M., & Yuan, Q. (2021). The geography of freight-related accidents in the era of E-commerce: evidence from the Los Angeles metropolitan area. *Journal of Transport Geography*, 92, 102989.
- Pokorný, P., & Pitera, K. (2019). Truck-bicycle safety: an overview of methods of study, risk factors and research needs. *European Transport Research Review*, 11(1), 1–14.
- Merlin, L. A., Guerra, E., & Dumbaugh, E. (2020). Crash risk, crash exposure, and the built environment: A conceptual review. *Accident Analysis & Prevention*, 134, 105244.
- Barajas, J. M. (2018). Not all crashes are created equal. *Journal of Transport and Land Use*, 11(1), 865–882.

Key Words: Road safety, Traffic crash, Freight truck, Bicycle, Spatial analysis

THE EFFECTS OF IMPLEMENTING DOCKLESS SCOOTER PROGRAM ON DOCKED BIKESHARE RIDERSHIP IN COMMUNITIES OF CONCERN: A TALE OF THREE CITIES

Abstract ID: 1243

Individual Paper Submission

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E-scooter systems have proliferated in the US over the past five years. Many cities that launched dockless e-scooter programs already had a docked bikeshare system. Previous studies explore the interactions between docked and dockless micromobility based on cross-sectional design and comparisons of service geographies (Meng & Brown, 2021; Qian, Jaller, & Niemeier, 2020) or travel patterns (McKenzie, 2019; Younes, Zou, Wu, & Baiocchi, 2020). However, limited research examines the direct complementary/substitution effects of dockless e-scooter systems on existing docked bikeshare trips (Li, Zhang, Ding, Ren, & Practice, 2019; Yang et al., 2021). In this study, we examine the implementation of pilot e-scooter programs in three cities as quasi-natural experiments to examine how e-scooter sharing influences the number of docked bikeshare trips.

This study asks three questions: 1) How does the implementation of dockless e-scooter programs influence docked bikeshare trip making? 2) Do the influences of dockless scooter programs on docked bikeshare vary across communities with different socio-economic characteristics? And 3) What are the equity implications of the impacts of the dockless system on docked bikeshare? To answer these three research questions, we collected the bikeshare data before/after implementing e-scooter sharing programs from three cities where the operational area of e-scooter is only overlaid with partial docked bikeshare stations, including Boston, MA, Chicago, IL, and San Francisco, CA. We will first utilize the difference in differences (DID) model based on propensity scoring matching (PSM) to examine the effects of e-scooter sharing on the overall docked bikeshare ridership. Then, we explore how e-scooter systems affect the use of docked bikeshare by members and casual users; during peak and non-peak periods; and on weekdays and weekends. Additionally, we replicate these analyses by sampling docked stations in communities of concern (defined by Qian et al. (2020)) in the three study cities.

Findings from this study contribute to the existing literature on the relationship between different micromobility systems in three key ways. First, a quasi-natural experiment design allows us to estimate the causal effects of dockless e-scooter sharing on the ridership of docked bikeshare. Specifically, we will use the PSM to alleviate the selection bias resulting from the designation of the e-scooter operational area. Second, we utilize docked bikeshare data from three cities, exceeding the sample size of previous studies. Thus, the results are more generalizable. Third, we examine the heterogeneous treatment effects, emphasizing bikeshare stations in communities of concern where individuals might rely more on active transportation than the general population. Finally, a better understanding of the relationship between these two systems could contribute to the policy-making process so that the local government could issue targeting policies to improve the overall micromobility.

Citations

- Li, H., Zhang, Y., Ding, H., & Ren, G. (2019). Effects of dockless bike-sharing systems on the usage of the London Cycle Hire. *Transportation Research Part A: Policy and Practice*, 130, 398-411.
- Meng, S., & Brown, A. (2021). Docked vs. dockless equity: Comparing three micromobility service geographies. *Journal of Transport Geography*, 96, 103185.
- McKenzie, G. (2019). Spatiotemporal comparative analysis of scooter-share and bike-share usage patterns in Washington, D.C. *Journal of Transport Geography*, 78, 19-28.
- Qian, X., & Jaller, M. (2020). Bikesharing, equity, and disadvantaged communities: A case study in Chicago. *Transportation Research Part A: Policy and Practice*, 140, 354-371.
- Yang, H., Huo, J., Bao, Y., Li, X., Yang, L., & Cherry, C. R. (2021). Impact of e-scooter sharing on bike sharing in Chicago. *Transportation Research Part A: Policy and Practice*, 154, 23-36.

Key Words: Micromobility, E-scooter, Bikeshare, Ridership, Difference-in-differences

CYCLING THROUGH THE COVID PANDEMIC TO A MORE SUSTAINABLE TRANSPORT FUTURE: EVIDENCE FROM CASE STUDIES OF 15 CITIES IN EUROPE AND NORTH AMERICA

Abstract ID: 1244

Individual Paper Submission

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The COVID pandemic has changed travel habits in countries and cities around the globe. During the first year of the pandemic, many countries and cities reported strong increases in bicycling and sales of bicycles. Many jurisdictions responded to the COVID pandemic by providing additional space for cyclists through pop-up bike lanes and residential streets closed to motor vehicle traffic. Some cities reported declines in bicycling—mainly in places that formerly had a high share of bicycling commuters among their cyclists. Stay at home orders and remote working and learning reduced commuting and with it bike commuting as well.

In this paper, we focus on trends in Western Europe and North America and are asking two questions: first, what are the trends in bicycling during 2021 and how do they compare to 2020 and 2019? Second, how did the COVID pandemic affect bicycling and bike planning in cities in Europe, the United States, and Canada? To answer the first question we reviewed the emerging literature and analyzed available data from bicycle counters aggregated to the national level for the USA, Canada, Belgium, France, Germany, Austria, Sweden, UK, Ireland, Italy, Spain, and Portugal. This is an extension of our previous research on the initial impact of COVID-19 on bicycling. Impacts of COVID-19 on bicycling and bike planning varied by jurisdiction. We conducted case studies of 15 cities in the US, Canada, Germany, France, Belgium, and Spain to analyze trends in bicycling and bike planning connecting the time before the pandemic with trends during the pandemic and plans for the future. Data for the case studies originate from zoom conversations and email-exchanges with bike planners, academics, and cycling advocates from each city. In addition, we analyzed data and planning documents provided directly by our local contacts. In addition, we relied on internet research and media reports about cycling, trends, plans, and policies in each city.

Analysis of national level aggregate counter data reveals that virtually all countries saw increases in cycling between 2019 and 2021. Growth in cycling was concentrated on weekends, while several countries saw declines in cycling on weekdays between 2019 and 2021. Remote working and learning reduced the number of cycling commutes. Comparisons of cycling levels by month show great variability over time with sharp declines in cycling levels during lockdowns and stay at home orders. In general, however, monthly cycling levels in 2020 were higher than in 2019. While cycling levels in 2021 were still higher than in 2019, they were generally lower than in 2020.

Our case study analysis of 15 cities in Europe and North America shows that virtually all European cities saw increases in cycling during the COVID pandemic. By contrast, many case study cities in the US and Canada saw declines in cycling. One explanation is the strong commute orientation of cycling in our North American case study cities.

City responses to COVID varied. Some cities, like Paris and Brussels built many pop-up bike lanes to facilitate cycling and close gaps in their bikeway networks. Other cities only implemented a limited number or did not implement any pro-bicycling measure in response to COVID. However, all cities continued to implement bicycling friendly measures, such as bike lanes, protected, bike lanes, increased bike parking, greater funding, or increased staff for bicycling. Cities like Paris, Brussels, Munich, Berlin, and Freiburg had passed very ambitious plans for bicycle promotion just prior to the COVID pandemic and implemented many bike-friendly policies during the years of the pandemic. Overall, conditions for bicycling are better in our case study cities in 2022 compared to 2019.

Citations

- Buehler, R., Pucher, J. 2021. COVID-19 Impacts on Cycling. *Transport Reviews*. Vol. 41, No. 4
- Krause, S., Koch, N. 2021. Provisional COVID-19 infrastructure induces large, rapid increases in cycling. *PNAS*, Vol. 118, No. 15.
- Combs, T., & Pardo, C. 2021. Shifting streets COVID-19 mobility data: Findings from a global dataset and a research agenda for transport planning and policy. *Transportation Research Interdisciplinary Perspectives*, 9(March).

Key Words: bicycling, COVID, Europe, North America, case studies

DOES CONTEXT SHAPE PREFERENCE? A LONGITUDINAL EXAMINATION OF THE RELATIONSHIPS AMONG ATTITUDES, THE BUILT ENVIRONMENT AND TRAVEL BEHAVIOR

Abstract ID: 1247

Individual Paper Submission

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The role of travel related attitudes in the connection between the built environment and travel behavior has received substantive attention in planning discourse. Travel attitudes directly influence travel behavior and indirectly through residential location choice (referred to as residential self-selection) (Cao, Mokhtarian and Handy, 2009). However, social psychology theories suggest that a person's attitude can change over time due to many influences, including newly acquired information, observations of other people, and one's own experiences of attitude-relevant behavior

(Eagly and Chaiken, 1993; Kroesen, Handy and Chorus, 2017).

Empirical models generally use cross sectional data and assume that attitudes are time invariant and exogenous to the built environment and travel behavior. This study utilizes longitudinal panel data and examines the potential for a reverse relationship. More specifically, it poses questions about attitudinal and behavioral changes. For instance, do individuals' travel attitudes (TA) change over time? If so, what drives this change in attitudes? Does one's exposure to a built environment (BE) and (one's experience of) newly adopted travel behavior (TB) trigger these changes?

To answer these questions, this study uses three waves of the Netherlands Mobility Panel (known as MPN) Data (2014, 2016, 2018). The reciprocal relationships among the built environment characteristics (BE), attitudes towards bicycle (TA) and frequency of using bicycle (TB) are examined using a Random Intercept Cross-Lagged Panel Model (RI-CLPM) within Structural Equation Modeling (SEM) framework. Total 2,405 respondents were included in the analysis who completed all three waves of the survey. The model includes BE, TA and TB at three time points as endogenous variables, and socio-demographics as exogenous variables. The RI-CLPM specification examines to what extent the BE and TB at earlier time points explain TA changes over time.

Different model specifications are tested and compared through the process of backward elimination. The final model gives a satisfactory fit. The results show that autoregressive parameters (which represent stability over time) are strong. That means, indicators (BE, TB, TA) of earlier time points are good predictors of their counterparts in later time points. Most importantly, the cross-lagged parameters (which represent the reciprocal effect over time) indicates that both the BE and TB variables show strong reverse causality effects. In other words, one's BE characteristics (activity density) and frequency of bicycle use at an earlier time point significantly explains one's bicycle attitude at later time. Time-lagged effects of BE and TB on TA are stronger than vice versa. For example, the effect of one's earlier bicycle use on one's current bicycle attitude is stronger than the effect of one's earlier attitudes toward cycling on one's current bicycle use. These findings provide support for the theory that people adjust their travel attitudes based on their experience of BE characteristics and particular mode of travel.

The findings of this study underscore the importance of considering the more expansive and long-term impacts of BE policies on sustainable travel outcomes. If planners can provide socially desirable built environment alternatives at affordable prices, then preferences for these alternatives are likely to be cultivated and maintained over time.

Citations

- Cao, X., Mokhtarian, P. L. and Handy, S. L. (2009). Examining the Impacts of Residential Self-Selection on Travel Behavior: A Focus on Empirical Findings. *Transport Reviews*, 29(3), 359–395.
- Eagly, A. H. and Chaiken, S. (1993). *The psychology of attitudes*. Orlando, FL, US: Harcourt Brace Jovanovich College Publishers.
- Kroesen, M., Handy, S. and Chorus, C. (2017). Do attitudes cause behavior or vice versa? An alternative conceptualization of the attitude-behavior relationship in travel behavior modeling. *Transportation Research Part A: Policy and Practice*, 101,190–202.

Key Words: Travel Attitudes, self-selection, reverse causality

URBAN FORM AND TRANSPORTATION TAXES

Abstract ID: 1249

Individual Paper Submission

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Urban planners tend to emphasize land use planning measures such as compact development to address the negative impacts of car travel. Economists, in contrast, tend to favor price-based approaches such as higher gasoline and carbon taxes. While price-based approaches are normally more efficient and would soften consumer demand for lower-density, car-oriented housing, economists tend to sidestep the question of where taxes come from. There is no benevolent social planner who sets taxes on gasoline, carbon, and congestion at the socially efficient level. Rather, such taxes are determined by elected officials in federal, state, and local government, or by voters directly through referenda and ballot initiatives.

In this paper, we highlight one synergy between pricing and regulation that emerges from the political economy of transportation taxes. Specifically, we hypothesize that voters will be more willing to increase gasoline and carbon taxes in compact, walkable neighborhoods that are well served by transit. To the extent that land use regulation promotes less car-oriented development, taxes on car travel become more feasible.

We examine the impact of five measures of urban form – residential density, job density, jobs-housing balance, road

network density, and transit frequency – on support for two California ballot measures that would have repealed carbon pricing and gasoline tax increases that had been enacted by the state legislature. We pay particular attention to separating out the impact of urban form from that of ideology, given the confounding influence of liberal voters tending to cluster in larger, denser cities. Specifically, we model the impact of urban form variables on support for each of the two ballot measures, after controlling in various ways for vote share in the Governor's race and on separate tax-related ballot measures.

We find ideology is the primary determinant of support for taxes for transportation taxes. However, residential density, employment density, and transit frequency—but not jobs-housing balance or road density—are also useful predictors of support. For example, moving from the 1st percentile of residential density to the 99th percentile increases support for gasoline tax increases from 57% to 60%, holding our ideological measures at their statewide means. For transit frequency, the effect of a shift from the 1st to the 99th percentile is an increase in support from 56% to 60%. In a closely divided election, therefore, land use patterns can determine the success of a referendum on transportation taxes.

Much has been written about how auto-oriented urban form locks in car dependency through path dependencies in land use patterns. From a political economy perspective, such land use patterns may also lock in cheap driving, or at least make it more difficult to price roads and gasoline correctly. The literature already shows how higher gasoline taxes lead to more compact development. Here, we demonstrate that the relationship is two-way: compact development can also lead to a small increase in voter support for increased taxes on driving. While our results are limited to two California referenda, it is reasonable to infer that the effect also exists where taxes are determined legislatively rather than through referenda. To some extent, council members and other elected officials respond to the preferences of their constituents.

Our results also imply that the voluminous research on land use and transportation underestimates the long-run impacts of compact development on driving. Such studies are typically unable to capture the indirect effect of compact development on increasing political support for taxes on driving.

Citations

- Boarnet, Marlon G. 2010. "Planning, Climate Change, and Transportation: Thoughts on Policy Analysis." *Transportation Research Part A: Policy and Practice* 44(8):587–95. doi: 10.1016/j.tra.2010.03.001.
- Holian, Matthew J., and Matthew E. Kahn. 2015. "Household Demand for Low Carbon Public Policies: Evidence From California." *Journal of the Association of Environmental and Resource Economists* 2(2):205–34. doi: 10.3386/w19965.
- Klein, Nicholas J., Kelcie Ralph, Calvin Thigpen, and Anne Brown. 2021. "Political Partisanship and Transportation Reform." *Journal of the American Planning Association* 1–16. doi: 10.1080/01944363.2021.1965495.
- Manville, Michael, and Benjamin Cummins. 2015. "Why Do Voters Support Public Transportation? Public Choices and Private Behavior." *Transportation* 42(2):303–32. doi: 10.1007/s11116-014-9545-2.
- Nall, Clayton. 2018. *The Road to Inequality: How the Federal Highway Program Polarized America and Undermined Cities*. Cambridge, United Kingdom?; New York, NY: Cambridge University Press.

Key Words: transportation taxes, carbon taxes, urban form

ANALYZING THE USE AND IMPACTS OF OAKLAND SLOW STREETS AND EQUITY IMPLICATIONS BEYOND COVID-19

Abstract ID: 1250

Individual Paper Submission

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This paper presents the results of a mixed-methods study of the Oakland Slow Streets program. An official response to the Covid-19 pandemic in 2020, the program used signs and temporary barricades to limit thru-traffic on 21 miles of city streets in order to create more and safer space for walking, cycling, and outdoor recreation. The research team, led by a faculty member and graduate student researcher and working in consultation with the City of Oakland Department of Transportation (OakDOT), collected data throughout the summer of 2021 seven designated Slow Streets plus one cross street and one 'control' street for each – a total of 21 street segments representing conditions in seven different neighborhoods across Oakland. Data collection comprised in-person passerby counts for each segment on eight separate dates, as well as logging ESRI here.com traffic speeds for each segment at a total of 204 different times (three times a day for 68 days). Researchers also recorded local street and environmental conditions and other observations in field notes and photographs. The data represent a variety of times of day and days of the week for each segment during May, June, and July 2021.

By analyzing how Slow Streets were used in seven different neighborhoods, the research sought to understand where the streets functioned as intended, where they did not, and the equity implications of differences observed across geographic and socioeconomic lines. Overall, we do not find evidence that Slow Streets designations alone caused reduced through-traffic, reduced speeds, or increased pedestrian and bicycle uses in a reliable or generalizable sense. In certain cases, observed Slow Streets did clearly carry less car traffic or more bicycle/pedestrian use than one or both of their nearby comparison streets, and in at least one case the Slow Street was clearly embraced by the local community and used as planners intended; in others the Slow Street was no different than its neighbors. Where differences were found between a Slow Street and its respective comparison streets, preexisting street conditions or other locally-specific variables seem likely to explain it as much as the Slow Street designation itself.

Drawing on these findings, the study identifies local conditions that seem likely to make Slow Street treatments more or less successful. However, acknowledging that all neighborhoods deserve safer streets and greater outdoor recreational opportunities, we argue that the answer must be better community outreach both before and after the program's rollout to ensure that areas not predisposed to make full use of Slow Streets can have the opportunity to do so. Finally, as Oakland formally ends its pandemic-era Slow Streets program and considers ways it might employ similar street treatments in the future, the study offers some thoughts on the potential for rapid, low-cost bike and pedestrian street safety improvements going forward.

Citations

- City of Oakland Department of Transportation and Pond-Danchik, N. (2020) Oakland Slow Streets Interim Findings Report. Published by Oakland Department of Transportation, <https://cao-94612.s3.amazonaws.com/documents/Oakland-Slow-Streets-Interim-Findings-Report-With-Appendices.pdf>
- Hong, J., McArthur, D., & Raturi, V. (2020) "Did safe cycling infrastructure still matter during COVID-19 lockdown?" *Sustainability*, 12(20), 8672–. <https://doi.org/10.3390/su12208672>
- Koch, N. and Kraus, S. (2021) "Provisional COVID-19 infrastructure induces large, rapid increases in cycling." *Proceedings of the National Academy of Sciences of the United States of America*, 118(15), <https://doi.org/10.1073/pnas.2024399118>
- Pishue, B. (2020) Utilization of COVID-19 Street Programs in 5 U.S. Cities. Report published by INRIX. <https://inrix.com/learn/utilization-of-covid-19-safe-streets-study/>

Key Words: Slow Streets, Covid-19, Traffic Calming, Equity, Disaster Response

ANALYZING THE RELATIONSHIP BETWEEN URBAN HEAT ISLANDS AND TRANSIT-ORIENTED DEVELOPMENTS: A CASE OF EDMONTON, CANADA

Abstract ID: 1255

Individual Paper Submission

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Transit-oriented developments (TODs), as a smart growth policy, have gained popularity as an approach to combatting the adverse effects of urban sprawl. TODs provide environmental benefits by reducing GHG emissions (Ali et al., 2021; Gao et al., 2022), as well as offers some economic and social benefits (Nahlik & Chester, 2014). However, little or no research exists regarding their impact on the urban heat stress/exposure. This study aims to fill this gap in the literature by analyzing the relationship between the concept of TOD and the urban heat island effect (UHI), an environmental phenomenon that leads to extreme hot spots in urban areas. More specifically, this study strives to answer the following questions: (1) Do TODs in a winter city such as Edmonton experience the UHI effect? (2) How did the UHI effect in TODs change temporally? (3) What factors mainly contribute to the UHI effect of TODs?

We used Landsat 5 and 8 satellite images from 2010 to 2020 that were acquired during the summer to generate land surface temperatures (LST) and UHI maps. We studied the UHI changes in TOD areas (400m area around selected LRT stations) compared to surrounding non-TOD areas (that have a similar area as TOD areas) to understand the effect of TOD on UHI development. Our results show that UHIs have significantly increased in the TOD areas over the last decade. Furthermore, TOD areas experienced a higher UHI effect compared to non-TOD areas, due to the differences in land use and land cover between the two areas. Although non-TOD areas also experienced an increase in temperature over the years, the rate of increase in land surface temperature (LST) and UHI effect was higher in TODs. Our findings suggest that when developing and designing new TODs, policies and development guidelines should aim to mitigate the UHI effect by preserving or increasing the natural landscapes, particularly vegetation.

Our findings have significant implications for the field of urban planning, as they call into question TODs as a sustainable planning tool. Although TODs can generate environmental benefits by decreasing city residents' use of their personal vehicles, thereby reducing GHG emissions, our study shows that they experience a higher heat island intensity if enough vegetation cover and high albedo surfaces are provided. The outcomes of this study will help policy-makers, planners, and developers to address and mitigate UHI effects when developing new TODs.

Citations

- Ali, L., Nawaz, A., Iqbal, S., Aamir Basheer, M., Hameed, J., Albasher, G., Shah, S. A. R., & Bai, Y. (2021). Dynamics of transit oriented development, role of greenhouse gases and urban environment: A study for management and policy. *Sustainability*, 13(5), 2536. <https://doi.org/10.3390/su13052536>
- Nahlik, M. J., & Chester, M. V. (2014). Transit-oriented smart growth can reduce life-cycle environmental impacts and household costs in Los Angeles. *Transport Policy*, 35, 21–30. <https://doi.org/10.1016/j.tranpol.2014.05.004>
- Kamruzzaman, M., Deilami, K., & Yigitcanlar, T. (2018). Investigating the urban heat island effect of transit-oriented development in Brisbane. *Journal of Transport Geography*, 66, 116–124. <https://doi.org/10.1016/j.jtrangeo.2017.11.016>

Key Words: Urban Heat Island, Transit-oriented Developments, Urban Sprawl, Surface Temperature

EQUITABLE TRANSIT-ORIENTED DEVELOPMENT? INSIGHTS FROM 19 CITIES IN SOUTHERN CALIFORNIA

Abstract ID: 1271

Individual Paper Submission

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Transit-oriented development (TOD) has gained increasing popularity to encourage sustainable development and realize its environmental, economic, and social benefits. However, social equity has historically played a minor role in TODs than stimulating economic growth and reducing greenhouse gas emissions (Guthrie, 2018). The social equity implications of TOD are the product of both market forces and public sector actions. As private developers play an increasingly significant role in facilitating TODs, it is critical to examine the responses of public sectors in promoting TODs, especially in achieving equitable TODs, which are underrepresented in the literature. Furthermore, there have been growing concerns about gentrification and displacement induced by market-driven TODs in recent decades. Indeed, the variation in the findings across different metropolitan regions highlights the importance of regional context and local government policies in achieving equitable development in transit-served neighborhoods. However, the extent to which TODs promote equitable developments in specific local and regional contexts is yet to be explored.

In light of these concerns and gaps, this study examines the extent to which local governments in the Southern California region promote equitable development in TODs through development regulations and policies. It uses a multiple-case study approach, following the guidelines suggested by Yin (2018). It studies 19 rail-based TOD specific plans—development regulations and policies that apply to transit-adjacent areas within cities to implement goals and objectives included in the cities' general plans and facilitate developments around transit stations. These specific plans are adopted by 19 incorporated cities in the Southern California region to promote TODs. Next, the study uses the equity-oriented criteria proposed by the American Planning Association (2019) and the operationally defined criteria included in the LEED-ND (Leadership in Energy and Environmental Design for Neighborhood Development) rating system, as the analytical framework, to determine whether and to what extent these targeted TOD specific plans address the selected criteria that evaluate both the general quality and equity-focused quality of TOD plans (Garde, 2017; Loh & Kim, 2021).

The findings show that local governments in the Southern California region facilitate equitable TODs in different approaches. However, equity is not a guiding principle in local TOD planning since the majority of specific plans do not mention equity or identify underserved areas or populations. In addition, providing affordable housing units and increasing the share of land for multifamily housing near transit stations are two common strategies adopted by cities to facilitate equitable TODs. However, there is considerable variation in the extent to which local governments adopt these two strategies.

Further, the study also uses one-way analyses of variance (ANOVA) to determine whether the extent to which local governments support equitable features of TODs is associated with the characteristics of cities and transit stations. The findings show that cities with lower median household income, a larger concentration of non-white populations, and higher population density are more likely to facilitate equitable development in TODs to a greater extent.

Overall, the study emphasizes the necessity of examining TOD regulations and policies with a focus on social equity. The findings of this study could provide insights into the strengths and weaknesses of existing policies in facilitating

equitable TODs and possibly explain the variation among different municipalities in the same region. Other metropolitan regions and cities promoting TODs would benefit from the evaluative methods and findings of this research to achieve more equitable TODs.

Citations

- American Planning Association. (2019). Planning for Equity Policy Guide. https://planning-org-uploaded-media.s3.amazonaws.com/publication/download_pdf/Planning-for-Equity-Policy-Guide-rev.pdf
- Garde, A., & Kim, C. (2017). Form-based codes for zoning reform to promote sustainable development: Insights from cities in Southern California. *Journal of the American Planning Association*, 83(4), 346–364.
- Guthrie, A. (2018). Can transit-oriented development enhance social equity? Current state and active promotion of equitable transit-oriented development [Doctoral dissertation, University of Minnesota]. ProQuest Dissertations and Theses Global.
- Loh, C. G., & Kim, R. (2021). Are we planning for equity?: Equity goals and recommendations in local comprehensive plans. *Journal of the American Planning Association*, 87(2), 181–196.
- Yin, R. K. (2018). Case study research and applications: Design and methods. SAGE.

Key Words: Transit-Oriented Development, Social Equity, Local Government, Southern California

COMMUNITY-DESIGNED PARTICIPATION: LESSONS FOR EQUITABLE ENGAGEMENT IN TRANSPORTATION PLANNING

Abstract ID: 1272

Individual Paper Submission

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Despite long-standing directives for public consultation in transportation policy, formal processes often follow the “decide, announce, defend” model, giving the perception of participation with little community control over decision-making (Bickerstaff, Tolley, & Walker, 2002). Recent examinations of meaningful public engagement in transportation planning note the importance of providing resources and increasing the capacity of community-based organizations (Karner and Marcantonio, 2018). However, even with substantial community capacity, the structure of formal public processes can work to limit inclusive engagement (McAndrews and Marcus, 2015). While transportation planning that incorporates community knowledge and lived experiences has the potential to improve equity outcomes, there is little known about the potential to bridge community-led and formal processes.

This research is based on a participatory action research project undertaken by a partnership of academics and advocacy groups in Ottawa, Ontario. This work draws on a co-created public survey (n = 600), and content analyses of city-led engagement process to understand how equity concerns can be better integrated into transportation planning processes. We address the following research questions: (1) How do community-led processes assess transportation equity values and priorities? How does this differ from agency-developed engagement? (2) What are the barriers and opportunities to integrating community-derived equity goals in formal planning processes?

Our findings explore the differences in community- and agency-led processes as they relate to representation, conceptualizations of equity, and implications for equitable engagement and planning. On basic measures of representativeness, agency-led engagement did not adequately reflect the diversity of the community, and rarely presented disaggregated data for analysis. We found that legally-mandated consultations did not address issues of critical importance to community members, such as safety and affordability, and were based in a very narrow framing of equity as “fairness”, irrespective of race, Indigeneity, gender, disability or other identity. We also found that community-members are reluctant to participate in agency-led engagement because of the belief that that there would be little impact on the decision-making process. Overall, community-led engagement processes can address critical questions about the values that should shape equitable transportation investments and better reflect the needs of equity-deserving groups, which were largely elided in formal agency engagement. Given the critical need to incorporate different types of knowledge and lived experiences in transportation planning (Lowe, 2020), this research points to the role that community-led processes can take in framing high-level equity values and priorities.

Citations

- Bickerstaff, K., Tolley, R., & Walker, G. (2002). Transport planning and participation: the rhetoric and realities of public involvement. *Journal of Transport Geography*, 10(1), pp. 61-73.
- Karner, A., & Marcantonio, R. A. (2018). Achieving transportation equity: Meaningful public involvement to meet the needs of underserved communities. *Public Works Management & Policy*, 23(2), pp. 105-126.

- Lowe, K. (2020). Undone science, funding, and positionality in transportation research. *Transport Reviews*, pp. 1-18.
- McAndrews, C., & Marcus, J. (2015). The politics of collective public participation in transportation decision-making. *Transportation Research Part A: Policy and Practice*, 78, pp. 537-550.

Key Words: transportation equity, public engagement, community-led research

EXPLORING THE “PUBLIC TRANSIT DESERT” CONCEPT THROUGH MEASURING THE GAPS BETWEEN SUPPLY AND DEMAND OF PUBLIC TRANSIT SERVICE IN DALLAS

Abstract ID: 1279

Individual Paper Submission

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For decades, suburban development has been a dominant growth pattern in most North American cities. This form of urban growth which is low-density, noncontiguous and highly automobile dependent is considered as unsustainable and unjust in many transportation related aspects (Bengston et al., 2004). This type of development has mostly paved the roads for seamless movement of private cars and driving is believed to be highly related to climate change, global warming, air pollution, dependence on fossil fuels, and traffic congestion. As a result, most of the low-income families and the underserved population without cars suffer from the lack of multimodal mobility options and reduced accessibility to various opportunities (Cervero, 2020). This is a substantial social equity issue since the United States Supreme Court considers the right to travel and mobility as a fundamental right for everyone guaranteed by the 14th Amendment to the U.S. Constitution (Jiao & Dillivan, 2013; Sanchez & Brenman, 2008). A natural response of planners to the needs of those groups is to promote public transit services that provide an acceptable level of accessibility and achieve transportation sustainability and equity (Murray & Wu, 2003). However, numerous studies show that public transit in the US has been highly underutilized. According to the American Community Survey (ACS), public transportation commuters constituted about 5 percent of all workers in the United States in 2019, and about 45% of Americans have no access to public transportation (Hughes-Cromwick & Dickens, 2019)

While most of the existing studies on this issue have focused on the underlying reasons of public transit underutilization, such as built environment characteristics or socio-economic factors, few attempts have tried to identify where the need for public transit is truly located in urban areas and what factors defines public transit-dependent populations.

Borrowing the concept of “public transit desert” from “food desert” utilized in many public health researches (Clarke et al., 2002; Jiao & Dillivan, 2013), this study’s objective is evaluate public transit performance through measuring and visualizing the gaps between supply and demand in public transit through methods using different categories of data such as socio-economic factors (age, poverty status, vehicle ownership and disability status) for demand as well as built environment walkability factors (sidewalk length, intersection density) and characteristics of public transit service (transit stops service area, capacity of fleet, frequency of service) for supply (Seyrfar et al., 2021). In this study the mismatch between supply and demand are depicted on a GIS-based platform. Census tracts are employed as the geographic unit for analysis. The City of Dallas and its peripheral areas are selected as the empirical case with the data collected from 2020 US Census and General Transit Feed Specifications (GTFS) of Dallas Area Rapid Transit (DART). The remaining data are calculated in ArcGIS environment using transportation network datasets obtained from Dallas-Fort Worth MPO (NCTCOG).

While DART has the longest light rail service in the US (93 miles), serious gaps between supply and demand are expected to be identified in this area, especially in the Southern and Western parts. The results of this study highlights the needs of underserved population and contributes to creation of equitable and sustainable transportation systems. This mismatch measurement can be applied to any context where public transit planners are willing to extend the service or optimize it for better accommodation of public transit-dependent population. Using these results, planners would be able to create more equitable transportation services with increased efficiency.

Citations

- Cervero, R. (2020). The transit metropolis: A 21st century perspective. In *Transportation, Land Use, and Environmental Planning* (pp. 131–149). Elsevier.
- Clarke, G., Eyre, H., & Guy, C. (2002). Deriving indicators of access to food retail provision in British cities: Studies of Cardiff, Leeds and Bradford. *Urban Studies*, 39(11), 2041–2060.
- Jiao, J., & Dillivan, M. (2013). Transit deserts: The gap between demand and supply. *Journal of Public Transportation*, 16(3), 2.
- Murray, A. T., & Wu, X. (2003). Accessibility tradeoffs in public transit planning. *Journal of Geographical Systems*, 5(1), 93–107.

- Seyrfar, A., Zandiatashbar, A., & Canepa, A. (2021). Evaluating Transportation Equity: Focusing on Transit Deserts and Transit-Dependent Population. 407–417.

Key Words: Public Transit Desert, Supply and Demand, City of Dallas, Public Transit-dependent Population

DESIGNING PANDEMIC RESILIENT CITIES: EXPLORING THE IMPACTS OF THE BUILT ENVIRONMENT ON INFECTION RISK PERCEPTION AND SUBJECTIVE WELL-BEING

Abstract ID: 1283

Individual Paper Submission

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The COVID-19 outbreak caused enormous global challenges, namely millions of hospitalizations and deaths, interruption of global supply chains, business bankruptcies, and overwhelmed health systems (Budd & Ison, 2020; Thoradeniya & Jayasinghe, 2021). These challenges resulted in significant disruptions to individuals' daily activities and travel frequencies worldwide (Budd & Ison, 2020). As a response to these new challenges posed by the pandemic, various local governments around the world introduced open street policies to create safe urban environments and promote non-motorized transportation (NACTO (National Association of City Transportation Officials), 2020). They redistributed the street space to promote physical activity and non-motorized travel while meeting the social distancing requirements. Although the statistics showed significant increases in walking and bicycling trips during the pandemic, we have limited knowledge about the associations between built environment characteristics, COVID-19 infection risk perception while traveling, and subjective well-being.

This study assesses the impacts of the built environment on subjective well-being and infection risk perception while traveling during the pandemic. It uses data collected from the residents of Columbus, OH, through a multi-wave survey conducted at different time points during the COVID-19 outbreak. Survey responses were collected through mailed surveys and the Qualtrics Online Panel, an online sample recruitment service. The surveys included questions about infection risk perceptions associated with COVID-19 regarding different transportation modes, subjective well-being, overall travel satisfaction, pro-environmental identity, and personal and household characteristics.

To explore the impacts of built environment characteristics, we merged the survey responses with the United States Environmental Protection Agency (U.S. EPA)'s Smart Location Database (SLD). SLD is a nationwide geographic data resource for measuring location efficiency, and it includes more than 90 attributes summarizing characteristics such as household and employment density, diversity of land use, design of the built environment, access to destinations, and transit accessibility (for details see Chapman et al., 2021). The database is developed in a way that it can reflect the five D-variables that are described in the literature (Ewing & Cervero, 2010).

The final study sample included 1,171 respondents. We employed a structural equation modeling approach to explore the associations between residential neighborhood characteristics, individuals' subjective well-being, and perceived infection risk while using non-motorized modes and shared micromobility. The findings show that those living in more compact, accessible, and walkable neighborhoods are less likely to perceive active travel and shared micromobility as risky in terms of COVID-19 infection. Our results also show that built environment characteristics have an indirect positive effect on the subjective well-being of individuals. The findings of our study demonstrate that built environment interventions can help promote physical activity and support the mental health of individuals at this critical time. Our study also indicates that designing compact, diverse, walkable, and accessible neighborhoods will be a crucial element of pandemic resilient cities in the post-COVID-19 era.

Citations

- Budd, L., & Ison, S. (2020). Responsible Transport: A post-COVID agenda for transport policy and practice. *Transportation Research Interdisciplinary Perspectives*, 6, 100151. <https://doi.org/10.1016/j.trip.2020.100151>
- Chapman, J., Fox, E. H., Bachman, W., Frank, L. D., Thomas, J., & Reyes, A. R. (2021). Smart Location Database: Technical Documentation and User Guide. https://www.epa.gov/sites/default/files/2021-06/documents/epa_sld_3.0_technicaldocumentationuserguide_may2021.pdf
- Ewing, R., & Cervero, R. (2010). Travel and the Built Environment. *Journal of the American Planning Association*, 76(3), 265–294. <https://doi.org/10.1080/01944361003766766>
- NACTO (National Association of City Transportation Officials). (2020). Streets for Pandemic Response and Recovery. <https://nacto.org/streets-for-pandemic-response-recovery/>
- Thoradeniya, T., & Jayasinghe, S. (2021). COVID-19 and future pandemics: a global systems approach and relevance to SDGs. *Globalization and Health*, 17, 59. <https://doi.org/10.1186/s12992-021-00711-6>

MOBILITY JUSTICE IN RURAL CALIFORNIA: EXAMINING TRANSPORTATION BARRIERS AND ADAPTATIONS IN CARLESS HOUSEHOLDS

Abstract ID: 1286

Individual Paper Submission

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Car access is a practical necessity in rural areas because of the long travel distances required to meet essential needs. Households without a private vehicle, or who own fewer vehicles than adults, tend to make fewer trips and travel a shorter distance daily, and the trips they do make tend to be individually longer and take more time (Mitra & Saphores, 2020, Blumenberg et al., 2020). Yet 4.5 percent of rural households across the U.S. did not own a car in 2017. While this is a smaller share than in urban and suburban areas, lack of car access can still result in reduced out-of-home activities such as medical appointments and jobs, and a greater likelihood of social isolation for rural residents (Delbosc & Currie, 2011; Morris et al., 2020). Residents of rural areas are also underserved by alternative modes, such as public transit, and tend to be socioeconomically disadvantaged in other ways, with higher rates of poverty, for example. However, certain households without vehicles have adapted to carlessness, achieving mobility without resorting to the purchase of vehicles. Mexican immigrants, for example, rely on social networks to get rides and to borrow and share vehicles (Lovejoy & Handy, 2011). Similarly, in those households with fewer than one car per driver, there may be significant negotiation among household members to ensure adequate mobility for daily needs (Blumenberg et al., 2020). While there has been previous research on barriers to transportation access and adaptations in rural communities in the United States, much of this work focuses specifically on access to healthcare or on the broad conditions and policy approaches related to travel challenges outside urban areas. This mixed-methods study sheds new light on rural carlessness, focusing on three research questions: (1) What is the scope and scale of rural car access in California?, (2) What burdens do carless rural households face with respect to mobility and access?, and (3) How do rural households adapt to the lack of a household vehicle to meet their transportation needs?

The quantitative component of this work uses the US Census Public Use Microdata Sample (PUMS) to describe and compare household and individual characteristics by household car availability. Sociodemographic disparities by car access are evident in rural California. Carless households earn substantially lower incomes, are more likely to be Black, immigrants, and have a mobility limitation compared to their car-owning peers. Owning no household vehicles, carless rural residents rely more on alternative modes but are also constrained by poor services. About 8% of carless residents in rural areas commute by bus or bicycle, compared to 1% of their rural peers with at least one car per adult and more than 30% of their carless peers in non-rural areas.

The qualitative component of the research will share insights from interviews with about 50 residents of California's San Joaquin Valley, a region that contains a disproportionate share of disadvantaged rural communities and carless residents. Semi-structured interviews will focus on travel burdens, adaptations to carlessness, and potential policy responses to increasing access in rural areas. Findings from the research will be relevant for policymakers in California and beyond focused meeting vehicle miles traveled (VMT) reduction goals and ensuring that the proliferation of new mobility options and vehicle electrification reaches rural areas in an equitable manner.

Citations

- Blumenberg, E., Brown, A., & Schouten, A. (2020). Car-deficit households: Determinants and implications for household travel in the U.S. *Transportation*, 47(3), 1103–1125. <https://doi.org/10.1007/s11116-018-9956-6>
- Delbosc, A., & Currie, G. (2011). Exploring the relative influences of transport disadvantage and social exclusion on well-being. *Transport Policy*, 18(4), 555–562. <https://doi.org/10.1016/j.tranpol.2011.01.011>
- Lovejoy, K., & Handy, S. (2011). Social networks as a source of private-vehicle transportation: The practice of getting rides and borrowing vehicles among Mexican immigrants in California. *Transportation Research Part A: Policy and Practice*, 45(4), 248–257. <https://doi.org/10.1016/j.tra.2011.01.007>
- Mitra, S. K., & Saphores, J.-D. M. (2020). How do they get by without cars? An analysis of travel characteristics of carless households in California. *Transportation*, 47(6), 2837–2858. <https://doi.org/10.1007/s11116-019-09994-6>
- Morris, E. A., Blumenberg, E., & Guerra, E. (2020). Does lacking a car put the brakes on activity participation? Private vehicle access and access to opportunities among low-income adults. *Transportation Research Part A: Policy and Practice*, 136, 375–397. <https://doi.org/10.1016/j.tra.2020.03.021>

Key Words: Mobility justice, Car access, Rural areas

FEASIBILITY OF BIKESHARE ON A UNIVERSITY CAMPUS: INSIGHTS FROM WESTFIELD STATE UNIVERSITY

Abstract ID: 1291

Individual Paper Submission

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Bicycling, a non-motorized and sustainable urban transportation option, is expected to see increased use in a post-pandemic world (Beuhler and Pucher 2021; Chardon 2019; Mason et. al. 2015). Bikeshare programs, which provide bikes to the public for short-term use with a time-based charge, allow public access to bicycling. They offer communities and users alike a flexible mobility option that can have positive impacts on public health, air quality, traffic congestion, and increased access to other transportation options (Mason et. al. 2015). Bikeshare programs have become popular and have spread across North America and a few of these programs exist on university campuses, albeit with mixed results. Bikeshare has the potential to succeed at universities given the concentration of people, and could address the challenges of moving people across campus efficiently and alleviate parking and other transportation problems. Some researchers have investigated feasibility and barriers to bikeshare on campuses (Agarwal and North 2012; Kellstedt et. al. 2019), but more research is needed.

This study examines the feasibility of a bikeshare program at Westfield State University in Westfield, Massachusetts to extend this understanding. It reports the insights from a survey that was used to collect the perception, preference, and interest for bike share amongst students, faculty, and staff. Out of 729 respondents, 475 (65%) stated that they will use bikeshare if it were available, citing increased mobility, exercise, and time savings over other options. Safety concerns and means of payment came up most often as concerns. This indicates that while there is demand for and interest in bikeshare, the aforementioned concerns should be addressed by bikeshare providers to ensure success. Findings from the study can inform such providers and university decision makers, as well as researchers and practitioners with interest in the subject, providing them with yet another opportunity to understand the possibilities and challenges to bikeshare on a university campus.

Citations

- Agarwal, A. and North, A. (2012). Encouraging Bicycling among University Students: Lessons from Queen's University, Kingston, Ontario, Canadian Journal of Urban Research. Vol. 21, No. 1 pp. 151-168
- Buehler, R. and Pucher, J. (2021). COVID-19 Impacts on Cycling, 2019–2020, Transport Reviews, 41:4, 393-400, DOI: 10.1080/01441647.2021.1914900
- Kellstedt, D., Spengler, J. Bradley, K., Maddock, J. (2019). Evaluation of free-floating bike-share on a university campus using a multi-method approach, Preventive Medicine Reports, Vol 16, 100981
- Mason, J. Fulton, L. and McDonald, Z. (2015). A Global High Shift Cycling Scenario: The Potential for Dramatically Increasing Bicycle and E-bike Use in Cities around the World, with Estimated Energy, CO₂, and Cost Impacts. Institute for Transportation & Development Policy and the University of California, Davis. Web address <https://www.itdp.org/2015/11/12/a-global-high-shift-cycling-scenario/> Accessed March 2022
- Medard de Chardon, C. (2019). The contradictions of bike-share benefits, purposes and outcomes. Transportation Research Part A: Policy and Practice. 121. 401-419. 10.1016/j.tra.2019.01.031.

Key Words: Bike share, university campus, bicycling

HOW BUSES ALLEVIATE UNEMPLOYMENT AND POVERTY: LESSONS FROM A NATURAL EXPERIMENT IN CLAYTON, GA.

Abstract ID: 1300

Individual Paper Submission

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Lack of access to jobs, and the subsequent unemployment or underemployment, can be a major driver of urban and suburban poverty. In most American cities, public transit has a much smaller mode share than automobiles in commuting. Nevertheless, those who ride transit to work are disproportionately minority, lower-paid workers who are more susceptible to poverty and unemployment. Access to public transportation (or lack thereof), therefore, could have an important role in expanding access to jobs and alleviating poverty (Sanchez, 2008).

The importance of public transportation for disadvantaged riders has been further demonstrated during the COVID-19 pandemic, when white, higher-income riders avoid traveling by transit, and Black, Hispanic, and low-income riders made up an even greater share of the remaining transit ridership. The suspension, reduction, and disruption of transit services many cities experienced during the pandemic have had a disproportionate impact on these transit

dependent riders. In Atlanta, for example, the Metropolitan Atlanta Rapid Transit Authority (MARTA) suspended 70 of its 110 bus routes from April 2020 through April 2021 as part of its initial pandemic response and then substantially reduced service frequency since December 2021 due to staffing shortages. These service cuts leave many neighborhoods without bus access and aggravate the transportation barriers facing disadvantaged individuals.

Many studies have explored the linkage between public transportation and economic outcomes (Pasha et al., 2020; Sanchez, 1999; 2008; Sari, 2015), though few examined the impacts of losing existing transit services on unemployment and poverty. The COVID-19 pandemic and its devastating social, economic, and public health impacts on vulnerable communities call for better understanding of, and policy strategies for, the implications of disruptions in various essential services, including public transportation. Evaluating the economic impacts of transit disruptions during the pandemic or similar disasters, however, can be methodologically challenging due to the numerous confounding factors also caused by or related to the disaster itself.

This study tackles this problem using a natural experiment in Clayton, a suburban county in Georgia bordering the City of Atlanta. The county's local bus services were terminated in 2010 and reinstated in 2015, allowing us to evaluate the impacts of losing bus access by comparing affected census tracts with adjacent neighborhoods that did not experience similar disruptions in transit services. Using a difference-in-difference approach, we find that the termination of bus services in the five-year period was associated with significant increases in poverty and unemployment rates in affected areas. Our findings suggest both the spatial mismatch hypothesis, which predicts the reduction in transit access can lead to reductions in job accessibility and employment, and the residential sorting hypothesis, which states that poor households gravitate toward neighborhoods with better transit access, could be at play. Overall, disruptions in bus transit could have significant adverse impacts on neighborhood economic outcomes. In the face of the COVID-19 pandemic, more effort is needed to provide alternative transportation and poverty relief for vulnerable communities affected by transit disruptions and service cuts.

Citations

- Pasha O, Wyczalkowski C, Sohrabian D, et al. (2020) Transit effects on poverty, employment, and rent in Cuyahoga County, Ohio. *Transport Policy* 88: 33-41.
- Pathak R, Wyczalkowski CK and Huang X (2017) Public transit access and the changing spatial distribution of poverty. *Regional Science and Urban Economics* 66: 198-212.
- Sanchez TW (1999) The connection between public transit and employment: The cases of Portland and Atlanta. *Journal of the American Planning Association* 65(3): 284-296.
- Tyndall J (2017) Waiting for the R train: Public transportation and employment. *Urban Studies* 54(2): 520-537.
- Sari F (2015) Public transit and labor market outcomes: Analysis of the connections in the French agglomeration of Bordeaux. *Transportation Research Part A: Policy and Practice* 78: 231-251.

Key Words: Public transportation, bus transit, poverty, unemployment, neighborhood change

A FOCUS GROUP STUDY OF THE IMPACT OF COVID-19 ON ESSENTIAL WORKERS' COMMUTE

Abstract ID: 1314

Individual Paper Submission

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The COVID-19 pandemic severely disrupted public transit services, which provided, and will continue to provide, a critical lifeline for many essential workers. As more and more institutions start to resume their in-person operations, it is necessary to understand how the pandemic affected essential workers' commute and what it will take to ensure an effective and equitable recovery of transportation services. Such knowledge will also be essential for achieving the long-term resilience of urban transportation systems. Because survey-based studies often failed to capture the nuances in essential workers' changing commuting challenges and perceptions and the complicated mechanisms for travel behavioral adaptations, in the summer of 2021, we conducted semi-structured focus group discussions with 21 essential workers who are employees of the University of Washington. The discussion questions were designed to examine the reasons for and effects of essential workers' commute mode shifts during the pandemic and explore promising approaches for post-pandemic recovery of public transportation. We used NVivo 12 Pro to conduct a thematic analysis of the transcribed data and examined patterns of commute mode change with respect to participants' attributes, including job type, home location, and gender. The thematic analysis identified 16 themes structured into three main periods: pre-pandemic, pandemic, and post-pandemic. The themes helped gain important

insights into the challenges, benefits, and contributing factors associated with different commute mode choices before and during the pandemic and revealed characteristics of post-pandemic commute expectations and desirable travel demand management policies.

The results showed that most participants commuted by transit before the pandemic because of its accessibility, affordability and enhanced value of travel time. At the beginning of the pandemic, however, most participants switched away from transit, and the majority drove alone to work, mainly because public transportation made them feel unsafe from pandemic infections and transit services became less frequent and unreliable. In the meantime, most participants found driving more advantageous, especially with subsidized parking which made this faster and safer alternative also affordable. Most participants indicated that price would be the main determining factor in their post-pandemic commute mode choice. They believed that providing frequent transit service, complemented by reliable transit information through smartphone apps and a free or heavily subsidized transit pass, would be sufficient to recover transit demand in the post-pandemic period. Future research should look into actual changes in post-pandemic commute and transit ridership and develop innovative transit services and TDM policies to safeguard transportation equity for essential workers during both normal times and major crises.

Citations

- Ashour, L., Dannenberg, A., Shen, Q., Fang, X. and Wang, Y., 2021. Paratransit services for people with disabilities in the Seattle region during the COVID-19 pandemic: Lessons for recovery planning. *Journal of Transport & Health*, 22, p.101115.
- McCahill, C., 2022. Transit is Essential for Essential Workers. [online] State Smart Transportation Initiative. Available at: [Accessed 4 April 2022].
- Wang, Y., Shen, Q., Abu Ashour, L. and Dannenberg, A., 2022. Ensuring equitable transportation for the disadvantaged: Paratransit usage by persons with disabilities during the COVID-19 pandemic. *Transportation Research Part A: Policy and Practice*, 159, pp.84-95.

Key Words: Essential workers, COVID-19 pandemic, Commute, Public transit, Post-pandemic commute

THE DEMOGRAPHICS AND CONTRIBUTING FACTORS OF CAR CRASHES DURING THE ILLINOIS STAY AT HOME ORDER OF 2020

Abstract ID: 1319

Individual Paper Submission

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The 2020 COVID-19 public health emergency and subsequent stay at home orders upended the transportation behavior of travelers across all modes. Among motorists, those who ventured out were more likely to be injured in a crash while under stay at home orders than when compared to the previously prevailing conditions, despite a significant reduction in traffic (Liao & Lowry, 2021; Doucette et al., 2021). Several contributing factors for the increase in vehicular violence have been put forth and studied, chief among them is the perception that decreased traffic congestion induced widespread speeding (Lee et al., 2020). Yet this study finds other factors may have been at work contributing to the unprecedented rise in motor vehicle crash injuries. For example, during the Illinois stay at home order of 2020 there was a 2.4 fold increase in the proportion of personal injury crashes involving an impaired driver when compared to the previous four years. In another display of increased risky behavior by motorists, the proportion of unprotected travelers (no seatbelt, no child restraint, or un-helmeted motorcyclist) increased by a factor of 1.5 when compared to the previous four years. Yet the incidence of crash injuries were not evenly distributed across all communities. The average poverty rate of the home zip code of injured motorists increased by a factor of 1.4 to nearly 15% when compared to the previous four years; implying members of impoverished communities were more likely to get injured in crashes during the Illinois stay at home order. Motorists not only got injured at a higher rate in 2020, they also got more severely injured. The proportion of serious injuries among Black motorists increased by nearly 26%, while the increase among Whites was roughly half that much. The increase in serious injuries also correlates with 43% increase in hospital charges compared to the previous four years. Still, findings suggest gender may be a better predictor than race of who was injured in a motor vehicle crash. Results imply both Black and White women fared better than their male counterparts during Illinois' stay at home order, with White women experiencing an 8% drop in crash injuries – the best overall. While Black and White males fared worse with a 5% and 8% increase in crash injuries, respectively.

The stay at home orders of 2020 laid the groundwork for the greatest natural experiment in a generation and provides for a tragic yet remarkable tranche of transportation behavior data. This paper draws upon that natural experiment through uncommon access to five years of crash and hospital data from Illinois' Departments of Transportation and Public Health. We ask and answer: what were the significant contributing factors to the increase in crashes and injuries in 2020, and who was most affected? Advanced data linkage methodology and software are used along with difference-in-differences statistical methods and logistic regression to conduct analyses and reach conclusions.

Findings have implications for policy and rulemaking under public emergency impositions, road safety interventions, identification of at-risk communities, and the allocation of public funds for mitigation efforts.

Citations

- Doucette, Mitchell L, Andrew Tucker, Marisa E Auguste, Amy Watkins, Christa Green, Flavia E Pereira, Kevin T Borup, David Shapiro, and Garry Lapidus. 2021. "Initial Impact of COVID-19's Stay-at-Home Order on Motor Vehicle Traffic and Crash Patterns in Connecticut: An Interrupted Time Series Analysis." *Injury Prevention* 27 (1): 3–9. <https://doi.org/10.1136/injuryprev-2020-043945>.
- Liao, Haifeng (Felix), and Michael Lowry. 2021. "Urban Road Safety and Crash Severity during the 2020 COVID-19 Pandemic: The Case of Seattle, WA." *Findings*, December. <https://doi.org/10.32866/001c.30007>.
- Lee, Jinhyung, Adam Porr, and Harvey Miller. 2020. "Evidence of Increased Vehicle Speeding in Ohio's Major Cities during the COVID-19 Pandemic." *Findings*, June. <https://doi.org/10.32866/001c.12988>.

Key Words: COVID-19, Motor Vehicle Crash Injuries, Transportation Equity, Contributing Crash Factors

DIFFERENT CHARACTERISTICS OF BUS AND SUBWAY RIDERSHIP IN CALIFORNIA – LINKS BETWEEN RACE, INCOME, WORK STATUS, AND WALKABILITY

Abstract ID: 1324

Individual Paper Submission

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Despite the massive subsidy on public transit to reduce the adverse outcomes of auto-dependency and improve equitable mobility, per-capita transit use remains constant (Taylor, Miller, Iseki, & Fink, 2009). Many scholars focus on the determinants of transit ridership. Various factors can influence transit ridership, such as fares, level of service, station accessibility, and safety. Specifically, previous studies found that public transit use is significantly influenced by socioeconomic factors, such as car ownership, incomes, and population densities (Buehler & Pucher, 2012). The characteristics of subway commuters are different from those of bus commuters (Lee, Wohar, & Uhm, 2016). Walkability is highly associated with public transit use (Barnes, Winters, Ste-Marie, McKay, & Ashe, 2016). These factors are so correlated that the relationships between these factors are less well understood (Taylor & Fink, 2013). Within this consideration, this study explores the difference in transit ridership of buses and subways, focusing on race, income, car ownership, work status, and walkability.

This study uses the California add-on survey of the 2017 National Household Travel Survey (NHTS) and Smart Location Database Version 3.0. These data sets provide extensive information on socioeconomic factors, travel patterns, transit availability, and home locations of the residents in the US, as well as the walkability index of a census block group. The final analysis sample consists of 11,018 individuals aged over 18. The respondents in the original data set are excluded if they live in areas where public transit is not available by using the Geographic Information System (GIS). The walkability index of the Smart Location Database is combined with the individual-level data of NHTS with a GIS function of spatial join. After that, the present study uses a multilevel mixed-effects logistic regression. Specifically, a three-level random-intercept model is used with a household nested within metropolitan statistical areas (sampling strata). The dependent variables are bus and subway usage, and the independent variables consist of two groups: 1) socioeconomic factors and walkability, and 2) various interaction terms between car ownership, household income, and work status.

The multilevel logistic regression models show that the random effects of households are statistically significant ($p < 0.001$). In the first estimation model analyzing the bus usage, the African American has higher odds of using buses than the white race. The respondents with lower household incomes have higher odds of using buses. Higher walkability is positively associated with bus usage. Interestingly, work status is not associated with bus usage, and the relationship between household vehicle ownership and bus usage depends on household income. In the second estimation model analyzing the subway usage, race, household income, and walkability are not statistically significant, unlike bus usage ($p > 0.1$). In addition, respondents who have jobs have higher odds of using subways. These multilevel regression models reveal that household characteristics significantly influence individuals' transit use, and the characteristics of bus users substantially differ from those of subway users. The bus may be the last resort for the mobility of marginalized socioeconomic groups, and the subway may be optional mobility means for commuting in the US. What makes the significant difference in bus and subway ridership? Public transit scholars need to further explore the underlying factors that create such differences. A deeper understanding of the discrepancy will help establish more effective programs for increasing public transit use.

Citations

- Barnes, R., Winters, M., Ste-Marie, N., McKay, H., & Ashe, M. C. (2016). Age and retirement status differences in associations between the built environment and active travel behaviour. *Journal of Transport & Health*, 3(4), 513-522.
- Buehler, R., & Pucher, J. (2012). Demand for public transport in Germany and the USA: an analysis of rider characteristics. *Transport Reviews*, 32(5), 541-567.
- Lee, B. S., Wohar, M. E., & Uhm, D. (2016). Bus commuting, subway commuting, and walking to workplaces in US cities: Socioeconomic factors of transit commuters. *International Journal of Sustainable Transportation*, 10(9), 861-880.
- Taylor, B. D., & Fink, C. N. (2013). Explaining transit ridership: What has the evidence shown? *Transportation Letters*, 5(1), 15-26.
- Taylor, B. D., Miller, D., Iseki, H., & Fink, C. (2009). Nature and/or nurture? Analyzing the determinants of transit ridership across US urbanized areas. *Transportation Research Part A: Policy and Practice*, 43(1), 60-77.

Key Words: Bus, Subway, Equitable mobility, National Household Travel Survey

TRANSIT USE DURING THE COVID-19 PANDEMIC: EVIDENCE FROM NJ, DALLAS, TEXAS, AND BOSTON, MASSACHUSETTS METROPOLITAN AREAS

Abstract ID: 1338

Individual Paper Submission

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The COVID-19 pandemic has significantly reduced transit ridership in the past two years (Transit App and APTA, 2020). Reduced ridership has led to reduced revenue. Reduced revenue and increased operation costs have combined to make transit service less accessible. Examining transit mode choice behaviors during the pandemic can provide insights on how to effectively regain transit ridership to help restore the system. This study aims to answer three critical questions related to transit mode choice behavior: (1) how has transit mode choice changed among different types of transit riders? (2) what key factors are associated with the mode choice change? and (3) what are the top reasons for reducing/stopping using transit?

To address the above research questions, we designed an online survey, which was administered by Qualtrics online panel (February 2021- to May 2021) to collect 1,173 representative responses from three study areas, i.e., New Jersey, Dallas TX, and Boston metropolitan areas. The three study areas have dramatically different types of existing transit infrastructure and travel culture. The survey targets transit riders before and during the pandemic. The collected samples have representative age and gender distributions and slightly biased income (skewed towards lower income population) and race distributions (under sampled Hispanic population, likely because the survey is English only). Overall, the survey results show the number of active transit riders declined significantly during the pandemic across the three study areas. Among all regions, NJ metropolitan area witnessed the most significant decline (43%), followed by Boston metro (39%) and Dallas metro (34%). For riders who stopped or decreased using transit services, the top reported reasons were “I no longer feel necessary to make the trip” and “I no longer feel comfortable sharing space with strangers”.

In the survey, we also asked respondents to recall a typical transit trip before the pandemic to understand changes in transit mode choices behavior during the pandemic. For the particular trip, the survey collects trip characteristics, such as trip length, trip purpose, fare, specific transit modes, and access modes. In addition, we also collected riders' socioeconomic and demographic attributes and attitudinal questions towards the pandemic and COVID-19 vaccinations. Finally, we asked respondents to make discrete choices based on various scenarios, such as population vaccination level or changes in fares. We found that the decline in transit use is not evenly distributed among various transit modes. For all regions, the decline is the most significant for light rail, subways, and express trains, likely because most of these riders could work from home during the pandemic. Meanwhile, the demand for local city bus systems and paratransit systems declined less, likely because travel demands for these riders are less flexible when compared with other transit riders. Additionally, we developed discrete choice models to understand the correlation between transit mode choice behaviors and key trip attributes, socioeconomic, and attitudinal variables. Preliminary results show that high-income and transit-dependent (e.g., disabled and those without vehicle ownership) riders were more likely to stop using transit during the pandemic. The decision to ride transit again is also sensitive to the overall population vaccination rates, changes in service schedule (e.g., start and ending time and frequency). This finding is also consistent with results from a recent national survey (He et al., 2022). This study highlights the heterogeneity in the change of transit mode choices during the pandemic; low-income and transit dependent riders are more seriously affected by the decline in services. The results also suggest that riders are not sensitive to COVID-management strategies (e.g., air filtering changes, social distancing) and more sensitive to vaccination rates and service frequency.

Citations

- He, Q., Rowangould, D., Karner, A., Palm, M., & LaRue, S. (2022). Covid-19 pandemic impacts on essential transit riders: Findings from a U.S. Survey. *Transportation Research Part D: Transport and Environment*, 105, 103217. <https://doi.org/10.1016/j.trd.2022.103217>
- Transit App and APTA (2020) Transit App, APTA, APTA - Ridership Trends, American Public Transit Association, Accessed at www.transitapp.com/APTA
- Palm, M., Allen, J., Liu, B., Zhang, Y., Widener, M., & Farber, S. (2021). Riders Who Avoided Public Transit During COVID-19: Personal Burdens and Implications for Social Equity. *Journal of the American Planning Association*, 1–15. <https://doi.org/10.1080/01944363.2021.1886974>

Key Words: transit, mode choice, COVID-19

EVALUATING THE EFFECTIVENESS OF URBAN SPEED CAMERAS IN A PERIOD OF DRAMATIC TRAFFIC CHANGE

Abstract ID: 1352

Individual Paper Submission

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Speed cameras were installed along segments of Roosevelt Boulevard in June 2020. Two years earlier, the Pennsylvania legislature had approved the camera installation in light of high fatality rates and requests from City officials. In the previous 5 years, the Boulevard had accounted for 14% of the City of Philadelphia's total traffic fatalities. The twelve-lane at grade highway frequently makes lists of the most dangerous intersections and roadways in the country, a particularly egregious statistics since Philadelphia has only about half the national traffic fatality rate. Just three months earlier, Covid-19-related shutdowns dramatically influenced the geography of travel and traffic safety. Collision rates and traffic fatalities skyrocketed throughout the city, likely a result of a combination of decreased congestion, increased drunk driving, and decreased traffic enforcement in the wake of protests against the murder of George Floyd and for police reform.

This paper examines the effectiveness of the Roosevelt Boulevard using a differences-in-differences approach with a negative binomial estimator. Selection of control segments is of utmost importance given the dramatic changes in crashes and fatalities over the time period of study, using PennDOT reported collision data from 2018 through 2020 and preliminary Police Department data on fatalities from 2018 to 2021, we find generally consistent magnitudes of reduction across a variety of controls. Compared to the rest of Philadelphia, other untreated segments of Roosevelt Boulevard, and other major arterials, we find a 30% to 50% reduction in reported crashes and traffic fatalities. Despite the short timeframe (just 6 months of data after camera installation), the difference in report collisions is statistically different from zero with a high degree of confidence. The decrease in traffic fatalities would occur randomly about 1 in 7 times generating random study and will require additional years of data to confirm. Our best current estimate is that the speed cameras prevented 200 reported collisions over 7 months and 8 traffic fatalities over 19 months. The PennDOT estimated economic cost of such crashes over a year is approximately \$55 million, substantially higher than the roughly \$20 million in revenues generated by the speed cameras. We recommend the continuation of the Boulevard speed cameras, the increased use of speed cameras throughout the state, and a liberalizing of state laws that prevent municipalities from deploying automated speed enforcement without state legislation.

Citations

- Tay, Richard. 2010. "Speed Cameras Improving Safety or Raising Revenue?" *Journal of Transport Economics and Policy (JTEP)* 44 (2): 247–57.
- Soole, David W., Barry C. Watson, and Judy J. Fleiter. 2013. "Effects of Average Speed Enforcement on Speed Compliance and Crashes: A Review of the Literature." *Accident Analysis & Prevention* 54 (May): 46–56. <https://doi.org/10.1016/j.aap.2013.01.018>.
- Rodier, Caroline J., Susan Shaheen, and Ellen Cavanagh. 2007. "Automated Speed Enforcement for California: A Review of Legal and Institutional Issues," September. <https://escholarship.org/uc/item/4hv9204h>.

Key Words: automated traffic enforcement, speed cameras, Roosevelt boulevard, Philadelphia

THE CLEAR ZONE ABROAD: AN INTERNATIONAL COMPARISON OF ROADSIDE TREE POLICY

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In this study, we compare the roadside tree policies of four countries: the United States, Germany, Sweden, and the United Kingdom.

In the United States, roadside design guidelines require a “clear zone” adjacent to the roadbed, kept clear of fixed objects such as trees. In practice since the 1960s, the clear zone is often designed as a 30-foot dimension. Some state highway agencies have begun clearing trees across the entire right-of-way, hundreds of feet from the roadbed, using the clear zone and roadside safety as justification (Hurt, 2018). Despite the widespread use of the clear zone, traffic fatalities resulting from collisions with trees account for about 10% of annual traffic fatalities in the United States. Tree removal alone does not eliminate roadside crash risk, and these practices ignore other causes of tree crashes, such as excessive speed and intoxication (Wolf and Bratton, 2006). Despite this mixed record, large-scale roadside tree removal is becoming more common across the United States.

Other countries preserve their roadside trees, prioritizing environmental values, scenic quality, and other functions of the roadside over the perceived safety of a clear roadside (Antonson, 2014). Yet many have far lower traffic fatality rates than the US, which ranks 64th worldwide, with 12.4 fatalities per 100,000 population (WHO, 2020).

In this research, we ask: how does US roadside tree policy compare to that of other countries? How do other countries use policy and design guidelines to balance traffic safety and roadside tree management?

We selected countries that meet the following criteria: robust environmental laws, very low traffic fatality rate (lowest 20 worldwide), variation in road contexts (urban and rural roads), similar motorization rate to the United States, and history of transport systems comparison with the United States. The resulting list—Germany, Sweden, and the United Kingdom—are all in Europe, which has the most countries with low traffic fatality rates and a variety of similar contexts to the United States. For instance, Hong Kong and Singapore both have very low fatality rates, but have few roads that would compare with the United States’ rural highways.

To investigate roadside design policy in these countries, we take a two-pronged approach. We first review roadside design guidance, roadside tree protections, and environmental planning regulations relating to transportation. Next, we interview practitioners. Using a semi-structured interview protocol, we interview a mix of scholars and practitioners (<5) in each country. The goals of these interviews are to clarify any issues from the document review; understand the policy and implementation context of the documents, and gather historical data on how and why the policies were developed.

Results are intended to illuminate alternative approaches to large-scale tree removal with a stated goal of improved road safety. For example, the German state of Mecklenburg reduced tree collision fatalities by 75% between 1991 and 2007 using multiple approaches, including speed reduction and measures to reduce risk exposure (Pradines, 2012). Findings can be utilized by both state highway agencies and the Federal Highway Administration, which is currently updating its roadside tree management guidance and best practices for training and distribution to state highway agencies.

For the wider transportation planning context, results are anticipated to contribute to the current reckoning with and reevaluation of historical engineering practices in the field.

Citations

- Antonson, H., Ahlström, C., Mårdh, S., Blomqvist, G., & Wiklund, M. (2014). Landscape heritage objects’ effect on driving: A combined driving simulator and questionnaire study. *Accident Analysis & Prevention*, 62, 168–177.
- Hurt, E. (2018, July 5). “Georgia DOT’s Tree Clearing Project Draws Skepticism, Complaints.” WABE. <https://www.wabe.org/georgia-dots-tree-clearing-project-draws-skepticism-complaints/>
- Pradines, C. (2012). “Road infrastructures: tree avenues in the landscape.” *Landscape Facets: Reflections and Proposals for the European Landscape Convention*. Council of Europe Publishing, Strasbourg.
- Wolf, K. and Bratton, N. “Urban Trees and Traffic Safety: Considering US Roadside Policy and Crash Data.” *Arboriculture and Urban Forestry*. 32(4): 170-179.
- World Health Organization “Road Traffic Deaths. Data by Country.” Updated June 2020. <https://apps.who.int/gho/data/node.main.A997>. Accessed February 2021.

Key Words: trees, environmental impacts, transportation policy, international

ACCESSIBLE TAXI TRAVEL EXPERIENCES OF INDIVIDUALS LIVING WITH DISABILITY IN TORONTO, CANADA

Abstract ID: 1355

Individual Paper Submission

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Having reliable access to transport is crucial to people's abilities to participate in everyday activities, engage in diverse and meaningful events, and to enjoy their quality of life. Unfortunately, some individuals with disabilities continue to encounter marginalizing barriers across transport modes, including accessible taxi services. While the literature identifies an array of transport-related barriers and offers various insights into how people with disabilities experience different transport modes, remarkably little scholarly attention has been given to understanding how they use and experience accessible taxis. This is troubling given that accessible taxis are integral to many paratransit services that are relied upon by some people with disabilities. For example, in Canada, paratransit agencies such as the Toronto Transit Commission's (TTC) Wheel-Trans agency contract out subsidized trips to accessible taxi service providers as part of their service. In this paper, we present qualitative findings from a study focused on understanding how individuals with disabilities experience accessible taxi services in Toronto, Canada. The study was guided by the research question, "what issues are people with disabilities experiencing when using accessible taxis?"

Study findings are based on an analysis of 590 customer complaint reports and 494 incident reports that a local accessible taxi brokerage provided to the research team. The reports emerged from trips that occurred between January 2014 and June 2021. Report contents were analyzed and thematically coded (Braun & Clarke, 2006) using NVivo 12 Pro. To unpack customers' embodied experiences of disability, a critical disability studies perspective anchored by phenomenological (Titchkosky, 2011) and critical ableism studies (CAS) (Goodley, 2014) was adopted. The use of phenomenological and CAS perspectives in our analyses of customer complaints and incidents data helped with uncovering the various dimensions and nuances of navigating transport barriers and the ways in which ableism normalizes such barriers and allows them to persist.

Findings suggest that the most prominent challenges encountered by customers using accessible taxi services include dealing with service quality issues (e.g., lacking communications between drivers and customers, inadequate assistance during transitions), safety fears (e.g., unsafe driving, improper securement of mobility devices), and overcoming difficulties with taxi service operations (e.g., inflexible trip modification policies, unexpected ride sharing). Informed by the accessibility and equity issues experienced by accessible taxi customers, we identify several recommendations for accessible taxi service providers, including but not limited to door-to-door service training, improvements to customer intake processes, and driver sensitivity training.

This study's contributions to planning scholarship are three-fold. First, it addresses the disconcerting knowledge gap concerning how people with disabilities use and experience accessible taxi services (Young & Farber, 2020) by providing fine-grained knowledge about the lived experiences and challenges encountered by customers living with disability. Secondly, this research will assist accessible taxi service providers in developing a policy dialogue aimed at advancing safer and more inclusive services for people with disabilities (Lister & Dhunpath, 2016). Finally, given that accessible taxi services play a key role in the provision of paratransit services and thus enabling transport and mobility for people with disabilities, this research will help municipal/regional paratransit agencies to identify issues and question what they require of accessible taxi service providers. In broader terms, this research prompts questions about normalized ableism within a transport service that is aimed toward serving people with disabilities and thus encourages transport planning scholars and practitioners to question the obscured presence of ableism in their work and the service designs for different transport modes. The paper encourages transport planning scholars and practitioners to meaningfully engage individuals with disabilities in the planning, design, and evaluation of accessible taxi and paratransit services.

Citations

- Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Goodley, D. (2014). *Dis/Ability Studies: Theorising Disablism and Ableism*. London: UK: Routledge.
- Lister, H.E., & Dhunpath, R. (2016). The Taxi Industry and Transportation for People with Disabilities: Implications for Universal Access in a Metropolitan Municipality. *Transformation: Critical Perspectives on Southern Africa*, 90, 28-48.
- Titchkosky, T. (2011). *The Question of Access: Disability, Space, Meaning*. University of Toronto Press, Toronto.
- Young, M., & Farber, S. (2020). Using Wait-Times Thresholds to Improve Mobility: The Case of UberWAV Services in Toronto. *Transport Findings*.

CAN HIGH-SPEED RAIL FACILITATE SUSTAINABLE URBAN LAND USE?

Abstract ID: 1356

Individual Paper Submission

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The integration of transportation infrastructure development with the land towards a diversified and intensified use has become a practical approach to improving land use efficiency while achieving sustainability. As a rapidly growing sector in China, transportation has been extensively promoted in terms of productivity and efficiency driven by policy support and technology innovations. In particular, high-speed rail (HSR), as an efficient surface transportation mode, has generated significant cohesion in urban land use through enhancing spatial connections and substitution in travel behavior in short and medium trips. Given China's dual land ownership system, which urban land is owned by the state while rural land is owned by farmer collectives, the free flow of population remains limited between regions and between urban and rural areas despite rapid urbanization because of the economic growth model, which is enabled by land finance and land financialisation, incentivize local governments to emphasis on the investment in urban land while relatively ignoring migrations' needs in public goods and services. HSR, as a mediator, has accelerated the process of urbanization through suburban development leveraged by building new HSR stations, housing prices appreciation spillover through accommodating growing population, which as a result, widen the urban-rural gap of GDP per capita between regions instead of promoting convergence of inter-regional economic development.

As an essential aspect of land use sustainable development, compact, contiguous and connected urban land use contributes to reducing energy consumption and emission. How mega transportation system like HSR can facilitate sustainable land use through population mobility between regions and between urban and rural areas remains unexamined in literature, since HSR's impact on land use in terms of accessibility at different scales have been more discussed than the sense of supply and demand. To fill the research gap, this study innovatively adopts scenarios analysis to test the hypothesis, that is, if the land use quota can follow the population flow and freely convert from rural to urban mediated by HSR, then a population density-driven land use demand, which the land use quota from the population outflow area will decrease with the inflow area will increase, may alleviate the distortions in practice between the unbalanced land supply and demand. This research is motivated by the policy framework Opinions on Improving the Systems and Mechanisms for Market-based Allocation of Factors of Production, issued by the State Council in 2020. For the factor of land, the establishment and improvement of an integrated urban and rural land use market are highlighted. Hence, this research argues that with quota transfer together with free population flow, inefficient land development in population outflow areas would be moderated if local fiscal revenue could be funded through quota transfer and re-fill into cities needed together with free population flow.

The study will examine the following two research questions using the two-stage least squares (2SLS) method and panel data consisting of the city-level land transaction and rural-urban population flow information for 2013 – 2019. Firstly, to what extent the urban sprawl financed by land development through HSR's construction in different cities may influence the population flow from rural to urban. Secondly, whether the expansive urban land development and land transaction price would be moderated by supplementing the land quota infilled by migrant farmers. The study will help understand HSR's positive impact on land use redistribution empowered by free population flow between rural and urban. The research finding will provide planning implications for the pro-equity development in urban land use practice and policy.

Citations

- Chen, Z., & Haynes, K. E. (2015). Impact of high speed rail on housing values: An observation from the Beijing-Shanghai line. *Journal of Transport Geography*, 43, 91–100.
- Chen, Z., & Haynes, K. E. (2017). Impact of high-speed rail on regional economic disparity in China. *Journal of Transport Geography*, 65, 80–91.
- Chen, Z., Zhou, Y., & Haynes, K. E. (2020). Change in land use structure in urban China: Does the development of high-speed rail make a difference. *Land Use Policy*, 104962.
- Li, X., Huang, B., Li, R., & Zhang, Y. (2016). Exploring the impact of high speed railways on the spatial redistribution of economic activities-Yangtze River Delta urban agglomeration as a case study. *Journal of Transport Geography*, 57, 194–206.
- LeSage, J. P. (2014). What regional scientists need to know about spatial econometrics. Available at SSRN 2420725.

Key Words: high-speed rail, land use quota, sustainability, spatial econometrics, population mobility

IS PUBLIC TRANSIT RECOVERING FROM COVID-19? EARLY EVIDENCE FROM A SAMPLE OF CANADIANS

Abstract ID: 1371

Individual Paper Submission

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The COVID-19 pandemic has had a profound impact on the daily lives of Canadians. A direct consequence of the public health measures imposed was a rapid decline public transit ridership (Dachis and Godin, 2021). Today, as Canada's pandemic response shifts toward "learning to live with the virus," questions about the future of public transit remain, especially whether it will recover to pre-pandemic levels. The answer to this depends on three underlying questions. Who will use the service? How much will it be used? What purposes will it be used for?

While several studies have been published concerning the impact of COVID-19 on public transit, none have sought to address the issue of whether public transit ridership will recover, and consequently the questions posed above. The studies are largely of an aggregate nature focusing on collective behavior – ridership decline during the pandemic. For example, Liu et al. (2020) modeled daily ridership decline for 113 county-level transit systems in the United States. Qi et al. (In Press) modeled year-on-year monthly ridership reduction rates for 20 metropolitan regions in the United States. The authors conclude by stating that a limitation of their study is that the data were collected at an aggregate metropolitan level, making it difficult to understand the impacts of socioeconomic factors on ridership, and that disaggregated data need to be collected to examine such factors.

This study is among the first to address the issue of whether public transit ridership is on track to recover to pre-pandemic levels. The study uses data from the Future Mobility in Canada survey, which was administered in October and November 2021 to Canadians between the ages of 18 and 75 residing in six major metropolitan regions. The survey collected information on weekly public transit usage frequency (ordinal variable) by purpose both before the pandemic and at the time the survey was completed. October and November 2021 was characterized as a period of "opening up" prior to detecting the first cases of the Omicron variant in late November. As such, comparing public transit usage using the survey data offers important insights into its recovery.

The survey also includes information on respondents' individual and household characteristics, residential location, workplace location for those who work, telework practices over time for workers, mobility tools, travel behavior attitudes, and travel behavior by mode. Following a descriptive analysis of the data, bivariate ordered probit models are estimated separately for workers and non-workers by trip purpose. Through the descriptive and inferential analyses, the three questions posed above are answered. In turn, the findings from this study offer valuable insights into the future of public transit in Canada and how its recovery may differ geographically across the country given the inherent differences of metropolitan regions (Simeus-Kabo et al., 2021). These findings will be of interest to both academics and practitioners alike who seek to understand the evolution of mobility in a post-COVID-19 world, and how policy can guide successful outcomes.

Citations

- Dachis, B. and Godin, R. (2021). Trains, Lanes and Automobiles: The Effect of COVID-19 on the Future of Public Transit. Commentary 598. Toronto: C.D. Howe Institute.
- Liu, L., Miller, H.J., and Scheff, J. (2020). The impacts of COVID-19 pandemic on public transit demand in the United States. PLOS ONE, 15(11): e0242476. <https://doi.org/10.1371/journal.pone.0242476>
- Qi, Y., Liu, J., Tao, T., and Zhao, Q. (In Press). Impacts of COVID-19 on public transit ridership. International Journal of Transportation Science and Technology, <https://doi.org/10.1016/j.ijtst.2021.11.003>
- Simeus-Kabo, M., Tait, M., and McKeown, L. (2021). Public Transit in a Post-COVID-19 Canada. Catalogue no. 45-28-0001. Ottawa: Statistics Canada.

Key Words: COVID-19, Public Transit, Travel Behavior, Canada

WHAT MIGHT WORK-FROM-HOME MEAN FOR DOWNTOWNS AND COMMERCIAL REAL ESTATE? EVIDENCE FROM SIX MAJOR CANADIAN METROPOLITAN AREAS

Abstract ID: 1405

Individual Paper Submission

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The Covid-19 pandemic has highlighted the precarity of urban society, creating questions around both potential long-term opportunities and challenges for cities (van Wee & Witlox, 2021). For transportation planners, two significant

questions emerge from this disruption. First, to what extent is work-from-home likely to continue in the future? And second, what might work-from-home mean for the urban geography of cities, work, and commercial real estate – especially in downtowns? This study focuses on these questions by using survey data gathered in the fall of 2021 (N=5,002) to explore potential future work-from-home scenarios and to estimate what these may mean for the geography of work. Prime downtown real estate in major Canadian cities is comprised of office tenants and service industries supporting those tenants, so understanding the broader implications of work-from-home on land markets is critical for planners keen on protecting important urban nodes of economic production.

While neither work-from-home (telework) nor the technologies which support it are new, the Covid-19 pandemic accelerated the adoption of work-from-home business models. With a public health emergency necessitating broad quarantining, many employees were exogenously spurred to adopt virtual collaboration technologies while teleworking (Kalter, Geurs, & Wismans, 2021). Despite industry-variant permeation of technology-enabled work-from-home practices (Barbour, Menon, & Mannering, 2021), its accelerated introduction may have long-lasting impacts on the future of work and real estate. Survey findings suggest significant telework-induced future changes in travel behavior (Currie, Jain, & Aston, 2021) and simulation-based studies have highlighted dramatic potential real estate impacts on cities (Delventhal, Kwon, & Parkhomenko, 2022), but little research has estimated land use impacts based on empirical survey-based evidence on telework (a gap addressed by this study).

This study employs survey data collected in six major Canadian metropolitan areas (collectively half of Canada's population): Toronto, Montreal, Vancouver, Calgary, Ottawa, and Hamilton. Survey data based on ordinal frequencies measures respondent telework practices before and during the pandemic, including prospective future telework practices. The survey includes information on individuals' existing places of work, residence, household characteristics, individual and sociodemographic characteristics, and travel behavior. Inferential models are developed which are used to develop work-from-home scenarios which are allocated spatially based on respondents' locations of work. Using scenario logic loosely rooted in base economic theory, commercial real estate vulnerability and opportunity are mapped based on alternative industry-specific scenarios. Results are interpreted considering potential rent impacts, potential need/opportunity to reconfigure commercial office use models, and spillover impacts throughout the metropolitan land markets.

While results should be interpreted as upper bounds with respect to the potential future impacts of work-from-home on commercial real estate and the geography of work, findings suggest that impacts will be unequal and are likely to disrupt the accumulation of agglomeration economies and their broader social benefits.

Citations

- Barbour, N., Menon, N., & Mannering, F. (2021). A statistical assessment of work-from-home participation during different stages of the COVID-19 pandemic. *Transportation Research Interdisciplinary Perspectives*, 11, 1-9.
- Currie, G., Jain, T., & Aston, L. (2021). Evidence of a post-COVID change in travel behaviour - Self-reported expectations of commuting in Melbourne. *Transportation Research Part A*, 153, 218-234.
- Delventhal, M. J., Kwon, E., & Parkhomenko, A. (2022). JUE Insight: How do cities change when we work from home? *Journal of Urban Economics*, 127, 1-20.
- Kalter, M.-J. O., Geurs, K. T., & Wismans, L. (2021). Post COVID-19 teleworking and car use intentions. Evidence from large scale GPS-tracking and survey data in the Netherlands. *Transportation Research Interdisciplinary Perspectives*, 12, 1-11.
- van Wee, B., & Witlox, F. (2021). COVID-19 and its long-term effects on activity participation and travel behaviour: A multiperspective view. *Journal of Transport Geography*, 95, 1-6.

Key Words: telework, work-from-home, commuting, real estate, urban geography

A RIDE-HAIL OF TWO CITIES: EXAMINING THE FACTORS ASSOCIATED WITH RIDE-HAIL USE IN DHAKA, BANGLADESH AND LOS ANGELES, USA

Abstract ID: 1406

Individual Paper Submission

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Ride-hail has grown rapidly in both developed and developing countries. Given their novelty and rapid expansion, these services are affecting cities and travel in them in myriad and often unexpected ways (Alemi et al., 2018; Rayle et al., 2016). There has been considerable academic study of these services, including the factors influencing travelers' use of ride-hailing, patterns of ride-hail trip-making, and the effects of ride-hailing on traffic congestion, curb space and parking, public transit, labor, and the environment (Tirachini, 2019). However, there has been little cross-country comparative study of its use.

The basic technology and business model of ride-hail vary little from place to place. Available drivers with vehicles and customers wanting a ride to a destination are matched via apps on mobile devices by the ride-hail company, which recruits and regulates drivers and customers, sets and collects the fare, and takes a cut. However, the travel modes operated, the regulation of ride-hail, and the environments within which ride-hail operates vary enormously from the leafy suburbs of Silicon Valley to the packed streets of Lagos to gleaming towers of Hong Kong (Tirachini, 2019).

Because the economic, cultural, and regulatory environments for ride-hail vary so substantially from place to place, it is important to understand how ride-hail use varies across these contexts. Therefore, we examine ride-hail use in two enormous and enormously different cities: Dhaka, Bangladesh and Los Angeles, United States. We ask: How do the factors associated with ride-hail use differ across these two places, and how are they similar? To answer these questions, we surveyed travelers in both places using quota sampling. To ensure internal validity, we employed the exact same survey design, sampling, and data collection methods in both cities. The survey was administered using a semi-structured questionnaire that posed the same questions to all respondents, though in Bengali and English in Dhaka and English and Spanish in Los Angeles.

Given the profound differences between Dhaka and Los Angeles, perhaps the most significant finding is the striking similarities in the factors associated with ride-hail use in the two cities. With respect to their differences, we find that women and those with very low levels of education are more likely to use ride-hail in Los Angeles than in Dhaka, and that middle-aged travelers are more likely to use ride-hail in Dhaka than in Los Angeles. But aside from these, there are many more similarities. Across both regions, we find that older, grade-school educated, lower-income, and technology averse travelers are all statistically significantly less likely to use ride-hail, all else equal. In addition, despite the very different levels of vehicle ownership between the two cities, access to autos is negatively related to ride-hail use in both places.

We conclude that, when it comes to ride-hail users and use, Dhaka and Los Angeles share more than they differ. The research offers insights to both planning scholars and practitioners concerned with the rise of ride-hail and its implications for mobility, equity, and the environment.

Citations

- Alemi, F., Circella, G., Handy, S., & Mokhtarian, P. (2018). What influences travelers to use Uber? Exploring the factors affecting the adoption of on-demand ride services in California. *Travel Behaviour and Society*, 13, 88–104. <https://doi.org/10.1016/j.tbs.2018.06.002>
- Rayle, L., Dai, D., Chan, N., Cervero, R., & Shaheen, S. (2016). Just a better taxi? A survey-based comparison of taxis, transit, and ridesourcing services in San Francisco. *Transport Policy*, 45, 168–178. <https://doi.org/10.1016/j.tranpol.2015.10.004>
- Tirachini, A. (2019). Ride-hailing, travel behaviour and sustainable mobility: An international review. *Transportation*. <https://doi.org/10.1007/s11116-019-10070-2>

Key Words: Ride-hail, Ride-sourcing, Travel behavior, Developing countries

WHY IS "INDUCED DEMAND" MISSING FROM TRANSPORTATION ENGINEERING CLASSROOMS? (AND WHY SHOULD PLANNING PROFESSORS CARE?)

Abstract ID: 1414

Individual Paper Submission

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Transportation engineers often justify new roadway investments by how much time drivers will save and by how much air pollution will improve by smoothing stop-and-go traffic. But planners have long known that any improvement in travel speed from new capacity will quickly be eaten up as drivers converge from other routes and other times of day. What is more, the wider roadway encourages more driving (and hence more pollution) as people switch from other modes, make trips they previously avoided, and make longer trips on the newly free-flowing lanes. This concept, known as induced demand, is well-established and empirically validated.

The idea is also transformative; once we understand induced demand, the logical foundations of transportation policy become unstable. We can no longer justify road widening projects by their ability to improve travel speeds or reduce air pollution because these benefits will be short-lived. Yet, as Noland and Lem (2004) explain, engineers “have been reluctant to accept this conclusion.” As of 2022, roadway projects are still justified by promises to improve travel times, induced demand has yet to be incorporated into federally required environmental reviews, and urban Interstates are being widened across the country.

Engineers may be reluctant to embrace induced demand and a wholesale reframing of transportation policy for many reasons. The spigot of federal money for road projects would likely turn from a torrent to a trickle and engineers would likely have to cede power to other stakeholders—and their priorities—when setting transportation policies.

In this work, we focus on a complementary explanation: some engineers may not fully understand induced demand. After all, the idea is somewhat counterintuitive and is difficult to prove because we cannot directly observe the counterfactual (i.e., what would have happened if we had not widened the roadway?). A recent survey of students enrolled in transportation courses comports with the hypothesis that knowledge is a factor. While planning students near universally understood induced demand, engineering students were relatively less familiar with the concept (93% vs. 58%).

Why are engineering students so much less likely to understand induced demand? To explore these issues, we conducted a systematic review of seven transportation engineering textbooks. We find that nascent engineers could be forgiven for their confusion because engineering textbooks have a mixed record when it comes to congestion. Just one of the textbooks offered an unambiguous description of induced demand. The others either contradicted themselves, were unclear, or did not mention the idea at all. These textbooks also send mixed messages about the nature of demand—sometimes indicating that it is fixed and other times indicating that it can and should be managed.

Because instructors can augment textbooks with their own materials, we conducted interviews with faculty who teach transportation engineering classes. Our interviews reveal remarkable variation in engineering instruction. Some professors featured induced demand as a central theme, whereas many others omitted the idea entirely. These distinctions often fell along generational lines with junior professors more likely to teach induced demand than their more senior peers. In exploring the rationales for their pedagogical decisions, some professors were adamant that induced demand had no place in the engineering classroom. More often, professors expressed a desire to incorporate induced demand, but lacked the time or expertise to develop new teaching materials or felt there was insufficient class time to dedicate to the topic.

It is important for planning professors to recognize the omission of induced demand from many engineering classrooms and to prepare their students to anticipate and prepare for interdisciplinary disagreements about congestion. Planning professors could also take steps to bridge the interdisciplinary divide by sharing course materials.

Citations

- Ralph, K. M., Klein, N. J., Thigpen, C., & Brown, A. (n.d.). Are transportation planning views shared by engineering students and the public? *Journal of Planning Education and Research*, Accepted (Forthcoming).
- Noland, R. B., & Lem, L. L. (2002). A review of the evidence for induced travel and changes in transportation and environmental policy in the US and the UK. *Transportation Research Part D: Transport and Environment*, 7(1), 1–26. [https://doi.org/10.1016/S1361-9209\(01\)00009-8](https://doi.org/10.1016/S1361-9209(01)00009-8)
- Volker, J. M. B., Lee, A. E., & Handy, S. (2020). Induced Vehicle Travel in the Environmental Review Process. *Transportation Research Record*, 2674(7), 468–479. <https://doi.org/10.1177/0361198120923365>
- Ladd, B. (2012). “You can’t build your way out of congestion.” – Or can you? *DisP - The Planning Review*, 48(3), 16–23. <https://doi.org/10.1080/02513625.2012.759342>

Key Words: Congestion, Pedagogy, Engineering, Transportation, Qualitative

BIKE NETWORK PLANNING FOR A NATURE-INSPIRED ECOSYSTEM-BASED GREEN INFRASTRUCTURE: A CASE STUDY OF ARLINGTON, TEXAS

Abstract ID: 1415

Individual Paper Submission

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The domination of cars in the U.S. has resulted in car-oriented urban landscapes during the past decades. Car dependency has been criticized as an unsustainable and inequitable transportation mode due to traffic congestion, air pollution, energy shortage, economic burden, safety, and public health-related issues (McNeil, 2011; Gehrke et al., 2020; Winters et al., 2013). On the other hand, bicycle/biking is considered an alternative to cars as it is economically accessible to more people and can help ease the many issues associated with car dependency. Better than pedestrians, cyclists can access a broader type of destinations, travel faster, and carry loads more easily (McNeil, 2011; Winters et

al., 2013). Despite the benefits of bicycles and the urgency to allow multi-modal transportation options, there is a lack of cases that apply the newly proposed planning paradigm of nature-based solutions from the socio-ecological perspective (Rosa et al., 2021; Xiang, 2021) to expand city bike network planning.

Nature-based solutions (NBS) are introduced as resource-efficient and cost-effective approaches to respond to various ecological and social challenges, such as climate change, air pollution, and social and economic inequalities. Therefore, this study aims to apply the socio-ecological framework to bike network planning in searching for a nature-based green infrastructure for the city of Arlington, TX -a self-proclaimed “American Dream City” characterized by entertainment and education and entrepreneurial opportunities yet lacks traditional public transit. The primary purpose of this study is to understand how the bike network planning in Arlington, TX supports the goals of social and environmental equity and sustainability under a nature-inspired ecosystem-based framework. Specifically, the study attempts to answer the following research questions:

1. To what extent do Arlington's existing and planned bike routes facilitate the connections between residential and significant destinations within Arlington?
2. How well does Arlington's bike network fulfill its equity goals and serve people with different social, racial, and economic conditions?

We achieve this objective by first establishing measurements and criteria according to the socio-ecological framework and conducting spatial inquiries and assessments along the dimensions established in the first step. We finally propose a nature-inspired and ecological-based bicycle network plan based on the analysis results. Hence, this study incorporates a comprehensive methodological approach to evaluate how and to what extent various categories of critical destinations in Arlington are accessible through its bike network plan and if the bike network plan in Arlington serves its vulnerable population equitably and conveniently. Our findings indicate that many critical destinations in the city are not accessible via the existing bike network. While implementing the planned bike routes will increase the accessibility rates, some destinations, such as top employers in the city, will still suffer from limited access to the bike network. Our results also show that the bike network in Arlington does not provide equitable access to its socially, racially, and economically underserved population.

The history of socio-ecological practice demonstrates large quantities of nature-inspired green infrastructure projects; however, many of these projects have not been documented. Therefore, their impacts on cities and citizens have not been quantified. Accordingly, we contribute to the existing scholarship by offering a real-world demonstration of bicycle network planning as a nature-based solution to address equity and sustainability issues in transportation. Therefore, in its application, the results of this study could be used to identify the least benefited locations and inform policies on developing equitable service for vulnerable populations through bike network planning.

Citations

- Gehrke, S. R., Akhavan, A., Furth, P. G., Wang, Q., & Reardon, T. G. (2020). A cycling-focused accessibility tool to support regional bike network connectivity. *Transportation Research Part D: Transport and Environment*, 85, 102388. <https://doi.org/10.1016/j.trd.2020.102388>
- McNeil, N. (2011). Bikeability and the 20-min Neighborhood: How Infrastructure and Destinations Influence Bicycle Accessibility. *Transportation Research Record*, 2247(1), 53–63. <https://doi.org/10.3141/2247-07>
- La Rosa, D., Pauleit, S. & Xiang, WN. Unearthing time-honored examples of nature-based solutions. *Socio Ecol Pract Res* 3, 329–335 (2021). <https://doi.org/10.1007/s42532-021-00099-y>
- Winters, M., Brauer, M., Setton, E. M., & Teschke, K. (2013). Mapping Bikeability: A Spatial Tool to Support Sustainable Travel. *Environment and Planning B: Planning and Design*, 40(5), 865–883. <https://doi.org/10.1068/b38185>
- Xiang W-N (2021) Seven approaches to research in socio-ecological practice & five insights from the RWC-Schön-Stokes model. *Socio Ecol Pract Res* 3(1):71–88. <https://doi.org/10.1007/s42532-021-00073-8>

Key Words: Bike Network Planning, Nature-Based Solutions, Green Transportation Infrastructure, Spatial Analysis, Socio-Ecological Practice

NO MORE SPEED TRAPS AND TICKET QUOTAS: CAN A NEW FRAME REDUCE OPPOSITION TO AUTOMATED SPEED ENFORCEMENT?

Abstract ID: 1417

Individual Paper Submission

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Traffic safety cameras offer proven countermeasures for improving road safety and are increasingly seen as a way to minimizing interpersonal racial bias in policing. But despite their promise, automated enforcement is rare in the United States and many states have banned speed cameras or severely limited their use. Underlying these bans is the widespread perception that automated enforcement is unpopular and politically contentious, primarily due to concerns that cameras are merely a tool to raise revenue.

In our paper, we draw on the literature about traffic enforcement and a survey experiment to make five arguments about revenue and traffic safety cameras. First, we draw on a purpose-built survey of the U.S. public to demonstrate that the public is concerned about revenue from traffic tickets more broadly, not just those from cameras. Second, we draw on existing literature to demonstrate that these concerns about revenue are well founded; many cities do use traffic citations as a revenue generation tool.

Third, we argue that shifting away from traditional enforcement to automated traffic cameras could directly address the public's reasonable concerns about revenue generation. With automated enforcement, cities and police departments cannot ramp up ticketing to meet revenue needs because the cameras are already operated 24 hours a day. This is a somewhat counterintuitive re-framing, it characterizes cameras not as revenue generation tools, but rather as tools to prevent revenue generation.

Fourth, we explore whether this reframing can increase public support for cameras. We conducted a survey experiment where we randomly assigned respondents to read one of two short messages about a proposed automated enforcement program. The treatment message differed from the control message in one respect: it presented cameras as a tool to prevent enforcement blitzes and ticket quotas. Respondents who encountered the treatment message were far more supportive of automated enforcement than those in the control group.

Fifth, we acknowledge that the proposed reframing must be accompanied by larger institutional changes to program operation, contracts, and the use of revenue. We draw on the literature to discuss these issues and make recommendations for effective and just camera programs.

This work lies at the intersection of public opinion, traffic safety, municipal finance, and racial justice. Grappling with the role of enforcement should be a priority for planners and policy makers.

Citations

- Morain, S. R., Gielen, A. C., & Bhalla, K. (2016). Automated speed enforcement systems to reduce traffic-related injuries: Closing the policy implementation gap. *Injury Prevention*, 22(1), 79–83. <https://doi.org/10.1136/injuryprev-2014-041507>
- Sances, M. W., & You, H. Y. (2017). Who Pays for Government? Descriptive Representation and Exploitative Revenue Sources. *The Journal of Politics*, 79(3), 1090–1094. <https://doi.org/10.1086/691354>
- Su, M. (2020). Taxation by Citation? Exploring Local Governments' Revenue Motive for Traffic Fines. *Public Administration Review*, 80(1), 36–45. <https://doi.org/10.1111/puar.13125>
- Delaney, A., Ward, H., Cameron, M., & Williams, A. F. (2005). Controversies and Speed Cameras: Lessons Learnt Internationally. *Journal of Public Health Policy*, 26(4), 404–415. <https://doi.org/10.1057/palgrave.jphp.3200044>
- Rein, M., & Schön, D. (1996). Frame-critical policy analysis and frame-reflective policy practice. *Knowledge and Policy*, 9(1), 85–104. <https://doi.org/10.1007/BF02832235>

Key Words: Framing, Safety, Experiment, Fines, Opinion

EXPLORING THE ENVIRONMENTAL AND SOCIAL SUSTAINABILITY IN THE TRAVEL BEHAVIOUR PATTERNS OF YOUNG ADULTS

Abstract ID: 1418

Individual Paper Submission

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Central Theme: Travel behaviour of young adults from generations Y and Z is arguably environmentally sustainable as they drive less and use environmentally friendly transportation modes like walking, cycling and transit (Grimsrud & El-geneidy, 2014; McDonald, 2015). However, it is debatable whether the use of sustainable transportation modes contributes to improved social sustainability (Boschmann & Kwan, 2008; Lucas, 2012). The risk of transportation-

related social exclusion among young adults, due to their sustainable travel choices and lower car-reliance, remains less explored. We address this important research gap by focusing on the travel behaviour of Canadian post-secondary students, and examine two research questions: 1) What is the association between post-secondary students' transportation mode choice patterns and their activity participation patterns?, and 2) what are the key socio-economic and built environment features that explain environmental and social sustainability of travel patterns?.

Methods: This research was carried out in the Greater Toronto and Hamilton Area (GTHA), Canada, using one-day travel diary data (n=3,918) collected from students of ten universities and community colleges. Several measures of social exclusion were estimated, including total number of activities participated, area covered per activity and time spent travelling per activity. The area covered per activity was calculated by dividing the total daily activity space, calculated using a minimum convex polygons approach, with the number of places visited by a student. Mode choice patterns were estimated based on a latent class analysis (LCA) of data on short-term and long-term travel choices. A total of ten built environment features were measured at the residential locations of students and reduced into four "factors", namely: 1) street connectivity, 2) population density, 3) land use mix, and 4) parks and open spaces, through principal component analysis (PCA) and factor analysis. Multiple linear regression models were run to examine the association between students' activity participation patterns, and transportation mode choice patterns, with various socio-demographic characteristics and built environment factors included as co-variables.

Results: Post-secondary students were grouped into five transportation mode choice patterns based on LCA results, namely- Automobile Dependents (13.3%), Transit Dependents (35.2%), Cyclists (6.2%), Pedestrians (19.9%), and Multimodals (25.4%). "Transit dependent" students, who constitute more than a third of our sample, are more likely to have lower activity participation compared to "automobile dependents", while "multimodal" students participate in more activities. All the users of sustainable transportation modes, particularly "transit dependents" and "cyclists", spend much longer time than automobile dependents to reach an activity. Students who attend downtown university or college campuses participate in more activities, and travel less per activity compared to those in suburban campuses. Students who reside in higher population density areas cover smaller area and spend less time to participate in an activity.

Conclusion: Transportation mode choice patterns for the majority of the post-secondary students in the GTHA can be considered environmentally sustainable. However, those who are dependent on transit may face social exclusion due to lack of activity participation, and hence, their travel behaviour may not be socially sustainable. Future public transportation planning and policy should be focused on addressing the travel needs of the young adults who reside in less dense areas with limited transportation opportunities and inefficient public transit.

Citations

- Boschmann, E. E., & Kwan, M.-P. (2008). Toward Socially Sustainable Urban Transportation: Progress and Potentials. *International Journal of Sustainable Transportation*, 2(3), 138-157. <https://doi.org/10.1080/15568310701517265>
- Grimsrud, M., & El-geneidy, A. (2014). Transit to eternal youth: lifecycle and generational trends in Greater Montreal public transport mode share. *Transportation*, 41(1), 1-19. <https://doi.org/10.1007/s11116-013-9454-9>
- Lucas, K. (2012). Transport and social exclusion: Where are we now? *Transport Policy*, 20, 105-113. <https://doi.org/10.1016/j.tranpol.2012.01.013>
- McDonald, N. C. (2015). Are millennials really the "go-nowhere" generation? *Journal of the American Planning Association*, 81(2), 90-103. <https://doi.org/10.1080/01944363.2015.1057196>

Key Words: Environmental sustainability, Social sustainability, Social exclusion, Young adults, Mode choice patterns

PLANNING CAR-LITE NEIGHBORHOODS: COORDINATING ACCESSIBILITY IMPROVEMENTS WITH HOUSING POLICIES

Abstract ID: 1430

Individual Paper Submission

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Emerging mobilities like automated vehicles, mobility-on-demand, and micromobility are motivating discussions on the future of cities. Domain experts agree that there is great uncertainty about their net effects on cities. While short-term travel time and cost savings are possible, the induced travel demand will likely cancel out those benefits in the long-term. There is less uncertainty and more agreement about accessibility benefits, which can increase worker welfare but might also result in larger travel distances and urban sprawl. Several megacities are actively planning 'car-lite' strategies to reduce private car ownership and use with the help of these emerging mobilities (and supporting transportation and land use policies). Car-lite policies are likely to be first piloted at a neighborhood scale instead of

the entire city because it stands to reason that planning agencies will test out the policy in a limited capacity first before rolling it out to their entire jurisdiction. How will such pilots impact neighborhoods? Will they be successful in reducing vehicle ownership and use? To what extent will they induce undesirable but consequential side-effects such as gentrification?

This study attempts to address these questions using SimMobility - a state-of-the-art agent-based land-use transportation interaction (LUTI) microsimulation model. We use the Long-Term (LT) component that involves the creation of a synthetic population, followed by household-level residential location and mobility holdings choices, and individual-level job location choices, at the temporal scale of days to years. This study uses the SimMobility calibration for the city-state of Singapore, which makes for a particularly interesting study area for testing housing and mobility policies owing to the tightly regulated markets. We construct car-lite policies that improve accessibility locally in selected neighborhoods as a representation of the localized impacts of emerging mobilities. Various scenarios are designed based on hypotheses about market responses to car-lite policies – (a) baseline (no reaction), (b) minimal effect (awareness only), (c) increase in buyer valuations, and (d) increase in both buyer and seller valuations.

Last year, we reported that the increased accessibility from the car-lite pilot did make most neighborhoods significantly more vehicle-free. However, the in-mover households were found to be comparatively higher-income than both the households they displaced as well as the original study area population. The vision of a car-lite community is adversely impacted in such circumstances where higher-income households, who are more likely to have private mobility holdings, refuse to reduce their mobility holdings after outbidding lower-income households for housing in the study area. Thus, the gentrification side-effect significantly reduces the potential vehicle-free gains from the car-lite policy. In certain neighborhoods, as much as 90% of the expected reduction in vehicle ownership can be offset by the housing market-driven effect. These neighborhoods turn out to be only marginally more vehicle-free than they were initially without the car-lite pilot.

This year, we shortlist four neighborhoods based on how the accessibility improvements affected them, and test whether and how integrated housing policies (such as new public housing and car-restricted housing) can mitigate the gentrification side-effects while maximizing car-free gains. We examine various offerings of new public housing, both at market-rate and mixed-rate (some market-rate and some affordable), with several mixes of different unit sizes. We also examine car-restricted housing supply, both with and without discounts to offset the inconvenience of the vehicle ownership restriction. Our results suggest that both policies can be successful in achieving the intended objectives. Additionally, they distribute accessibility benefits among a wider range of households, while increasing consumer surplus for all neighborhood residents. By making these neighborhoods differentially attractive to lower-income vehicle-free households, car-lite gains can be significantly increased.

Citations

- Basu, R., & Ferreira, J. (2020). A LUTI microsimulation framework to evaluate long-term impacts of automated mobility on the choice of housing-mobility bundles. *Environment and Planning B: Urban Analytics and City Science*, 47(8), 1397-1417. doi: 10.1177/2399808320925278
- Basu, R., & Ferreira, J. (2020). Planning car-lite neighborhoods: Examining long-term impacts of accessibility boosts on vehicle ownership. *Transportation research part D: transport and environment*, 86, 102394. doi: 10.1016/j.trd.2020.102394
- Basu, R., & Ferreira, J. (2021). Planning car-lite neighborhoods: Does bikesharing reduce auto-dependence? *Transportation research part D: transport and environment*, 92, 102721. doi: 10.1016/j.trd.2021.102721
- Basu, R., Ferreira, J., & Ponce-Lopez, R. (2021). A framework to generate virtual cities as sandboxes for land use-transport interaction models. *Journal of Transport and Land Use*, 14(1), 303-323. doi: 10.5198/jtlu.2021.1791
- Zhou, M., Li, J., Basu, R., & Ferreira, J. (2022). Creating spatially-detailed heterogeneous synthetic populations for agent-based microsimulation. *Computers, Environment and Urban Systems*, 91, 101717. doi: 10.1016/j.compenvurbsys.2021.101717

Key Words: Accessibility, Vehicle ownership, Housing, Land use-transport interaction model, Agent-based microsimulation

USING BIKE SHARE GPS ROUTE DATA TO QUANTIFY INDUCED-DEMAND EFFECTS OF SEPARATED CYCLING INFRASTRUCTURE IN HAMILTON, ONTARIO

Abstract ID: 1449

Individual Paper Submission

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Cycling is seen as an increasingly healthy and sustainable modal choice for urban residents. This, coupled with the growing shift in both policy and practice to an urban planning paradigm promoting density and sustainability, has led to increasing investment in both ‘hard’ and ‘soft’ interventions into transportation networks. Included in these interventions are the developments of Bike Share Systems (BSSs), as well as dedicated, separated, cycling infrastructure. With real and perceived safety having been identified as a major barrier to cycling for most individuals, separated infrastructure has been found to reduce this barrier, thus theoretically making cycling more appealing (Bateman et al., 2021). Many studies have sought to analyze dedicated cycling infrastructure’s impact on ridership levels and have shown distinct correlations between them. However, proving causality has been identified as a major barrier to cycling induced demand research (Krizek et al., 2009). Most studies seeking to prove this causality have used methodologies ranging from stated-preference surveys, which are limited by the need for hypothetical scenarios or participant recall. Others have been limited to cross-sectional data for analysis. Finally, revealed-preference studies on induced demand have largely relied on single-intervention case studies and artificially generated routes, rather than fully longitudinal and empirical route data. We have identified a need in the literature for an empirical, larger-scale analysis of dedicated, separated, cycling infrastructure’s impact on inducing bike share demand, accounting for real and perceived cyclist safety variables.

Data for over 800 GPS-equipped bike share bicycles in Hamilton were collected over a period of a year in 2020 and 2021, and were map-matched and enhanced with additional route information, using Dalumpines & Scott’s (2018) GIS-Based Episode Reconstruction Toolkit. These routes represented the actual trips Hamilton Bike Share users took over the study period. Several intervention sites, whose entire constructions happened within the study period, have been identified – with several months of data before, during, and after the intervention. Finally, additional route characteristics were used in the analysis, including their Level of Traffic Stress (LTS) (Mekuria et al., (2012), which was weighted for each route link using a methodology developed by Ubhi and Scott (2021). These variables allowed for quantitative examination of perceived route safety over time, as the interventions changed network links’ LTS values.

The primary goals of the project are to determine the specific impacts of dedicated, separated, cycling infrastructure, and perceived safety – as measured through a Weighted LTS classification system – on Hamilton Bike Share ridership. This is accomplished by modelling the induced bike share user demand (new or diverted trips) on specific routes containing infrastructure interventions over the study period. The project seeks to fill a gap in the literature using revealed-preference, empirical route data, as well as broadening the analysis from a single-intervention case study, such as that done by Karpinski et al. (2021). While focussing specifically on bike share ridership, the study serves as a methodological foundation for further study on a wider range of cyclists.

Citations

- Bateman, L. B., Fouad, M. N., Sullivan, A., Heider, L., and Oates, G. R. (2021). Barriers and facilitators to Bikeshare Programs: A qualitative study in an urban environment. *Journal of Transport & Health*, 21, 101062. <https://doi.org/10.1016/j.jth.2021.101062>
- Dalumpines, R., and Scott, D. M. (2018). “GIS-based episode Reconstruction Toolkit (Gert): A transferable, modular, and scalable framework for automated extraction of activity episodes from GPS Data.” *Travel Behaviour and Society*, 11, 121–130.
- Karpinski, E. (2021). “Estimating the effect of protected bike lanes on bike-share ridership in Boston: A case study on commonwealth avenue.” *Case Studies on Transport Policy*, 9(3), 1313–1323.
- Mekuria, M. C., Furth, P. G., and Nixon, H. (2012). *Low-Stress Bicycling and Network Connectivity*. Mineta Transportation Institute Publications 11-19, 86.
- Ubhi, R., and Scott, D. M. (2021). Are Dominant Routes the Least Stressful Routes in a Bike Share System? An Investigation of Hamilton Bike Share using Weighted Level of Traffic Stress. McMaster University.

Key Words: Induced Demand, Bike Share, GPS, GIS

THE MOST VULNERABLE USER: CONSIDERING THE ROLE OF INCOME, RACE, AND THE BUILT ENVIRONMENT ON PEDESTRIAN CRASHES, INJURIES, AND DEATHS

Abstract ID: 1471

Individual Paper Submission

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Movements such as Vision Zero and Safe Systems call for the transportation profession to be centered on the safety needs of “vulnerable users,” or those persons most likely to be injured or killed in a traffic collision. Given the fragility of the human body, this has become largely synonymous with pedestrians, and has resulted in the assertion that investments in pedestrian infrastructure will necessarily enhance safety. Yet this assumes that risk factors are

consistent across different population segments. This study applied negative binomial regressions to understand the environmental risk factors for the population as a whole, as well as for lower- and higher-income areas specifically. It finds notable differences in the environmental risk factors for lower-income and higher-income areas. Indeed, many of the types of interventions proposed under Vision Zero-type programs would be expected to have little, if any, effect on addressing pedestrian crash risk in more affluent areas, a finding that may help explain why Vision Zero programs in the United States have largely failed to reduce traffic-related deaths and injuries. Beyond differences in environmental risk factors, higher concentrations of black residents in lower-income areas significantly increased overall pedestrian crash risk, beyond the risk already associated with income. Considered as a whole, these findings suggest that the definition of vulnerability, as it relates to road safety, needs to be understood not simply as a function of a human body's physical tolerance for trauma, but also an outcome of broader disparities associated with race and income.

Citations

- Dumbaugh, E., D. Saha, and L. Merlin (2020). "Towards Safe Systems: Traffic Safety, Cognition, and the Built Environment." *Journal of Planning Education and Research*.
- Noland, R. B., Klein, N. J., & Tulach, N. K. (2013). Do lower income areas have more pedestrian casualties?. *Accident Analysis & Prevention*, 59, 337-345.
- Goddard, T., Kahn, K.B., & Adkins, A. (2015). Racial bias in driver yielding behavior at crosswalks. *Transportation research Part F: Psychology and Behavior*, 33, 1-6

Key Words: Safety, Equity

HOW DOES STREET SPACE INFLUENCE CRASH FREQUENCY? AN ANALYSIS USING SEGMENTED STREET VIEW IMAGERY

Abstract ID: 1486

Individual Paper Submission

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Road crashes in metropolitan areas are challenging to prevent because they stem from the interactions of drivers and other system users in intricate built environments. Recent theories indicate that features of the built environment may induce unsafe driving by shaping users' expectations and behaviors. The concept of self-explaining roads refers to a tendency of drivers to be guided by road design, which users perceive as indicating a particular type of road, or the appropriate way to drive (Theeuwes 2021). Additionally the theory of safe systems incorporates this concept, further arguing that because the built environment creates scripts that shape driver errors, the context of driver errors should be considered foremost (Dumbaugh et al. 2020). In practice, the policy framework of Vision Zero implements such a systems perspective on road safety that seeks solutions that accommodate rather than attempt to correct human fault (Belin et al. 2012). Finally, the mixture of elements in view to the driver may influence psychological state or behavior, such as street trees being associated with reduced speed (Naderi et al. 2008).

Research on the role of environmental design features has been limited by the availability of comprehensive data on the characteristics of street spaces and scalable methods for analyzing that data. Our current knowledge is thus strongest in understanding how adjacent land uses influence crash frequency by creating conflicts of use, and in understanding the effectiveness of specific street designs in reducing conflicts in high crash areas. There is less understanding of how the complete characteristics of the street spaces visible to drivers influence urban road safety outcomes, including non-road and natural elements such as buildings and sky whose visibility is directly influenced by road design. To address this limitation this paper presents analyses using automatically-segmented street view imagery in order to consider the relationship of street space elements with crash frequency. In particular, we ask firstly, how do specific elements of street spaces visible to drivers influence crash frequency on road segments? And secondly, can these street spaces be categorized into types on the basis of these elements to better understand their influence on crash frequency?

We conduct this study using data from Columbus, Ohio, USA, where severe and fatal crashes have been a persistent problem. The number of these crashes in Columbus excluding highways has been steady in recent years, ranging between 353 and 370 each year from 2016 to 2019 according to a Vision Zero Action Plan. Furthermore of 225 traffic fatalities that occurred between 2015 and 2019, nearly one third were pedestrians. We present results from three negative binomial regression models on crash frequency. A base model shows how road network, land use, and area characteristics affect crash frequency on Columbus road segments. We augment this base model by adding independent variables for the most prevalent individual objects identified by our street view image segmentation. A third model replaces these individual object variables with street space types created through a cluster analysis. Based on these results, we argue that the visual similarity of metropolitan non-highway roads with highways in terms of

their street spaces, makes them more dangerous because it encourages higher speed driving in locations where more complex conditions exist, including the presence of pedestrians. We also recommend a greater role for automatically-segmented street image data in traffic safety practice.

Citations

- Belin, M.A., Tillgren, P. and Vedung, E., 2012. Vision Zero—a road safety policy innovation. *International journal of injury control and safety promotion*, 19(2), pp.171-179.
- Dumbaugh, E., Saha, D. and Merlin, L., 2020. Toward safe systems: Traffic safety, cognition, and the built environment. *Journal of Planning Education and Research*, p.0739456X20931915.
- Naderi, J.R., Kweon, B.S. and Maghelal, P., 2008. The street tree effect and driver safety. *ITE Journal*, 78(2), pp.69-73.
- Theeuwes, J. 2021. Self-explaining roads: What does visual cognition tell us about designing safer roads?. *Cognitive research: principles and implications*, 6(1), 1-15.

Key Words: road safety, urban form, street view imagery, neural networks, cluster analysis

HOW CAN NEW MOBILITY SERVE THE NEEDS OF MOBILITY CONSTRAINED COMMUNITIES? A CASE STUDY OF SOUTHEAST LOS ANGELES

Abstract ID: 1489

Individual Paper Submission

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The relationship between travel behavior and sociodemographics is well known. Low-income, minority individuals are likely to travel shorter distances and take fewer trips than those with higher incomes (Blumenberg and Agrawal, 2014). Additionally, although car ownership in the U.S. is almost universal, disparities in ownership are prevalent by race and income, with low-income, Black, and Latino households being more likely to not have a vehicle than high-income and white households (Methipara, 2014, Brown, 2018). As new mobility services emerge and the landscape of travel begins to shift with technology, there are many questions to be addressed on how these new services and technologies may affect travel behavior among low-income communities of color as well as who will benefit from them. The purpose of this analysis is to examine if and how new mobility solutions can be implemented in low-income communities of color to improve mobility access.

We begin by analyzing how travel in a low-income community differs from travel in higher-income communities. We are interested in both behavior and perceptions with respect to travel frequency, destination choice, trip scheduling, mode, trip chaining, and last-mile access to transit. We use southeast Los Angeles (SELA) as our case study area. Per the 2019 American Community Survey, 89 percent of SELA residents identify as Hispanic or Latino, compared to 48 percent of Los Angeles county. The median household income for SELA residents is also substantially lower than Los Angeles county (\$40,306 versus \$61,213).

We use anonymized mobile phone big data from Safegraph and the California Household Travel Survey (CHTS) from 2012. Safegraph data gives cellphone traces over time and space by census block group. Destinations are classified as points of interest (POIs). The Safegraph data gives us detailed information on specific destinations residents of the SELA region are traveling to, informing potential destinations for a pilot ride-matching service. The CHTS is a statewide travel diary containing person, household, vehicle, and locational data of all travel behavior on a particular day. We use CHTS to examine individual behavior and compare travel behavior of SELA residents to the rest of Los Angeles county.

In order to develop ride-match concepts that respond to community needs, our research includes a collaboration with the South East Los Angeles Collaborative, an umbrella non-profit organization representing the community and dedicated to improving its health and welfare. The SELAC is assisting with ground-truthing our findings, connecting us with stakeholders, and conducting focus groups to obtain detailed, qualitative information on community perceptions and preferences.

We found 64,000 distinct POI locations traveled to by residents of the SELA area using Safegraph. Our analysis shows a large share of trips remain within the SELA area, and there are obvious clusters of destinations. These clusters are consistent with locations of shopping centers, medical centers, and major employers. Our findings from CHTS show that trip duration and trip distance for trips originating in SELA are not statistically different from that of Los Angeles County. There are, however, statistically significant differences in household vehicle availability and the

number of trips per person per day, which are both lower for the SELA region than that of Los Angeles County. People in SELA also tend to travel earlier in the morning and later in the evening compared to Los Angeles County. Our next steps are to identify potential locations for a ride-matching pilot and design the pilot based on both travel patterns and focus group results. We use the results to inform how new mobility and ride-matching can be implemented in the SELA region to better meet the unique travel needs of that region's residents.

Citations

- Blumenberg, E. and A. Agarwal (2014) Getting around when you're just getting by: Transportation survival strategies of the poor, *Journal of Poverty*, 18(4) 355-378. DOI: 10.1080/10875549.2014.951905
- Brown, A. E. (2018). Ridehail Revolution: Ridehail Travel and Equity in Los Angeles [UCLA]. <https://escholarship.org/uc/item/4r22m57k>
- Methipara, J. C. (FHWA). (2014). Mobility Challenges for Households in Poverty. 4.

Key Words: Travel behavior, New mobility, Big data, Low income communities

NOCTURNAL EQUITY: THE WHO, HOW, AND IMPACTS OF WORKING NIGHTS AND EVENINGS ON COMMUTERS

Abstract ID: 1490

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Late shift workers constitute 17% of the urbanized labour force in the United States (APTA, 2019) while making up 15% of the labour force in Canada (Wong et al., 2011). These workers are more likely to be socio-economically disadvantaged compared to other workers (Saenz, 2008), despite shift work including a range of higher income professions in technology and medicine. A significant amount of research contours the adverse health effects of working overnight (Neil-Sztramko et al., 2014), including an increased risk of causing a vehicle accident (Lee et al., 2016). Emerging research suggests that shift workers experience lower transit accessibility (Chandra et al., 2017; Lee et al., 2018). This study presents an exploratory analysis of evening and night shift commuting and the impact of shift work on commuters' time constraints in Canada. We ask four questions:

1. Where do evening and night shift workers live and work?
2. How do they commute to work, and what transportation resources are available to them?
3. How does working late shifts impact travel behaviour patterns throughout the day?
4. How does working late shifts impact individuals' perceived time stress and subjective wellbeing?

We explore our first two questions through visualizations and analysis of the confidential microdata from the Canadian Census accessed through Statistics Canada. We answer our second two questions through statistical analysis of the Time Use component of the Canadian General Social Survey.

Preliminary results suggest that people working nights experience higher levels of time stress compared to 9-5 workers, where time stress is defined using the time crunch index (Beaujot and Andersen, 2007). These results stem from night shift workers being more likely to cut back on sleep when they run out of time, not from issues with commuting. The effect of working evening shifts, in contrast, is insignificant. Late shift workers are clustered geographically within metropolitan areas, but the nature of the clustering varies by region.

Citations

- APTA (2019) Supporting Late-Shift Workers: Their Transportation Needs and the Economy. American Public Transit Association. Available at: https://www.apta.com/wp-content/uploads/APTA_Late-Shift_Report.pdf (accessed 19 February 2021).
- Beaujot R and Andersen R (2007) Time-crunch: Impact of time spent in paid and unpaid work, and its division in families. *The Canadian Journal of Sociology/Cahiers canadiens de sociologie*. JSTOR: 295-315.
- Chandra S, Jimenez J and Radhakrishnan R (2017) Accessibility evaluations for nighttime walking and bicycling for low-income shift workers. *Journal of Transport Geography* 64: 97-108. DOI: 10.1016/j.jtrangeo.2017.08.010.
- Lee ML, Howard ME, Horrey WJ, et al. (2016) High risk of near-crash driving events following night-shift work. *Proceedings of the National Academy of Sciences* 113(1): 176-181. DOI: 10.1073/pnas.1510383112.

- Lee WK, Sohn SY and Heo J (2018) Utilizing mobile phone-based floating population data to measure the spatial accessibility to public transit. *Applied Geography* 92: 123–130. DOI: 10.1016/j.apgeog.2018.02.003.

Key Words: shift work, transportation, commuting, transportation equity, wellbeing

PLANNING FOR SUCCESS: THE ROLE OF PLANNING AND POLICY IN THE SUCCESS OF SECOND-WAVE MODERN-ERA STREETCARS IN THE UNITED STATES

Abstract ID: 1501

Individual Paper Submission

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In recent years, the streetcar has experienced a remarkable renaissance in the United States. Several cities have invested millions of dollars bringing this transportation technology back to the streets where it had once served. Investment has been so prevalent that modern streetcar systems can now be found in more than a dozen cities throughout the United States. Unfortunately, most of these systems are underperforming due to poor ridership attainment. Regardless of the performance of these systems, the resurgence of streetcars in the United States has continued as numerous cities are actively investing in this mode of transportation. In this study we explore the planning processes in select well and poor performing systems to identify elements which may have contributed to their respective performance outcomes. To do this we rely on data from interviews with individuals who were intimately involved in the development of select streetcar systems. This data was supplemented with that obtained from a review of relevant documents. We find variation in the perceived purpose of streetcars by actors intimately involved in system development efforts across cases. This variation had an impact on the array of policies developed and planning decisions made. This saw the development of robust policies meant to maximize the economic development impact of a streetcar while those which most directly impacted system performance were commonly underdeveloped. Recommendations highlight the importance of establishing a cohesive vision at project inception and the need for specific supporting policies and planning considerations in order to attain positive performance outcomes.

Citations

- Ramos, L. E., Brown, J. R., & Nixon, H. (2015). Streetcar Resurgence in the United States: Transit Strategy, Growth-Machine Tactic, or Some of Both? *Transportation Research Record*, 2540, 30-38. doi:10.3141/2540-04
- Culver, G. (2017). Mobility and the making of the neoliberal “creative city”: The streetcar as a creative city project? *Journal of Transport Geography* 58 (1): 22-30
- King, D. & Fischer, L. (2016). Streetcar projects as spatial planning: A shift in transport planning in the United States. *Journal of Transport Geography* 54 (6): 383-390

Key Words: Transit Planning, Streetcar, Economic Development, Urban Policy

PERCEIVED ATTRACTIVENESS OF POLYCENTRIC URBAN CENTERS AND SHOPPING AND LEISURE TRAVEL IN SINGAPORE: A STUDY IN THE POST-COVID PERIOD

Abstract ID: 1508

Individual Paper Submission

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Since the 1990s, Singapore has adopted a polycentric urban development strategy to decentralize the functions of city center to a hierarchy of secondary commercial centers and reduce demands for long-distance travel. This study aims to assess how successful the planned commercial centers in Singapore are from the viewpoints of local residents and workers.

The impacts of urban form on travel and activity pattern, including the influence of metropolitan-wide polycentric spatial structure (e.g., Naess, 2011; Hou, 2019) and neighborhood-scale built environment characteristics (e.g., Figueroa et al., 2014), have been widely examined in previous empirical studies. Except for objective (e.g., GIS-based) measures of the built environment, recent studies have also found that people’s subjective evaluation of the neighborhood built environment may exert different impacts on their engagement of physical activities (e.g., Nyunt et al., 2015). There are, however, only a few studies examined people’s perceptions of metropolitan-wide commercial/activity centers and their impacts on activities (e.g., Weltevreden & Rietbergen, 2006). Most of empirical studies also focus on the travel-urban form links from residents’ perspectives instead of workers’ perspectives. Focusing on the post-COVID era, this study explores three key questions: 1) How local residents and workers evaluate

the attractiveness of the commercial centers? 2) Is the perceived attractiveness of centers associated with their actual built environment features? 3) How do the subjective evaluations of centers influence individual shopping and leisure travel and activity patterns?

This study is based on a survey of 2000 adults in Singapore conducted in February-March, 2021. Shopping and leisure activities are differentiated by home-based and workplace-based travel and internet-based online activities. Questions on the perceived attractiveness of commercial centers include the centers' historical ambience, the availability and quality of shopping, dining, cultural, entertainment facilities, the presence of greenery, as well as the transport accessibility of the centers (Weltevreden & Rietbergen, 2006). Correlation analysis is applied to explore the associations between the perceived attractiveness of the centers and the actual corresponding built environment characteristics of the centers. Probit and ordered probit models are applied to model the impacts of respondents' subjective evaluation of the centers on their travel and alternative online choices for shopping and leisure purposes, including trip frequency and destination choices, while controlling for the impacts of objective built environment measures.

The preliminary results indicate that perceived attractiveness of centers is weakly correlated with the actual availability of facilities/infrastructure or the accessibility of the centers. There is no evidence that respondents' perceptions of centers decrease as the distance between the centers and their residence or workplace increases. Subjective evaluation of recreational/entertainment facilities available at the centers is found to be positively associated with individual overall trip frequency for grocery shopping purposes while increasing the chances of incorporating the centers into residents' and workers' destination choices sets for non-grocery shopping trips and leisure trips, respectively. Positive evaluation of centers' shopping facilities may also increase residents' and workers' chances of including the centers into their grocery shopping destination choice sets. Moreover, positive feedbacks of centers' public facilities for social gatherings are found to be positively associated with individual trip frequency for non-grocery shopping purposes while decreasing the frequency of internet-based leisure/entertainment activities.

The results would provide useful insights on the polycentric urban development strategy in high-density cities to spur discussions on how these cities could be further restructured and transformed to better satisfy individual non-work travel needs and enhance their overall wellbeing. Planned commercial centers can play important roles in people's daily lives in the post-COVID period of Singapore. Policy and planning interventions to improve the centers' images may be another way to enhance people's engagement in travel and activities.

Citations

- Næss, P. (2011). 'New urbanism' or metropolitan-level centralization? A comparison of the influences of metropolitan-level and neighborhood-level urban form characteristics on travel behavior. *Journal of Transport and Land Use*, 4(1), 25-44.
- Weltevreden, J. W., & RIETBERGEN, T. V. (2007). E-shopping versus city centre shopping: The role of perceived city centre attractiveness. *Tijdschrift voor economische en sociale geografie*, 98(1), 68-85.
- Figueroa, M. J., Nielsen, T. A. S., & Siren, A. (2014). Comparing urban form correlations of the travel patterns of older and younger adults. *Transport Policy*, 35, 10-20.
- Hou, Y. (2019). Polycentric urban form and non-work travel in Singapore: A focus on seniors. *Transportation Research Part D: Transport and Environment*, 73, 245-275.
- Nyunt, M. S. Z., Shuvo, F. K., Eng, J. Y., Yap, K. B., Scherer, S., Hee, L. M., ... & Ng, T. P. (2015). Objective and subjective measures of neighborhood environment (NE): relationships with transportation physical activity among older persons. *International journal of behavioral nutrition and physical activity*, 12(1), 1-10.

Key Words: Polycentric urban form, Attractiveness, Shopping, Leisure, Singapore

WE SHALL RISE FROM THE ASHES: ANALYSIS OF NEW STREETCAR CONSTRUCTION IN 3 DECLINING CITIES, 2011 - 2020

Abstract ID: 1522

Individual Paper Submission

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Recent trends in public transportation planning have favored the building of streetcars in downtown urban cores as a type of economic redevelopment tool. Rarely do these new short transit lines actually serve a transportation need (Fisher, 2022, Lowe and Grengs, 2018, Culver 2017). The effects of this development activity are exacerbated in cities experiencing widespread urban decline and population loss. While the economic benefit may be high for fixed-rail investment adjacent to private property, city residents are not receiving an effective transportation mode. A survey of 25 streetcar projects built since 2000 show an average of only 7.9 miles of new track construction. Recent projects in

declining cities like Detroit, Milwaukee, and Cincinnati show even less construction, averaging only 3.13 miles across the 3 new projects.

The context of this development is important to transportation planners. Although these projects are not aimed at alleviating issues of racial inequity, they have an outsized negative impact on racial populations in cities with high concentrations of Black residents, and with a history of systemic racial violence, segregation, and exclusion (Brand et. al. 2020). All three cities above have a deep history as part of the racialized rustbelt. They experienced a rise in African American migrants throughout the first half of the 20th century as part of the great migration. The dual sting of redlining and white flight blocked would-be Black homeowners from buying into the housing market at the same pace as white residents, and active forms of violent intimidation held the color line between the increasingly Black city and the surrounding lily-white suburbs. Short construction that does not bridge the transportation gap across cities and regions only serves to exacerbate existing racial divides (Pfaff, 2021). According to segregation dissimilarity index, Detroit is the most segregated city in the US, with Milwaukee ranking fifth most segregated. Cincinnati ranks at 26th, with about half the dissimilarity score to Milwaukee, but still categorized as "highly segregated" (Berkley.edu, 2021)

This paper analyzes the new streetcar development projects happening in three downtown rustbelt cities in the Midwest. This case study includes the cities of Detroit, Milwaukee, and Cincinnati, which all experienced significant periods of urban decline, and have a high percentage of Black residents in the 2020 US census. All three cities opened new streetcar lines in the past 10 years, with extensive state, local, and federal funding to fund each ~\$140 million dollar project. I analyze population data at the census tract level across the geographic area covered by the new streetcar construction, and compare demographic changes between the 2010 and 2020 decennial data. These changes are analyzed relative to larger demographic shifts over all census tracts in each city. My findings demonstrate that there was a significant population decline of % black residents in the downtown census tracts where streetcars were built across all three cities, with Detroit experiencing the most severe 46% drop in %Black population. Although this is not a causal link to transportation planning, I argue that transportation investment spurred private development and real estate speculation has since had an outsized impact on vulnerable Black city residents who ultimately experienced displacement. The findings of this study are important to transportation planners, practitioners, and the wider field of Urban Planning to be mindful of when building projects in urban environments to be sensitive to the legacies of systemic racism and disinvestment so that we may build more equitable cities.

Citations

- Brand, A. L., Lowe, K., & Hall, E. (2020). Colorblind transit planning: Modern streetcars in Washington, DC, and New Orleans. *Journal of Race, Ethnicity and the City*, 0(0), 1–22. <https://doi.org/10.1080/26884674.2020.1818536>
- Lowe, K., & Grengs, J. (2018). Private Donations for Public Transit: The Equity Implications of Detroit's Public-Private Streetcar. *Journal of Planning Education and Research*. <https://doi.org/10.1177/0739456X18761237>
- Fischer, Lauren Ames. "Tax Discrimination District': The Intersection of Race and Transit Value Capture." *Journal of the American Planning Association*, January 6, 2022, 1–13. <https://doi.org/10.1080/01944363.2021.1987968>.
- Golub, Aaron, Richard A. Marcantonio, and Thomas W. Sanchez. "Race, Space, and Struggles for Mobility: Transportation Impacts on African Americans in Oakland and the East Bay." *Urban Geography* 34, no. 5 (August 1, 2013): 699–728. <https://doi.org/10.1080/02723638.2013.778598>.
- Culver, G. (2017). Mobility and the making of the neoliberal "creative city": The streetcar as a creative city project? *Journal of Transport Geography*, 58, 22–30

Key Words: Transportation, Race, Rustbelt, Capital Projects

TRAVEL BEHAVIORS OF SCHOOL-AGED CHILDREN: EVALUATING THE EFFECTS OF FLORIDA'S SAFE ROUTES TO SCHOOL PROGRAM IN THE LOCAL CONTEXT

Abstract ID: 1524

Individual Paper Submission

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In July 2005, the Safe Routes to School (SRTS) program, as part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), was adopted. The program objectives are to support safe walking and bicycling, and to promote active commuting among schoolchildren. Florida and New York introduced the first U.S. SRTS programs in 1997 (Stewart, 2011). In 2012, the SRTS program was combined with

other walking and bicycling programs into the Transportation Alternatives Program (TAP), and SRTS projects are no longer completely federally funded. Nevertheless, the Florida Department of Transportation (FDOT) has maintained its commitment to continue funding SRTS projects.

A number of recent studies have shown that SRTS programs increase active commuting to and from school among youth (McDonald, Steiner, Lee, Rhoulac Smith, Zhu, & Yang, 2014; Stewart, Moudon, & Claybrooke, 2014). This effect has attracted special attention in Florida, where the physical activity level of youth is still lower than the national average (Centers for Disease Control and Prevention, 2014). Meanwhile, evidence is mixed regarding the impacts of SRTS programs in reducing pedestrian and bicyclist injuries and improving traffic safety for school-age children (Burbidge, 2020; DiMaggio, Frangos, & Li, 2016). However, safety concerns, together with the built environment exert a great impact on active travel-related decisions.

In this study, we aim to evaluate the effectiveness of Florida's investment in the SRTS program after many years of implementation. This study investigates multiple aspects of the program implementation and further examines the extent to which program objectives are achieved, specifically regarding changes in travel modes, in varied local contexts.

A cluster analysis is first conducted to identify the groupings of the local environment based on the walkability and safety level captured by the number of non-motorist crashes around schools during school years. We then include schools with and without SRTS interventions between 2007 and 2020. Multivariate regression modeling is conducted to test the effect of SRTS programs on travel behaviors, regardless of the differences in efforts, in different local contexts, after controlling for school types, neighborhood socioeconomic characteristics, and survey design. Finally, the impact of intervention types and years active in the program are included and examined in additional models.

SRTS programs are expected to increase active commuting among schoolchildren. However, impacts may vary by local contexts and the nature of treatments. The results may show that certain combinations of treatments are more effective in some scenarios than others.

This study will examine how effective Florida's SRTS programs are in promoting active commuting to and from schools in distinctive local contexts. For planning practice in Florida, certain types of SRTS efforts should be prioritized depending on the schools, the built environment, local limitations and needs.

Citations

- McDonald, N. C., Steiner, R. L., Lee, C., Rhoulac Smith, T., Zhu, X., & Yang, Y. (2014). Impact of the safe routes to school program on walking and bicycling. *Journal of the American Planning Association*, 80(2), 153-167.
- Boarnet, M. G., Anderson, C. L., Day, K., McMillan, T., & Alfonzo, M. (2005). Evaluation of the California Safe Routes to School legislation: urban form changes and children's active transportation to school. *American journal of preventive medicine*, 28(2), 134-140.
- DiMaggio, C., Frangos, S., & Li, G. (2016). National Safe Routes to School program and risk of school-age pedestrian and bicyclist injury. *Annals of epidemiology*, 26(6), 412-417.
- Stewart, O., Moudon, A. V., & Claybrooke, C. (2014). Multistate evaluation of safe routes to school programs. *American journal of health promotion*, 28(3_suppl), S89-S96.
- Burbidge, S. K. (2020). Gauging the Effectiveness of Safe Routes to School Projects (No. UT-20.10). Utah. Dept. of Transportation. Research Division.

Key Words: Safe Routes to School, travel behavior, children's travel, Florida, pedestrian and bicycle safety

CHILD CARE ACCESS AND CHILD CARE TRAVEL – WHAT'S THE RELATIONSHIP?

Abstract ID: 1525

Individual Paper Submission

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Without access to affordable child care, working outside of the home is difficult or, in many cases, impossible. The need for child care is particularly pressing for mothers who continue to bear disproportionate responsibility for the care of their children. Child care has long been in short supply, a shortage that became even more acute during the COVID-19 crisis. The availability of child care varies across neighborhoods by income, race, and ethnicity, potentially influencing labor market participation, particularly for women.

In this study, we hypothesize that the relative supply of child care is associated with higher rates of child care use and—for parents who use child care—shorter-distance travel. To test these relationships, we draw on confidential data

from the most recent (2017) National Household Travel Survey California Add-On, a sample of 26,095 households. The confidential version of these data include detailed information on trip destinations (location name, latitude, longitude). Child care trips are not easily identifiable in the survey data, one of our initial findings. To identify child care trips, we match potential child care destinations to confidential data from the California Department of Social Services containing the location of all child care centers in California. We also use the child care dataset to develop a distance-weighted measure of child care access: estimated child care capacity weighted by the potential demand for child care (the number of young children in the census tract). We then develop statistical models to predict (a) the likelihood of making a child care trip and (b) child care trip distance (from home), controlling for other factors.

There is a substantial body of scholarship on commute travel, job access, and employment. In contrast, there is very little research on child care travel, access, and use. For most women with children, employment is predicated not only on their relative access to jobs but on their ability to easily access child care. An adequate supply of child care influences parents' ability to select into child care that best meets their needs. This finding underscores the importance of planning and policy interventions in three areas: improved data collection (on child care use and travel), public investments in child care (particularly in neighborhoods with the largest child care supply gaps), and transportation services and interventions to help families overcome spatial barriers to child care access.

Citations

- Johansen, Anne S., Arleen Leibowitz, and Linda J. Waite (1996). "The Importance of Child-Care Characteristics to Choice of Care," *Journal of Marriage and Family*, 58(3): 759-772.
- Malik, Rasheed, Katie Hamm, Leila Schochet, Christina Novoa, Simon Workman, and Steven Jessen-Howard (2018). *America's Child Care Deserts 2018*. Washington, D.C.: Center for American Progress.
- Ritzdorf, Marsha (1993). "Land Use, Local Control, and Social Responsibility: The Child Care Example," *Journal of Urban Affairs*, 15(1): 79-91.
- Satoh, Keisho, Koya Tsukahara, and Kayoko Yamamoto (2018). "Location Evaluation of Childcare Facilities Focusing on Transportation in Japanese Urban Areas," *Journal of Geographic Information System*, 10: 521-538.

Key Words: child care trips, gender, women's travel, child care supply

SO YOU THINK YOU CAN WALK: A LEVEL OF TRAFFIC STRESS FRAMEWORK OF EVALUATING ACCESSIBILITY AND MULTIMODALITY IN SUBURBAN MARYLAND

Abstract ID: 1558

Individual Paper Submission

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Walk accessibility has long been studied in transportation and urban planning literature. A classical walk accessibility measurement considers locations of various destinations of interest, pedestrian road network, the natural impedance against walking (e.g., elevation, temperature, and precipitation), and friendliness of built environment for pedestrians (e.g., road connectivity, tree canopy, and pedestrian facilities) (Kuzmyak et al., 2014). Due to a distaste for walking long time/distance, an empirically derived decay function is typically applied to further confine the reachable limit for a typical pedestrian (Kuzmyak et al., 2014). However, measuring walk accessibility is a tricky business: Not only is it difficult for planners to obtain high-resolution geospatial data of natural and built environment features (Ewing & Handy, 2009), especially in a suburban environment, but also it requires empirical evidence of the connections between the various factors for/against walking and the number of destinations reachable within a reasonable time threshold.

In this study, we propose a level of traffic stress (LTS) evaluation framework that refines the measurement of walk accessibility. We design two sets of LTS grading criteria that apply to evaluate walking conditions along street segments and across intersections. Unlike the existing LTS-type methods that focus on existence of sidewalk and traffic volume/speed (Rodriguez-Valencia et al., 2022), our LTS grading criteria aim to approximate the actual impact of sidewalk and intersection conditions, as well as traffic signal delays, on walking speed. We manually identify street segment features and intersection features on arterial roads at the Maryland Transit Authority's Purple Line (currently under construction and projected to start operation in 2026) station areas based on Google Street View and field observations. We then code a LTS network based on the LTS grading criteria. We evaluate walk accessibility on

both a stress-free baseline and the LTS baseline pedestrian networks with Purple Line coded into the transit network. Average walk time to station, walk accessibility to employment, and transit accessibility to employment (with walk connections) are compared between the two baselines to identify accessibility gaps. In addition, we calculate walk accessibility for an improved scenario based on the proposed facility upgrades by two counties home to the Purple Line corridor, such as reduced traffic speed limit, speed enforcement, widen/buffered sidewalk, and high visibility crosswalk.

We run accessibility analyses using Cube Access, a GIS-based software package with a detailed all-street multimodal network, census block level employment and socio-demographic data, and an array of points of interest (POIs). The empirical results underscore a significant difference in the number of walk reachable jobs/ walk time to a Purple Line station between the two baselines. In particular, our LTS method is able to account for the critical impedance caused by auto-oriented intersection design. Moreover, we weight walk accessibility results by equity metrics, such as percentage adult poverty population at the census block level. The weighted results indicate that walk and transit accessibility are worse in areas of high poverty concentration. The equity implications of our analysis point to the urgent need to address walk accessibility gaps in socially disadvantaged, auto-centric suburban communities, where a significant subpopulation's mobility relies on public transit.

Our study contributes to both planning research on walk accessibility and planning practice on pedestrian facility gaps and improvements in suburban America. We argue that the suburban arterial road network historically favors car mobility. The traditional walk accessibility measurement may not accurately reflect the hostile built environment for pedestrians. Without revamping the auto-oriented street and intersection design, we are unlikely to observe noticeable improvements. Our LTS grading framework provides new ideas for transportation planners and practitioners to re-evaluate the suburban pedestrian network.

Citations

- Kuzmyak, J.R., Walters, G., Bradley, M. & Kockelman, K. (2014). NCHRP Report 770: Estimating Bicycling and Walking for Planning and Project Development. Transportation Research Board, Washington DC.
- Kuzmyak, J. R., Baber, C., & Savory, D. (2006). Use of walk opportunities index to quantify local accessibility. Transportation Research Record: Journal of the Transportation Research Board, 1977(1), 145–153. <https://doi.org/10.1177/0361198106197700117>
- Ewing, R., & Handy, S. (2009). Measuring the unmeasurable: urban design qualities related to walkability. Journal of Urban Design, 14(1), 65–84. <https://doi.org/10.1080/13574800802451155>
- Rodriguez-Valencia, A., Ortiz-Ramirez, H. A., Simancas, W., & Vallejo-Borda, J. A. (2022). Level of pedestrian stress in urban streetscapes. Transportation Research Record: Journal of the Transportation Research Board. <https://doi.org/10.1177/03611981211072804>

Key Words: walk accessibility, level of traffic stress (LTS), multimodality, pedestrian, light-rail transit

CHANGES IN PEOPLE'S MOBILITIES DUE TO THE COVID-19 PANDEMIC: FOCUSING ON THE EFFECTS OF NETWORK CAPITAL

Abstract ID: 1569

Individual Paper Submission

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The outbreak of the COVID-19 pandemic is causing significant changes in the lifestyles of urban residents (Fatmi, 2020). Commuting to work has been considerably replaced by teleworking, while in-person classes have been shifted to online and virtual classes during this COVID-19 pandemic. The government-imposed social distancing measures have restricted the number of people allowed to attend private gatherings. These unprecedented changes in people's daily lives also led to dramatic changes in their mobilities, which not only refer to the physical movement of human beings, but also cover a broad spectrum of social aspects (Kaufmann et al., 2004; Sheller & Urry, 2006; Urry, 2007). The mobilities literature suggests that network capital, the capability of mobility, is inherent at the individual and regional levels, and it affects physical and non-physical mobility. Given that the pandemic has reduced people's physical movement and face-to-face activities while promoting non-face-to-face interactions in online spaces, it is difficult to determine whether this pandemic has worsened their mobility. In this context, this study analyzes the effects of network capital on the changes in people's mobilities before and after the COVID-19 pandemic, and investigates how this has affected the changes in their quality of life.

For this study, we conducted an online survey of 1,007 adults aged 19 to 99 living in South Korea to measure the degree of network capital in both offline and online interactions and the changes in their mobilities as well as changes in their quality of life in real and virtual spaces before and after the COVID-19 pandemic. The key factors for offline network capital at the individual level include personal physical capability, capability for the use of transportation,

and offline social capital, while online network capital involves digital literacy, capability for the ownership of ICT devices, and online social capital. In addition, the network capital factors in common consist of flexibility in time and income. Moreover, for the network capital at the regional level, the availability of transportation infrastructure, accessibility of facilities, and availability of telecommunication infrastructure are included, along with other regional variables, such as economic power and level of social mix. We set up a model to analyze the effects of these factors on the changes in individual mobility both in real and virtual spaces and their quality of life before and after the pandemic and examine their causal relations by using multilevel structural equation modeling.

The findings will be as follows. First, the lower the offline network capital at the individual level, the lower the physical mobility in real spaces, which will ultimately negatively affect their quality of life. In particular, there will be a noticeable decline in the physical mobility of the elderly group, whose offline network capital tends to be low in general. Second, the higher the online network capital at the individual level, the greater the virtual mobility, which will have a positive effect on their quality of life. Specifically, the virtual mobility of young adults with a high level of online network capital will increase substantially, while there will be no significant difference in their quality of life as this effect offsets the decrease in physical mobility caused by the pandemic. Third, the poorer the regional level of offline and online network capital, the lower the physical mobility as well as the virtual mobility of local residents, which will further deteriorate their quality of life. The findings suggest that we should strengthen socially underprivileged people's capabilities for mobility by not only improving their physical mobility and access to means of transportation and facilities, but also increasing their network capital in virtual spaces.

Citations

- Fatmi, M. R. 2020. COVID-19 impact on urban mobility. *Journal of Urban Management*, 9(3): 270-275.
- Kaufmann, V., Bergman, M. and Joye, D. 2004. Mobility: mobility as capital. *International Journal of Urban and Regional Research*, 28(4): 745-756.
- Sheller, M. and Urry, J. 2006. The new mobilities paradigm, *Environment and Planning A*, 38: 207-226.
- Urry, J. 2007. *Mobilities*. Polity Press, Cambridge: United Kingdom.

Key Words: Mobilities, COVID-19 pandemic, network capital, physical and virtual mobility, multilevel structural equation modeling

GIVE ME AN INTERESTING PLACE TO WALK: MIXED-METHODS EVIDENCE OF HOW URBAN WALKERS PREFER PERCEPTUALLY ENGAGING STREETSCAPES

Abstract ID: 1575

Individual Paper Submission

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Walkability analyses have traditionally focused on built environmental factors that influence the practicality of walking, such as sidewalk availability and destination accessibility (Shields et al., 2021). While undoubtedly important, these factors fail to represent psychological influences that may substantially mediate whether people perceive places as walkable and ultimately decide to walk there. Urban designers have long argued that streetscapes affect walking enjoyability, and research from the field of environmental psychology describes how spaces that are more information-rich and legible may be preferred because they afford natural tendencies toward understanding and exploration (Ewing & Handy, 2009; Kaplan & Kaplan, 1989). Nonetheless, there remains a dearth of empirical research unpacking how streetscapes are evaluated by pedestrians and influence walking behavior.

My doctoral dissertation targeted this empirical gap with three studies examining relationships between streetscapes and pedestrian preferences using methods ranging from field interviews to physiological sensing and route choice modeling. This paper describes a simple but important thread that connects findings from each of these studies: streetscapes that were preferable for walking tended to offer more opportunities for perceptual engagement. Less favorable streetscapes, by contrast, tended to be comparatively dull or vacant, offering little for passersby to perceive and understand. While bolstering walkability through more engaging streetscapes is a notably ambiguous recommendation—it might involve inserting any number of features that range enormously in scale and purview, including windows, architectural details, trees, planters, more buildings, smaller setbacks, or land use shifts—it reinforces the importance of a simple need: an interesting place to walk.

The first of these studies used semi-structured walking interviews to investigate how walkers without expertise in planning and design observed streetscapes and incorporated them into evaluations of walkability. While subjects were universally aware of features that composed streetscapes, such as buildings, trees, storefronts, and other land uses, they were bifurcated about which types of streetscapes they preferred. Some favored those representing quintessential walkable urbanism—street-facing storefronts along the sidewalk—while others preferred more natural, park-like frontages. Both, however, emphasized that their preferred streetscapes were visually engaging and examined their features in notable detail. Contrastingly, subjects tended to describe less-preferred streetscapes as bland or boring

and paid little attention to their subtleties. Engagement was a clear marker of streetscape preference, even as preferred streetscapes varied between subjects.

In a parallel study, I used physiological sensing to further examine this engagement-preference relationship. The same subjects who participated in walking interviews wore a wrist-mounted sensor that measured electrodermal activity (EDA), an indicator of emotional activation or excitement. Subjects tended to be more activated, an indicator that they were engaging with perceptual stimuli, alongside streetscapes they preferred. Conversely, they tended to be less activated, consistent with boredom, along streetscapes they disliked.

In the final study, I investigated revealed preferences for streetscape characteristics using route choice models. The study compared GPS-tracked walking routes from a travel study in San Francisco against algorithmically derived alternatives. Streetscape characteristics were measured throughout the city based on spatial datasets, then summarized along observed and alternative routes. Models indicated preference for routes more continuously lined with buildings and with smaller setbacks, more storefronts, and more tree canopy, characteristics that likely promote perceptual engagement by providing more complex and accessible visual surroundings. These results show that streetscapes may measurably shape walking behavior and that perceptual engagement may be a key mechanism driving these decisions.

While it is unsurprising that walkers preferred streetscapes with which they could perceptually engage, it is notable that these studies consistently indicated preference for more engagement with streetscapes rather than less, reinforcing the importance of streetscapes for walkability planning.

Citations

- Ewing, R., & Handy, S. (2009). Measuring the Unmeasurable: Urban Design Qualities Related to Walkability. *Journal of Urban Design*, 14(1), 65–84. <https://doi.org/10.1080/13574800802451155>
- Kaplan, R., & Kaplan, S. (1989). *The Experience of Nature: A Psychological Perspective*. Cambridge University Press.
- Shields, R., Gomes da Silva, E. J., Lima e Lima, T., & Osorio, N. (2021). Walkability: A review of trends. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 0(0), 1–23. <https://doi.org/10.1080/17549175.2021.1936601>

Key Words: walkability, streetscapes, environmental psychology, route choice, biosensing

MOBILITY DISSONANCE: DAILY TRAVEL, ENVIRONMENTAL EXPOSURES, AND WELLBEING IN DELHI

Abstract ID: 1580

Individual Paper Submission

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Despite the rapid pace of change and investment, most Delhi, India residents continue to struggle to get where they need to go (Dasgupta, 2015). During travel, residents are directly exposed to the urban environment, with its air pollution, noise, and natural and built features that vary significantly in their quality and maintenance (Patsarika et al., 2018). Delhi planners' goals of accessibility and sustainability depend on minimizing adoption of auto travel in favor of rail transit, buses, bicycling, and walking, but the perceived oppressiveness of the urban environment encourages auto usage (Mauro and Hellebrandt, 2016). Environmental exposures during travel are likely borne most heavily by people with limited resources, often living in neighborhoods with informally planned and incomplete infrastructures. Therefore, impacts on wellbeing are likely to be distributed inequitably across neighborhoods and communities. The literature on travel and environment often frames mobility, and walking in particular, as a “dosage” mechanism for receiving the benefits or disbenefits of environmental exposure (Ettema and Smajic, 2015). However, there is little investigation of how exposures, or perceptions of exposure, may result in variations in travel behavior and mode choice. Therefore, this research investigates the relationship between environmental exposure and two related outcomes: daily travel and subjective wellbeing. Does exposure to negative environmental conditions shape the choice to travel by non-auto modes? Additionally, does exposure during daily travel have a significant effect on subjective wellbeing, and if so, how are those effects distributed across travelers?

These questions are addressed through a survey of two Delhi neighborhoods with distinct environmental contexts. The survey of one thousand adults focuses on neighborhoods – Bhalswa Dairy and Batla House – with primarily low-income populations that have traditionally received little positive attention or investment from authorities. Both neighborhoods are sites of informal housing and transportation infrastructure. Batla House is subject to typical Delhi stressors including noise and air pollution, while Bhalswa Dairy also faces exposure to features including polluted water bodies and a large landfill. Constructs measured in the survey include daily travel, perceptions of the urban environment, and subjective wellbeing in addition to demographic characteristics. Travel patterns and wellbeing are

examined across neighborhoods, identifying variability in mode choice across neighborhoods as it covaries with perceived environmental quality. Mode choice modelling examines the effect of neighborhood and perceived exposures, controlling for other factors. The results show that for residents of both neighborhoods, perceptions of exposure are associated with significantly different travel choices. Notably, effects on subjective wellbeing are not explained by travel mode alone, but by the interaction of travel mode and perceptions of environmental quality. Given this result, I propose the concept of “mobility dissonance” for framing future research. Mobility dissonance occurs when individuals must travel in environments that they perceive as being unhealthful or oppressive, reducing subjective wellbeing and propelling individuals to reduce dissonance by either altering their behavior or perceptions. The findings underscore that the development of a sustainable, equitable transportation system in Delhi and other developing cities cannot focus solely on investments in large-scale, regional networks, but must also address local infrastructure and environmental conditions that significantly determine the choice to travel inside or outside of a car. In particular, the research contributes to a conceptualization of travel behavior and outcomes that account for experiential dimensions of travel that complement standard models of destination accessibility.

Citations

- Dasgupta, R. (2015). *Capital: The Eruption of Delhi* (Reprint edition). Penguin Books.
- Ettema, Dick, and Ifeta Smajic. (2015). “Walking, Places and Wellbeing.” *The Geographical Journal*. 181:2, 102-109. <https://doi.org/10.1111/geoj.12065>.
- Mauro, Paolo, and Tomas Hellebrandt. (2016). *World on the Move: Consumption Patterns in a More Equal Global Economy*. Columbia University Press.
- Patsarika, M., Schneider, T., & Edwards, M. (2018). ‘If I was King of India I would Get All the Horns Out of Cars’: A Qualitative Study of Sound in Delhi. *International Journal of Urban and Regional Research*, 42(1), 74–89. <https://doi.org/10.1111/1468-2427.12470>

Key Words: Travel behavior, environment, mode choice, wellbeing, India

QUANTIFYING THE IMPACT OF BUILT ENVIRONMENT ON URBAN CONGESTION: A MULTI-CITY STUDY

Abstract ID: 1581

Individual Paper Submission

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With increasing urban populations and limited road resources, traffic congestion has become a severe issue, resulting in tremendous economic losses, air pollution, and deteriorated public health. The impact of urban built environment on traffic congestion has been illustrated in many previous studies. To better design future smart and sustainable cities, it is essential to quantifying the relationship between the urban built environment and traffic congestion patterns. Prior studies related to this topic are largely constrained by the availability and granularity of the data. Conventional traffic congestion data sources are spatially sparse and vary drastically across cities, making it difficult to zoom into the road segment level. Previous studies seldom incorporated fine-scale environment differences in different cities, which may not be generalizable to different settings and fail to get conclusive results. Another key challenge lies in the lack of comprehensive methods to quantify street network structures, particularly at the road segment level. To address these issues, this study explores the applicability of several large-scale open data sources, such as OpenStreetMap (OSM), Uber movement, and LandScan, to describe the built environment and measure traffic congestion across different cities at the road segment level. To automate the OSM data retrieval process, we use OSMnx, an open-source Python package that provides researchers with an easy and programmable way to acquire and analyze large amounts of street network data. The built environment features are divided into five categories (i.e., street network, facilities, land use, population, and geolocation) as independent variables, including several unique features defined in this research (e.g., road angle, degree difference). Traffic congestion is estimated by Uber Movement, which provides traffic speed data on many car-accessible roadways in different cities at different time periods, by calculating the congestion ratio. In this project, we focus on six major global cities: Kyiv (Ukraine), London (UK), New York (US), San Francisco (US), Sao Paulo (Brazil), and Seattle (US). The reason for choosing these cities is that their speed data is available in the Uber movement. In addition, after merging speed data and street network data obtained from OSM, these cities still have a sufficient sample size. To quantify the built environment’s impact on traffic congestion patterns across different cities at the road segment level, we apply regression, and machine learning models to uncover linear and nonlinear relationships between different factors and interpret the model with factors’ relative importance through partial dependence plots with the representation of variables’ range and distribution. The results from six cities around the world show that selected characteristics can explain approximately 22% -38% of the traffic congestion, and the impact of different feature types on traffic congestion varies. Most of these attributes exhibit consistent effects across other cities. The newly proposed metrics in this study showed a high significance in the results. These findings can help identify congested road segments and provide important insights regarding how to design street networks to minimize traffic congestion. Our

research shows the great potential of leveraging the emerging open data to address traditional urban problems. These data allow for a larger amount of intra-city traffic data and make multi-city comparisons possible, suggesting a new approach for studying related traffic problems. The model proposed in this study quantifies the relationship between the built environment and traffic congestion, allowing a general estimation of potential congestion areas in cities in the absence of traffic data or the early stages of road planning. In addition, in selecting built environment features, we define some new features of the road network structure (e.g., degree difference), which are found to be significant in congestion prediction and can provide fresh ideas for future research.

Citations

- Boeing, G. (2017). OSMnx: New methods for acquiring, constructing, analyzing, and visualizing complex street networks. *Computers, Environment and Urban Systems*, 65, 126–139.
- Loo, B. P. Y., & Huang, Z. (2021). Delineating traffic congestion zones in cities: An effective approach based on GIS. *Journal of Transport Geography*, 94, 103108.
- Qin, K., Xu, Y., Kang, C., & Kwan, M.-P. (2020). A graph convolutional network model for evaluating potential congestion spots based on local urban built environments. *Transactions in GIS*, 24(5), 1382–1401.

Key Words: traffic congestion, built environment, road networks, cross-city comparison, urban big data

ACTIVITY-TRAVEL ATTITUDES AND INTENTIONS AMONG DIFFERENT COMMUNITIES FOLLOWING COVID-19

Abstract ID: 1585

Individual Paper Submission

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COVID-19 has triggered a high intensity of public fear which impedes individuals' activity-travel behaviors. We discuss activity and travel together according to the activity-based models that travel demand is derived from people's daily activity patterns. Prior research has demonstrated fear can significantly impact people's choices in travel activities and destinations (Kang et al, 2012). However, compared with studies about individuals' risk perceptions during natural hazards, the theoretical and empirical bases for public psychology regarding social disasters are not many. Moreover, different communities differ in activity-travel intentions and behaviors. Many researchers have claimed that individuals' perceived severity (i.e., the degree to which individuals are concerned about the consequences of contracting COVID-19) increase with age. Conversely, perceived vulnerability (i.e., the probability of contracting COVID-19) is higher in the youth than older groups (Pasion et al., 2020; Bruine de Bruin, 2021). Zheng et al. (2021) conclude that individuals' fear of travel is mainly triggered by their perceived severity/vulnerability rather than the actual COVID-19 severity. Overall, COVID-19 provides an opportunity to investigate what the psychological reasons are behind public's behavioral changes and unveil different communities' activity-travel attitudes and intentions following social disasters.

Based on the Theory of Planned Behavior (TPB) and the Protection Motivation Theory (PMT), the research goal is to investigate how attitudes, subjective norms, and perceived behavioral control are correlated with individuals' activity-travel intentions among communities that feature different socio-economic status (including age and gender), individual medical conditions, and exposure to interventions and information. There are two research questions specifically: 1) What kinds of perceived severity/vulnerability, attitudes, and activity-travel intentions are held by communities with different characteristics? 2) How are attitudes, subjective norms, and perceived behavior control correlated with individuals' activity-travel intentions?

The research surveys samples in four Florida counties that rank top five based on their largest changes in travel/staying home among 67 Florida counties, by comparing daily mobility data of 2021 to that of 2019 from the Bureau of Transportation Statistics (BTS) (2021). The four counties include the Orange County (-13.2% in travel per capita), Sumter County (+17.9% in travel per capita), Gulf County (-24.0% in population staying home), and Osceola County (+22.3% in population staying home), respectively. These results are obtained from the authors' other paper which was presented in ACSP 2021 and is under review for publishing. Noticeably, the Sumter County also has a highest ratio of older adults over 65 years old among all the US counties. We plan to conduct the survey in summer 2022 and analyze the data using Structural Equation Modeling.

This research has two unique features compared to studies of its kind and thus contribute twofold to the literature. Firstly, the research fills the gap that not much is known about different communities' disaster psychologies toward COVID-19. Specifically, most other studies do not include perceived severity/vulnerability from the PMT. Meanwhile, they often collect general demographics about respondents but do not target COVID-19 vulnerable features. Moreover, the groupings of the features' indicators do not align with those of CDC which shows COVID-19 deaths correspondingly to individual groups. Secondly, the survey of this research focuses on the period from August 2021 to

February 2022, during which the US and Florida show a quite stable travel trend lower than that of 2019 based on the data from BTS (2022). In fact, the trend of the US has stayed almost consistent since around April 2021 (BTS, 2022). Therefore, the findings of this research show public's activity-travel psychology based on the adjusted travel trend that has lasted and may still sustain for a time.

Citations

- Bruine de Bruin, W. (2021). Age differences in COVID-19 risk perceptions and mental health: Evidence from a national US survey conducted in March 2020. *The Journals of Gerontology: Series B*, 76(2), e24-e29.
- Bureau of Transportation Statistics, 2022. Daily Travel During COVID-19 Pandemic. Bureau of Transportation Statistics. Retrieved from <https://www.bts.gov/browse-statistical-products-and-data/trips-distance/daily-travel-during-COVID-19-pandemic>.
- Kang, E. J., Scott, N., Lee, T. J., & Ballantyne, R. (2012). Benefits of visiting a 'dark tourism' site: The case of the Jeju April 3rd Peace Park, Korea. *Tourism Management*, 33(2), 257-265.
- Pasion, R., Paiva, T. O., Fernandes, C., & Barbosa, F. (2020). The AGE effect on protective behaviors during the COVID-19 outbreak: Sociodemographic, perceptions and psychological accounts. *Frontiers in Psychology*, 11, 2785.
- Zheng, D., Luo, Q., & Ritchie, B. W. (2021). Afraid to travel after COVID-19? Self-protection, coping and resilience against pandemic 'travel fear'. *Tourism Management*, 83, 104261.

Key Words: COVID-19, travel, activity engagement, theory of planned behavior, protection motivation theory

RIDING TRANSIT TO PARKS AND TRAILS: OPPORTUNITIES, BARRIERS, AND IMPLICATIONS FOR TRANSIT AGENCIES

Abstract ID: 1598

Individual Paper Submission

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Introduction. Regional open spaces – such as large parks and trail systems – provide numerous benefits to human health, community wellbeing, and ecosystem services. Yet white and higher-income people have better walking access to regional open spaces than groups experiencing marginalization (Park et al., 2021). Further, many national parks and forests have experienced increased traffic congestion due to the rising popularity of outdoor recreation, with negative impacts on visitor experience and environmental quality (National Park Service, 2020). To address these two issues, transit agencies, public land managers, and nonprofits in the U.S. have established numerous transit-to-parks (T2P) initiatives, including some to connect low-income communities of color to regional open spaces via transit.

Research to date on T2P experiences is limited and has not focused on groups experiencing marginalization (Wilson et al., 2018). Building on recent mobility justice research (Coren et al., 2022; Lubitow et al., 2020), in this qualitative study we examine the experiences of riders using T2P services in Utah's Wasatch Front.

Research questions. How do people describe their experiences of transit-to-parks services, and what are some of the barriers to using transit to reach regional open spaces? What are the values and motivations that encourage people to ride transit to regional open spaces? What transit improvements would encourage people to ride transit to regional open spaces? Using an environmental justice lens, we explore how answers to these questions vary by the demographics of respondents, namely race/ethnicity, gender, and physical abilities.

Methods. The Wasatch Front, the largest metropolitan area in Utah, includes numerous natural areas, and its transit agencies have offered some T2P services in recent years. For this study, we recruited 25 residents of the Wasatch Front who are regular transit riders and have some experience riding transit to regional open spaces. Our sample includes significant variations in race/ethnicity, gender, and physical abilities. We conducted interviews with these transit riders over Zoom or the phone, with questions focusing on their T2P experience, their motivations to use such services, and possible service improvements. We analyzed the interview transcripts using constant comparative analysis.

Results. We find that reaching regional open spaces via transit can be quite difficult for many users despite a few targeted initiatives and the region's proximity to natural amenities. Barriers included difficult or dangerous last-mile connections to access trailheads from transit stops, lack of information about parks and hikes reachable via transit, and infrequent weekend service. People of color, women, and people with physical disabilities face particularly large barriers, including, respectively, distance to regional open space and racial discrimination, safety concerns, and lack of adequate ADA service in routes reaching parks or trails. Among the positive T2P experiences, respondents

described social interactions while riding transit, which contributed to a sense of adventure and learning about parks and trails. Further, values and motivations to use T2P services include environmental reasons, the convenience of not having to park one's car at overcrowded trailheads, and the cheap cost of riding transit. Also, to improve the use of T2P services, respondents suggested that transit agencies and public land managers should address the aforementioned barriers, conduct marketing campaigns targeted to different demographic groups, create weekend shuttle services to popular parks and trailheads, and partner with organizations seeking to increase diversity in outdoor recreation (e.g., Latino Outdoors).

Implications. Our results suggest the advantages of a holistic approach to planning T2P initiatives, with significant partnership opportunities between transit and public lands agencies. Specifically, planners could integrate changes to transit service (e.g., shuttles), improvements to bike/pedestrian infrastructure near parks and trailheads, informational campaigns, and outreach and programming with groups experiencing marginalization.

Citations

- Coren, C., Lowe, K., & Barajas, J. M. (2022). Commuting carless: A qualitative study of transportation challenges for disadvantaged job seekers in Chicago, IL. *Transportation Research Record*. <https://doi.org/10.1177/03611981221076126>
- Lubitow, A., Abelson, M. J., & Carpenter, E. (2020). Transforming mobility justice: Gendered harassment and violence on transit. *Journal of Transport Geography*, 82, 102601. <https://doi.org/10.1016/j.jtrangeo.2019.102601>
- National Park Service. (2020). NPS national transit inventory and performance report, 2020. National Park Service. https://www.nps.gov/orgs/1548/upload/NPS-Inventory_2020-508_FINAL.pdf
- Park, K., Rigolon, A., Choi, D., Lyons, T., & Brewer, S. (2021). Transit to parks: An environmental justice study of transit access to large parks in the U.S. West. *Urban Forestry & Urban Greening*, 60, 127055. <https://doi.org/10.1016/j.ufug.2021.127055>
- Wilson, D. L., Hallo, J. C., McGuire, F. A., Sharp, J. L., & Mainella, F. P. (2018). Transportation mode choice among baby boomer visitors in national parks: Exploring the concept of freedom. *Travel Behaviour and Society*, 13(June), 61–70. <https://doi.org/10.1016/j.tbs.2018.06.001>

Key Words: Transit, Green space, Environmental justice, Mobility justice, Outdoor recreation

CAN FLEXRIDE MILWAUKEE MICROTRANSIT SERVICE HELP SOLVE THE SPATIAL MISMATCH?

Abstract ID: 1600

Individual Paper Submission

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The Milwaukee region suffers significantly from spatial mismatch: residential segregation limits the housing mobility of minority groups and consequently reduces their access to suburbanized jobs (Kain, 1968). Improving transportation service is often regarded as a feasible solution to address the spatial mismatch problem (Fan, 2012), especially with the potential of new and emerging mobility technologies (Palm et al., 2021). In this context, we experimented with a new microtransit service that aims to address the spatial mismatch in the Milwaukee region, by connecting job-poor neighborhoods in the City of Milwaukee with job-rich employment areas in surrounding suburban communities. Reflecting on our experience, we ask the following question: can a new microtransit service help mitigate the impact of spatial mismatch on members of Milwaukee's inner-city labor force?

Our pilot microtransit service is called FlexRide Milwaukee and is funded by a grant from the National Science Foundation (Award ID: 2133337). The pilot period is February-October 2022. Collaboration across organizations and political jurisdictions has been central to implementing FlexRide Milwaukee. Our core project team is composed of researchers from the University of Wisconsin-Milwaukee (UWM) and practitioners from the Southeastern Wisconsin Regional Planning Commission (SEWRPC). Other project partners include workforce development agencies, business organizations, local governments, and community-based organizations. The service itself is managed by a for-profit company using shared vehicles and a ride-matching app. UWM leads the research activities and documents discussion and decision-making during the whole process.

Our exploratory research approach involves qualitative analysis of organizational coordination, user perceptions of the service, and early user experiences. While FlexRide Milwaukee benefits from multi-organizational collaboration and considerable political and community support, we are finding notable barriers that need to be addressed for this new service to be sustainable in Milwaukee and transferable to other regions. These barriers include: labor market conditions (e.g., the great resignation, safety concerns during COVID), institutional barriers (e.g., to arrange voucher purchases for unbanked participants), employer needs and constraints, service provider limitations, user

understanding of the service, and research needs and regulations.

This experiment accumulates knowledge for implementing a new, innovative transportation service to solve the spatial mismatch problem. This knowledge can inform the design, marketing, operation, and management of new mobility services in other metropolitan regions to improve social justice by leveraging emerging mobility technologies.

Citations

- FAN, Y. 2012. The Planners' War against Spatial Mismatch Lessons Learned and Ways Forward. *Journal of Planning Literature*, 27, 153-169.
- KAIN, J. F. 1968. Housing Segregation, Negro Employment, and Metropolitan Decentralization. *Quarterly Journal of Economics*, 82, 175-197.
- PALM, M., FARBER, S., SHALABY, A. & YOUNG, M. 2021. Equity analysis and new mobility technologies: toward meaningful interventions. *Journal of Planning Literature*, 36, 31-45.

Key Words: Microtransit, implementation, social justice

AN EFFICIENT APPROACH TO ROUTE CHOICE FOR EVACUATION PLANNING OF PERSONS WITH DISABILITIES

Abstract ID: 1614

Individual Paper Submission

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Evacuating persons with disabilities (PWDs) from disaster-prone areas in large numbers can be a challenge with many operational components in egress. Evacuation procedures often omit targeted responses for the preparedness of carless and mobility-limited residents, including a disproportionate share of PWDs. It appears that one of the biggest issues with the evacuation of PWDs is a lack of appropriate planning to determine how the shelters should be allocated to PWDs, the necessity to utilize emergency vehicles more efficiently, and ensuring that emergency routes are properly implemented to avoid traffic congestion in the network. Studies on PWDs tend to focus on localized, small-scale strategies, such as the evacuation of buildings or small facilities. As a result, there is a gap in the knowledge and practical application of mass evacuation at a city or regional scale, including identifying appropriate shelters, allocating vehicles, and planning emergency routes all at the same time. This study presents a framework for finding optimal emergency evacuation routes, particularly for the evacuation planning of PWDs. The proposed approach is capable of selecting optimal alternative evacuation routes effectively and objectively. The route choice model is developed by studying alternative evacuation routes within the Halifax peninsula using a combined Entropy Weight-TOPSIS hybrid approach, to conduct multicriteria-based emergency evacuation route analysis. The advantage of the Entropy Weight method is that it considers information entropy to measure a certain factor's discreteness. On the other hand, the TOPSIS method reflects on Euclidean distance to determine the relative proximity of an alternative to the optimal solution. The entropy weight method is used to determine the weight of each factor influencing emergency evacuation route choices, and the TOPSIS method is tasked to compare and evaluate alternatives to identify the optimal evacuation route. This study considers traffic and road condition related factors of emergency evacuation route choices for six distinct routes, within the proposed multicriteria problem-solving framework. Factors include Traffic Volume, Traffic Capacity, Congestion, Travel Speed, Lane Width, Road Condition, Incident Probability, and Total Milage. The data was collected from the Dalhousie Transportation Collaboratory (DalTRAC) and HRM open data sources. The results demonstrate best-to-worst ranked evacuation routes and confirm that the proposed method is scientific and accurate for the multi-criteria analysis of the emergency evacuation route selection for PWDs. The top three best-ranked routes will be considered for evacuation purposes. The proposed solution will help policymakers and emergency professionals to develop proactive evacuation plans and accommodate the special requirements for the evacuation of PWDs.

Citations

- Hashemi, M. (2018). Emergency evacuation of people with disabilities: A survey of drills, simulations, and accessibility. *Cogent Engineering*, 5(1), 1506304.
- Renne, J., Sanchez, T., & Litman, T. (2011). Carless and Special Needs Evacuation Planning. *Journal of Planning Literature*, 26(4), 420-431.
- Ebrahimnejad, S., Villeneuve, M., Tavakkoli-Moghaddam, R. (2021). An optimization model for evacuating people with disability in extreme disaster conditions: A case study. *Scientia Iranica*.
- Hashemi, M., & Karimi, H. (2016). Indoor Spatial Model and Accessibility Index for Emergency Evacuation of People with Disabilities. *Journal of Computing in Civil Engineering*, 30(4), 4015056.

Key Words: Entropy Weight Method, Topsis Method, Route Choice, Emergency Evacuation Planning, People With Disabilities (PWDs)

TACTICAL URBANISM EXPERIMENTS TO ENHANCE ROAD USER SAFETY IN ASBURY PARK, NJ

Abstract ID: 1615

Individual Paper Submission

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Urban transportation is experiencing rapid changes with the growing popularity of new micromobility options. Within this mix of new modes, pedestrians and other non-motorists face substantial and growing risks on streets where the majority of roads cater to drivers and automobiles. Experimentation is needed to identify workable solutions. Installation of temporary demonstration street projects as a way to address safety issues is a growing trend in urban planning. Working with the coastal town of Asbury Park, NJ, USA, a temporary (pop-up) bicycle lane in a high traffic intersection, was analyzed for improvements for safety. Safety is very subjective and can be measured in different ways: by surveying road users directly, by using sensors to measure stress and cognitive workload, or by measuring the passing distance, number of swerving maneuvers, or near-miss indicators.

Past studies have traditionally focused on just one of these methods at a time. Surveys have the benefit of capturing a diverse range of road users but are prone to recall bias. Reviewing video footage from drones or traffic cameras can be helpful in capturing interactions between more than two modes. It allows researchers to observe safety factors such as use of bicycle lane or use of helmet by a micromobility user but leaves the perception of safety/near-misses in the hands of the researchers. Biometric sensors can measure cognitive workload and stress levels from recruited participants. A recent study combined observation and surveying, and highlights the subjectivity of safety and near-misses as they found that participants reported feeling afraid in just 10% of close passes.

The intersection is situated two blocks away from the beach and three blocks from downtown. The two streets currently each have one lane going in each direction (two lanes for each street). The intersection is particularly hazardous due to its wide turn angle for drivers coming from downtown traveling towards the beach. Motor vehicles often do not slow down sufficiently when turning right.

A mixture of methods is needed in order to capture the subjectivity of safety for a user and to make useful policy recommendations. In our study, we employ (1) an intercept survey, (2) biometric sensors, and (3) traffic camera video and drone footage. The intercept survey collects demographic information and safety perception from road users passing by. Biometric sensors are placed on a bicycle and e-scooter users before and after the implementation of the bike lane to see whether the same users feel less cognitive workload once a bike lane is available. The traffic camera footage is collected for two weeks prior to the introduction of the protected bike lane and for two weeks after. The footage provides valuable information on traffic mode interactions, speeding, and possible unsafe situations such as running a red light, speeding, or not yielding to pedestrians.

From the survey results, non-motorists report that they feel safer with the new bicycle lane present. From the biometric sensors, the participants report less cognitive workload while the bike lane is present. From the traffic camera footage, we find that motor vehicles are more likely to come to a complete stop before making a right turn at a red light, that they are less likely to speed through the intersection, and that they are less likely to run a red light. Bicycles and e-scooters have fewer swerving and hard braking incidents with the bicycle lane present.

Safety is improved by slowing down traffic and separating micromobility users from drivers and pedestrians. Overall, the protected bicycle lane intersection is beneficial for non-motorists. Researchers and planners should work together to conduct naturalistic studies by way of tactical urbanism.

Citations

- Beck, B., M. Perkins, J. Olivier, D. Chong & M. Johnson (2021) Subjective experiences of bicyclists being passed by motor vehicles: The relationship to motor vehicle passing distance. *Accident Analysis and Prevention*, 155.
- Honey-Rosés J, Stevens M. Commentary on the Absence of Experiments in Planning. *Journal of Planning Education and Research*. 2019;39(3):267-272. doi:10.1177/0739456X17739352
- Ibrahim, M. R., J. Haworth, N. Christie, T. Cheng & S. Hailes (2021) Cycling near misses: a review of the current methods, challenges and the potential of an AI-embedded system. *Transport Reviews*, 41, 304-328.

- Kim, D. & K. Park (2021) Analysis of potential collisions between pedestrians and personal transportation devices in a university campus: an application of unmanned aerial vehicles. *Journal of American College Health*.
- Ryerson, M. S., C. R. S. Long, M. Fichman, J. H. Davidson, K. N. Scudder, M. Kim, R. Katti, G. Poon & M. D. Harris (2021) Evaluating cyclist biometrics to develop urban transportation safety metrics. *Accident Analysis and Prevention*, 159, 11.

Key Words: micromobility, safety, experimentation, tactical urbanism, scooters

THE CONTESTED CURB: METERS, MOBILITY AND MANAGEMENT

Abstract ID: 1620

Individual Paper Submission

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The curb is arguably the most contested space in the city as the interface between the transport system (mobility) and the urban environment (access) it shapes and serves. Traditional piecemeal approaches to managing the curb have focused on either parking, transit, pedestrians, or perhaps loading zones/taxi stands in commercial areas. They have also suffered from a lack of adequate data, assessment methods, and the challenge of coordination within and between public/private interests. Today, there is a widely recognized intensification and diversification of demands on the curb from ride hailing, e-commerce, food delivery, active transportation, and micro-mobility. Future curb demands will include delivery robotics, a variety of autonomous vehicles and evolving activity patterns across the socio-economic and urban form spectrum. For example, every major city in Canada is working on reducing automobile dependence and emphasizing mobility alternatives through investments in active transportation infrastructure that often intensify curb conflicts. The central questions explored in this paper are what are the options for managing the curb, the characteristics of these options and their effectiveness? Our approach to addressing these questions involves first a systematic review of literature and practice reports to enumerate curbside management practices and their characteristics. The second phase involves the development of a qualitative assessment framework for evaluating curbside management drawn from the literature base; a framework that includes dimensions related to type (e.g., program, pricing tool, regulation, education campaign), cost, user impacts and trade offs, stakeholder engagement, internal coordination, data, technology, and street functionality. Lastly, the utility of the framework and level of engagement in curbside management is analyzed through a case study application to a variety of Canadian cities in differing urban contexts. The findings indicate the majority of cities employ elements of traditional curbside management approaches that include parking regulations, loading zones, and transit bays for example. Only the City of Toronto has begun the adoption of a comprehensive curbside management strategy that incorporates consideration of the diversity of users and stakeholders. A number of cities have policy commitments to pursue new approaches to curbside management but have yet to implement many of the best practices identified in other jurisdictions. The evaluation framework allows cities a basic starting point for considering evolving curbside demands and management approaches. However, it is clear that the growth and diversity of demands on the curb and the volume of voices debating curb space use and rights has outstripped the efforts of municipalities to manage effectively. This work builds on the emerging urban planning literature around curbside management, providing an example application of an evaluation framework and highlights the need for significant work to be done as the curb is an essential consideration in pressing global challenges like the climate emergency.

Citations

- Marsden, G., Docherty, I., & Dowling, R. (2020). Parking futures: Curbside management in the era of 'new mobility' services in British and Australian cities. *Land Use Policy*, 91, 104012.
- Butrina, P., Le Vine, S., Henao, A., Sperling, J., & Young, S. E. (2020). Municipal adaptation to changing curbside demands: Exploratory findings from semi-structured interviews with ten US cities. *Transport Policy*, 92, 1-7.
- Roe, M. and Toocheck, C. (2017) Curb Appeal: Curbside Management Strategies for Improving Transit Reliability. National Association of City Transportation Officials, Washington D.C., 2017. <https://nacto.org/wp-content/uploads/2017/11/NACTO-Curb-Appeal-Curbside-Management.pdf>. Accessed 30 July, 2019.
- Diehl, C., Ranjbari, A., & Goodchild, A. (2021). Curbspace Management Challenges and Opportunities from Public and Private Sector Perspectives. *Transportation Research Record*, 2675(11), 1413-1427.

Key Words: curbside, mobility, management, access, parking

CONCERNS FOR BUYING A USED ELECTRIC VEHICLE: AN ONLINE REVIEW ANALYSIS USING NATURAL LANGUAGE PROCESSING

Abstract ID: 1623

Individual Paper Submission

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With the growing popularity of electric vehicles to combat climate change, research studies have conducted surveys or focus groups to understand factors that affect consumers' decisions to purchase an EV. However, none specifically looked at barriers consumers may have in buying a second-hand EV, which has a more attractive price point for lower-income households. In this study, I examine the circumstances surrounding used EVs that the existing or potential owners have through social media. I focus on used EVs instead of new EVs under the assumption that used EVs are more affordable for low- and moderate-income households. I leverage social media to capture concerns about used EVs as a proxy to understand the barriers that may prevent low-income households from adopting used EVs in the future. I use the latent Dirichlet allocation topic modeling method to identify relevant topics from texts obtained via social media. Understanding concerns surrounding used EVs may help policymakers roll out EV-related policies more effectively for lower-income households, improving their accessibility to EVs.

Citations

- Canepa, K., Hardman, S., & Tal, G. (2019). An early look at plug-in electric vehicle adoption in disadvantaged communities in California. *Transport Policy*, 78, 19–30. <https://doi.org/10.1016/j.tranpol.2019.03.009>
- Samuel, J., Ali, N., Rahman, M., Esawi, E., & Samuel, Y. (2020). COVID-19 public sentiment insights and machine learning for tweets classification. *Information (Basel)*, 11(6). <https://doi.org/10.3390/info11060314>
- Shu, T., Wang, Z., Lin, L., Jia, H., & Zhou, J. (2022). Customer perceived risk measurement with NLP method in electric vehicles consumption market: empirical study from China. *Energies*, 15, 1637,

Key Words: text analytics, used electric vehicles, transportation equity, accessibility, topic modeling

CHARACTERIZING THE ACTIVITY SPACES OF VULNERABLE TRANSIT RIDERS USING TOUCHLESS PAYMENT VALIDATORS

Abstract ID: 1625

Individual Paper Submission

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The recent development of touchless payment systems for public transit has allowed detailed analysis of travel patterns. Research is increasingly making use of individual-level tracking data to analyze the travel behaviors and activity patterns of vulnerable transit users, often using an activity space-based approach (e.g., Morency et al., 2011). Activity space refers to “the local area that is composed of locations people have direct contact with during their daily activities,” and has been used as an indicator to measure transport disadvantage (Zhang et al., 2021, Kamruzzaman et al., 2016). This paper extends the activity space framework to three metropolitan areas in Ohio, where we examine the activity space characteristics and geographies of different groups of vulnerable transit riders.

Our dataset includes 214 EZfare accounts, which follow over 15,000 validator readings over a 5-month period for transit riders in Cincinnati, Cleveland, and Akron. These data are connected to a demographic survey, allowing trip patterns to be examined in subgroups based on income, banked status, disabilities, gender, race/ethnicity, vehicle access, and other measures of vulnerability. We utilize GIS maps and associated tables to report on mean travel frequencies and indicators characterizing the mean shape and spatial extent of activity space confidence ellipses for each subgroup of transit riders.

We find that less vulnerable transit riders (e.g., higher-income, banked, vehicle-owning) have larger and more linear activity spaces than vulnerable riders, indicating a greater emphasis on transit use for commuting between home and work via suburban park-n-rides. Vulnerable subgroups' activity spaces, on the other hand, are relatively smaller and more circular, indicating a greater emphasis on localized travel to a wider variety of locations. By examining four transit providers across three metropolitan areas, we report on the important role of geographic context in shaping measures of activity space.

Our findings provide important insights for equitable transit planning and service provision, because significant

differences in activity space characteristics between transit user groups reflect different needs for using and accessing urban space. The activity space characteristics of vulnerable groups could potentially inform more equitable transit route alignment, headways, and pricing. Additionally, this study adds to the growing body of research demonstrating the use of individual-level tracking data to better understand travel behavior.

Citations

- Zhang, S., Yang, Y., Zhen, F., Lobsang, T., & Li, Z. (2021). Understanding the travel behaviors and activity patterns of the vulnerable population using smart card data: An activity space-based approach. *Journal of Transport Geography*, 90, 102938.
- Morency, C., Paez, A., Roorda, M. J., Mercado, R., & Farber, S. (2011). Distance traveled in three Canadian cities: Spatial analysis from the perspective of vulnerable population segments. *Journal of transport geography*, 19(1), 39-50.
- Kamruzzaman, M., Yigitcanlar, T., Yang, J., & Mohamed, M. A. (2016). Measures of transport-related social exclusion: A critical review of the literature. *Sustainability*, 8(7), 696.

Key Words: Activity space, Public transit, GIS, Validators, Smart cities

WORKING FROM HOME DURING COVID-19: FLASH IN THE PAN OR WAVE OF THE FUTURE?

Abstract ID: 1645

Individual Paper Submission

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One of the largest disruptions precipitated by the onset of the COVID-19 pandemic in early 2020—at least for those whose jobs allowed it—was the near instantaneous shift to working from home. A comprehensive Chicago-area study found that while 15% of respondents worked from home five days a week or more before the pandemic and nearly half—48%—did so during the pandemic (Shamshiripour et al., 2020). Among highly educated, higher-income respondents in the United States, uptake was even higher (Conway et al., 2020).

Remote work, which some saw as a temporary measure to get through the pandemic, has now become a subject of debate, as the working world looks to determine a new “normal”. Will people gradually make their way back into physical offices? Will remote work become the norm for certain types of workers? Or will a hybrid system emerge as default? Early estimates suggested enduring changes. Salon et al. (2021) estimated that the proportion of workers expecting to work from home at least a few times per week was twice of that before the pandemic, increasing from 13% to 26%. Conway et al. estimated 62% of a higher-education, higher-income sample would work from home at least a few days per month, compared to 40% before the pandemic. These figures, however, reflect predictions from non-representative samples prior to deployment of COVID-19 vaccines.

As COVID-19 has become more manageable and many people have resumed in-person activities in several spheres of life, questions have emerged: Will people continue working from home? Why or why not? The answers largely depend on a) whether employers provide the opportunity to work from home (i.e., supply-side factors), and b) whether workers want to work from home (i.e., demand-side factors) (Handy & Mokhtarian, 1996).

We investigate these issues using two cross-sectional waves of a population-representative survey taken in New Jersey, with the first wave (n=1,419) administered between November 30th, 2020, and February 25, 2021 and the second wave (n=1,032) administered between December 1, 2021 and February 22, 2022.

We address the following questions:

- How prevalent was working from home, both early in the pandemic and as it has eased?
- How do demographic factors like age, gender, and race affect home-based work behavior and anticipation?
- How much do people anticipate working from home after COVID-19 is no longer a threat?
- What factors are associated with anticipated working from home in the future? We find across both survey waves that while fewer people anticipate working from home after the pandemic, approximately one third of respondents anticipate working from home regularly (at least a few times a week) indefinitely, compared to 15-20% who did before the pandemic. Moreover, the chief reason for ceasing working from home was that employers would not allow it (~75% across both waves) as opposed to respondents not wanting to (~20% across both waves). Crucially, the desire to continue working from home in the second wave was not correlated with perceived risk from COVID-19, indicating people wished to work from home for other reasons. Key demographic factors, especially educational attainment and income, were associated with increased propensity to work from home, largely through the types of employment

associated with these factors allowing for working from home.

These results carry implications for the future of work and travel. For one, high demand for working from home may pressure employers to adapt, increasingly accommodating employees who wish to do so. Additionally, the projected continuation of working from home at least some of the time suggests continued disruption of traditional commuting patterns and may result in a flattening of historical commuting peaks and reducing pollution.

Citations

- Conway, M. W., Salon, D., da Silva, D. C., & Mirtich, L. (2020). How Will the COVID-19 Pandemic Affect the Future of Urban Life? Early Evidence from Highly-Educated Respondents in the United States. *Urban Science*, 4(4), 50. <https://doi.org/10.3390/urbansci4040050>
- Handy, S., & Mokhtarian, P. (1996). The Future of Telecommuting. <https://escholarship.org/uc/item/5nm777c1>
- Salon, D., Conway, M. W., Silva, D. C. da, Chauhan, R. S., Derrible, S., Mohammadian, A. (Kouros), Khoeini, S., Parker, N., Mirtich, L., Shamshiripour, A., Rahimi, E., & Pendyala, R. M. (2021). The potential stickiness of pandemic-induced behavior changes in the United States. *Proceedings of the National Academy of Sciences*, 118(27). <https://doi.org/10.1073/pnas.2106499118>
- Shamshiripour, A., Rahimi, E., Shabanpour, R., & Mohammadian, A. (Kouros). (2020). How is COVID-19 reshaping activity-travel behavior? Evidence from a comprehensive survey in Chicago. *Transportation Research Interdisciplinary Perspectives*, 7, 100216. <https://doi.org/10.1016/j.trip.2020.100216>

Key Words: Work from home, COVID-19, telecommuting

HAVE THE GENDER GAP AND PARENTHOOD PENALTY IN BUSINESS MOBILITY NARROWED SINCE 2001? LESSONS FROM THREE PREVIOUS U.S. NATIONAL HOUSEHOLD TRAVEL SURVEYS

Abstract ID: 1652

Individual Paper Submission

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The recent COVID pandemic has accelerated the digital substitution of business travel, but what does it mean for the gender gap in business mobility? This study examines the U.S. National Household Travel Survey (NHTS) data to assess whether the gender gap and parenthood penalty in business mobility has narrowed since 2001.

Despite significant progress toward female participation in the labor market, women are still significantly underrepresented in business travel (Aguilera, 2008). The primary reason for the gender gap in business mobility may be the gender gap in career opportunities. The time shortage caused by child-rearing duties often discourages or makes it challenging for women to choose or promote to jobs with higher-level of responsibilities (Gustafson, 2006). As business travel goes hand-in-hand with prestigious jobs, workers with care responsibilities often hesitate or fail to take such positions (Magnusson, 2010).

While literature reports the persistent gender gap and parenthood penalties in business mobility, technologies may have narrowed them. Specifically, information and communication technologies (ICT) may have reduced business travel needs through virtual substitution of business travel. Although physical presence remains vital in various personal relationships, ICT has replaced many in-person interactions with virtual ones, even before the COVID pandemic (Faulconbridge et al., 2009). For instance, virtual meeting tools have become more convenient and natural to be a close substitute for in-person meetings. Online customer-relation management tools and inside salesforce have been widely accepted, replacing door-to-door outside sales. In addition, automated data sharing has proliferated to reduce the need for data collection and information sharing trips. As a result, by 2017, the average American worker traveled much less frequently and fewer miles than in 2001 (McGuckin and Fucci, 2018). Such declining trends in business travel may have contributed to improving work-life balance, particularly for workers with care responsibilities.

Our paper employs the Probit model to investigate whether occupational categories and ICT familiarity affect the gender gap and parenthood penalty in business mobility. We also test the model for business travel with different travel mile thresholds to see whether the gap is more significant for long-distance travel. Our analysis finds narrowing gender gaps and parenthood penalties in business mobility, with some variety by occupation and internet familiarity. Specifically, parenting activities had a strikingly negative impact on female sales and service workers' long-distance business travel in 2001. The gender gap and parenthood disadvantage seem to have narrowed in 2009 and 2017, as male sales and service workers with and without children reduced their travel likelihood. Yet, a significant parenthood penalty remained for female sales and service workers for long-distance business travel (50+ miles per day). The gender gap and parenthood penalties for professional and managerial workers were narrower than those for sales and

service workers in 2001. However, professional and managerial mothers remained much less likely to travel 30+ miles than their male counterparts even in 2017. ICT familiarity basically narrowed the gender gap among workers without small children, suggesting that ICT has complementary effects on business travel. Yet, among sales and service workers with children, it widened the gender gap in the travel likelihood in 2001 and 2009, suggesting that ICT may have been used for substituting business travel.

Citations

- Aguilera, A., 2008. Business travel and mobile workers. *Transp. Res. Part A Policy Pract.* 42, 1109–1116.
- Faulconbridge, J.R., Beaverstock, J. V., Derudder, B., Witlox, F., 2009. Corporate ecologies of business travel in professional service firms: Working towards a research agenda. *Eur. Urban Reg. Stud.* 16, 295–308.
- Gustafson, P., 2006. Work-related travel, gender and family obligations. *Work. Employ. Soc.* 20, 513–530.
- Magnusson, C., 2010. Why is there a gender wage gap according to occupational prestige?: An analysis of the gender wage gap by occupational prestige and family obligations in Sweden. *Acta Sociol.* 53, 99–117.
- McGuckin, N., Fucci, A., 2018. Summary of Travel Trends: 2017 National Household Travel Survey. Washington, DC.

Key Words: Business Travel, Business Mobility, Gender Gap, Parenthood Penalty, ICT

PREPARING FOR ON-DEMAND RIDE HAILING AS PUBLICLY-SUBSIDIZED MOBILITY: HOW DO PROGRAM DESIGN AND NEIGHBORHOOD CONTEXT AFFECT UPTAKE?

Abstract ID: 1667

Individual Paper Submission

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The rapid and widespread adoption of ride-hailing services provided by Transportation Network Companies (TNCs) since 2009 provides new challenges and opportunities for transportation policy (Tiranchini 2019, Thomas et al., 2021). Partnerships between TNCs, transportation planners, and transit agencies offer new opportunities to provide on-demand transit options with the potential to improve service to vulnerable users – even in low-density areas (Schwierterman et al., 2018), Curtis et al. 2019, Lucken et al. 2019). Despite this optimism, how does the design of a mobility program involving a TNC-public sector partnership affect uptake? And what neighborhood factors may influence on-demand ride hailing ridership? Assessing such programs is critical towards improving their efficacy (Schwierterman et al., 2018, Curtis et al. Lucken et al. Thomas et al. 2021).

This paper examines a case study of such a partnership between Uber and the low-density rural Town of Innisfil, Ontario. Known as Innisfil Transit, the partnership provides subsidized ride-hailing trips to all Innisfil residents as an alternative to traditional fixed-route transit. Over the course of the study period from 2016 to 2020, the Innisfil Transit program underwent multiple policy changes including adding additional fixed-fare destinations and implementing a 30-trip per month limit for users.

The purpose of this paper is to first investigate the impact of the subsidized ride-hailing program on ride-hailing use and uptake, and to determine how it differs from non-subsidized ride-hailing. Second, this paper aims to identify the spatial and temporal ridership patterns of ride-hailing use and uptake in a low-density rural area, and what impacts policy changes have on these patterns.

Using a combination of descriptive statistics and inferential models (both cross sectional and panel), this study explores the predictors of zonal on-demand ride-hailing ridership and growth during the study period as a function of neighborhood-level and policy-related control variables. Our models reviewed subsidized ride-hailing, non-subsidized ride hailing, and total ride-hailing trip generation to estimate links between the Innisfil Transit program and non-subsidized ride hailing. We found that both Uber and Innisfil Transit trips increased drastically over the study period, with the total ridership increasing from only 22 trips made in September 2016 to over 23,700 in January 2020, before decreasing to approximately 21,300 in the final month of the dataset (February 2020). When it was implemented in May 2017, Innisfil Transit trips surpassed Uber trips for the duration of the dataset, however the difference between the subsidized and unsubsidized trips decreased as time went on.

Results indicate that while the introduction of Innisfil Transit initially decreased Uber trips (implying substitution), this impact was not long lasting. Evidence indicates that policy decisions impact both overall ridership and growth over time. The presence of a fixed-fare destination in a given zone incentivized trip generation. The imposition of a 30-trip limit per month across all Innisfil neighborhoods successfully decreased subsidized ridership and may have shifted some Innisfil Transit users towards non-subsidized Uber services. As found in other studies, both population density and the proportion of young adults in an area were critical neighborhood factors which shaped ridership.

Results weakly suggest that subsidized ride hailing may be more prominently used by low-income households than non-subsidized ride hailing. In sum, these findings have important implications for municipalities and transit agencies considering partnerships with TNCs to deliver subsidized ride hailing services.

Citations

- Curtis, T., Merritt, M., Chen, C., Perlmutter, D., Berez, D., Ellis, B., Transit Cooperative Research Program, Transportation Research Board, & National Academies of Sciences, Engineering, and Medicine. (2019). Partnerships Between Transit Agencies and Transportation Network Companies (p. 25425). Transportation Research Board. <https://doi.org/10.17226/25425>
- Schwieterman, J., Livingston, M., & Van der Slot, S. (2018). Partners in Transit: A Review of Partnerships between Transportation Network Companies and Public Agencies in the United States.
- Lucken, E., Trapenberg Frick, K., & Shaheen, S. A. (2019). "Three Ps in a MOD:" Role for mobility on demand (MOD) public-private partnerships in public transit provision. *Research in Transportation Business & Management*, 32. <https://doi.org/10.1016/j.rtbm.2020.100433>
- Tirachini, A. (2019). Ride-hailing, travel behaviour and sustainable mobility: An international review. *Transportation*, 47. <https://doi.org/10.1007/s11116-019-10070-2>
- Thomas, G. C., Clewlow, R. R., Connor, M., Cruz-Casas, C., Feigon, S., Hall, J., Miller, B., Niemeier, D., Ralph, C., Schaller, B., & Steudle, K. T. (2021). The Role of Transit, Shared Modes, and Public Policy in the New Mobility Landscape (p. 26053). Transportation Research Board. <https://doi.org/10.17226/26053>

Key Words: ride hailing, Transportation Network Companies (TNCs), on demand mobility, public transit, small towns

A DEMAND FOR ACCESS TO URBAN LIFE: RESULTS FROM A QUALITATIVE INVESTIGATION OF RIDERS FACING ACCESSIBILITY AND EFFICIENCY CHALLENGES IN MADISON, WISCONSIN

Abstract ID: 1669

Individual Paper Submission

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Transportation planners and policy makers in Madison, Wisconsin have long struggled with designing an accessible and efficient public bus transportation system within an "isthmus city" characterized by geographic unevenness—i.e., a central area squeezed between two urban lakes where service is concentrated and a larger urban expanse that fans out in either direction where service provision is inherently challenging. The difficulties associated with distributing transportation service across Madison's unique geographical landscape are magnified by historical patterns of discrimination in housing and employment as well as more contemporary gentrification pressures along the central core that (re)shape the demographic landscape in ways that intersect with the transportation system. Together, these forces have helped to produce distinct areas in the near urban periphery where limited transportation access and reduced efficiency are disproportionately experienced by the city's lower income, non-white, and more transportation dependent populations.

In order to uncover the experience of transit riders from these specific communities, we conducted 40 semi-structured, in-depth interviews with riders about their experience with the transportation system and how it impacted their daily lives. Results from our qualitative analysis show that riders often characterize their interaction with the system in terms of conflict. For example, important themes that have emerged from the interviews show that struggles with bus frequency and transfers impact finances, employment, and housing. The riders we interviewed also expressed discomfort with conditions on the bus and particularly with other riders and drivers. Importantly, we also find that tensions with the existing system are translated into apprehensiveness with emerging plans to reorganize the existing system around a future bus rapid transit line.

Drawing on a right to the city framework, we compare our findings from riders with the results of a parallel set of interviews with stakeholders. Results show a distinct divergence between the themes generated from riders and the ways stakeholders describe the challenges to the existing system and their arguments for improvement. Along the lines of this framework, we argue that the conflict narrative reflecting the experience of riders facing accessibility and efficiency challenges should be interpreted as a call for greater participation in transportation planning and a "demand...[for] a transformed and renewed access to urban life."

Citations

- Attoh, K.A. (2012). The Transportation Disadvantaged and the Right to the City in Syracuse, New York. *The Geographical Bulletin* 53(1), 1-19.
- Attoh, K.A. (2019). *Rights in Transit: Public Transportation and the Right to the City in California's East Bay*. Athens, GA: University of Georgia Press.
- Carreira, R., Patrício, L., Jorge, R.N., Magee, C., & Hommes, Q.V.E. (2013). Towards a holistic approach to the travel experience: A qualitative study of bus transportation. *Transport Policy* 25, 233-243.
- Lefebvre, H. (1996). *Writings on cities* (E. Kofman & E. Lebas, Trans.). Cambridge, MA: Blackwell.
- Lowe, K. (2021). Undone science, funding, and positionality in transportation research. *Transport reviews*, 41(2),192-209.

Key Words: right to the city, accessibility

EFFECTS OF PARENTAL ATTITUDES AND BEHAVIOR ON CHILDREN'S WALKING BEHAVIOR: A PANEL STUDY APPROACH

Abstract ID: 1672

Individual Paper Submission

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Understanding children's walking behavior is important because of the various health benefits and the likely influence on active lifestyle throughout their later lives. Various built environmental factors, including land-use types and their diversity, sidewalk connectivity, and distance to destinations may affect children's walking behavior (Mitra, 2013). However, children's active travel behavior can vary in neighborhoods with similar built environmental contexts. This may be because their parents' attitudes and perceptions about the neighborhood, especially safety, can affect their children's walking behavior (Foster et al., 2014). Additionally, parental behavior can affect children's physical activity (Liszewska et al., 2018).

The purposes of our study are as follows: (1) how parents' attitudes about neighborhood safety, and parents' walking behavior, affect children's walking behavior; (2) whether the relationship between children and parental walking behavior and attitudes are consistent between time periods and whether there is a causal relationship in a longitudinal context; and (3) what factors affect changes in attitudes or behavior over time.

This study uses two-wave panel data (over 2 years) for 335 households with children aged 5 to 17 in Portland, Oregon. In addition to walking behavior (measured using GPS and accelerometers), variables include the children's attitudes about walking and barriers to walking, parents' attitudes about their children's safety while walking, and demographics. Our analysis includes latent variables and cross-lagged panel models (CLPM), which utilize data of two or more time waves to investigate causality among latent variables (Thøgersen, 2006). Two variables which affect children's walking are parents' walking behavior and their attitude toward the safety of their children's walking. While parent's walking significantly affects children's walking in both time waves, their attitude toward the safety of children's walking, which is measured by traffic safety and stranger awareness, was only significant in the second wave. This indicates that parents who walk more may consistently induce children to walk more. Furthermore, parents' attitude toward their children's safe walking affect children's walking behavior when they are getting older. Children's attitude toward weather as a barrier did not affect their walking behavior in both time waves.

Our analysis also examines changes in attitudes and behavior over the two-year time period. Overall, children's attitudes towards walking got slightly more negative, particularly for walking to school. Factors that were correlated with changes in their attitudes include age, parental attitudes about their children's safety while walking, and parent's attitudes about their own walking. In both analyses, built environment features did not play a large role, though the variation in the sample was limited.

Overall, the findings point to the importance of parental attitudes and perceptions, as well as their behavior, in influencing children's walking attitudes and behavior. There is a need to understand how to create neighborhoods where parents feel safe allowing their children to walk independently.

Citations

- Foster, S., Villanueva, K., Wood, L., Christian, H., & Giles-Corti, B. (2014). The impact of parents' fear of strangers and perceptions of informal social control on children's independent mobility. *Health & Place*, 26, 60–68. <https://doi.org/10.1016/j.healthplace.2013.11.006>
- Liszewska, N., Scholz, U., Radtke, T., Horodyska, K., Liszewski, M., & Luszczynska, A. (2018). Association between Children's Physical Activity and Parental Practices Enhancing Children's Physical Activity: The Moderating Effects of Children's BMI z-Score. *Frontiers in Psychology*, 8. <https://www.frontiersin.org/article/10.3389/fpsyg.2017.02359>

- Mitra, R. (2013). Independent Mobility and Mode Choice for School Transportation: A Review and Framework for Future Research. *Transport Reviews*, 33(1), 21–43. <https://doi.org/10.1080/01441647.2012.743490>
- Thøgersen, J. (2006). Understanding repetitive travel mode choices in a stable context: A panel study approach. *Transportation Research Part A: Policy and Practice*, 40(8), 621–638. <https://doi.org/10.1016/j.tra.2005.11.004>

Key Words: Children, Walking, attitudes, perceived safety, panel data

WHAT DOES RESEARCH ON TRANSIT PRICING TELL US ABOUT FARE FREE TRANSIT?

Abstract ID: 1680

Individual Paper Submission

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Two years into the COVID-10 pandemic, transit patronage in most of the U.S., is a fraction of its historical trend. Transit riders are now required to wear masks, and a variety of steps by transit operators to reduce the public health risks associated with transit use have become commonplace. Like transit operators nationwide, operators in Los Angeles, most notably Los Angeles Metro, have also experimented with “fare-free” transit as a way to reduce the risks of spreading COVID-19.

Transit operators have historically been reluctant to adopt innovative fare policy due to equity concerns, a firmly-established history (in the United States) of flat-rate transit fares, and risk-averse transit management (Yoh, et al., 2010). “Flat” fares may seem equitable at first blush but charge different travelers the same price for trips of different lengths, modes, and time of day, effectively cross-subsidizing longer, more expensive-to-provide trips with revenues from shorter, less-expensive-to-provide trips (Nuworsoo, et al., 2009). Given that higher-income transit users tend to take longer trips than lower-income users, and are more likely to travel in peak periods and directions as well, flat fares cross-subsidize the better-off by the less well-off, on average. Fare schedules that charge different fares to different user groups based on ability to pay can help mitigate vertical equity concerns, while distance-based fares that vary by trip distance and/or time-of-day do a better job of matching the price charged for transit service to the cost of serving that trip (Farber, et al., 2014). The complexity of calculating marginal costs of serving specific transit trips has historically been magnified by a lack of individual transit user travel data. This situation is changing. Although operators expressed interest in experimenting with fare-free transit before the current pandemic as a response to longstanding structural issues stemming from over-reliance on flat fares, it took the unforeseen exigencies of COVID-19 to incentivize rapid widespread experimentation in fare policy. Coupled with reduced patronage, however, experiments in fare-free transit have exacerbated long term declines in the share of transit agency costs covered by fare revenues.

In this paper, we review the current state of what scholars and practitioners have learned about free- and reduced-fare programs and use it to design an evaluation framework for such programs. We review free- and reduced-fare policies currently being explored or implemented by transit agencies nationally, with a focus on Southern California. We identify the characteristics of transit agencies that are currently exploring or implementing innovative policies. We evaluate the success of agencies in generating revenues and addressing equity concerns. We specifically examine fare-free transit compared with those that vary based on time, distance, and customer type. Given that eliminating payments also eliminates the need for fare enforcement, what does the net fiscal and equity impacts of free fare policies tend to be? What are the opportunity costs? In short, we are interested in understanding, based on current practice and research, the future of transit fare policy.

We contribute to existing literature by summarizing the current landscape of innovative transit fare policy and analyzing these policies through a theoretical framework based on recent and emerging data. The results of our analysis will be used to shape our future work on the fiscal and performance implications of innovative fare policies for specific agencies. By better understanding how emerging technology can help to match the marginal costs of serving different traveler and trip types, our findings can help ensure that fare policies are equitable but also economical. In doing so, we endeavor to provide actionable guidance for transit agencies as they move toward fare policy reform in the wake of COVID-19.

Citations

- Farber, S., Bartholomew, K., Li, X., Paez, A., & Habib, K.M.N. (2014). Assessing social equity in distance based transit fares using a model of travel behavior. *Transportation Research Part A*, 67, 291-303. [doi:10.1016/j.tra.2014.07.013](https://doi.org/10.1016/j.tra.2014.07.013)

- Nuworsoo, C., Golub, A., & Deaken, E. (2009). Analyzing equity impacts of transit fare changes: Case study of Alameda–Contra costa transit, California. *Evaluation and Program Planning*, 32(4), 360-368. doi:10.1016/j.evalprogplan.2009.06.009
- Yoh, A., Taylor, B.D., & Gahbauer, J. (2016). Does transit mean business? Reconciling economic, organizational, and political perspectives on variable transit fares. *Public Works Management & Policy*, 21(2), 157-172. doi:10.1177/1087724X15616816

Key Words: Transit, Fares, Equity, Innovative, Policy

IF YOU ZONE IT, WHO WILL COME, AND HOW WILL THEY TRAVEL? THE EFFECTS OF RELAXED ZONING REGULATIONS ON TRAVEL BEHAVIOR

Abstract ID: 1687

Individual Paper Submission

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Urban areas across the United States are facing a housing affordability crisis. One approach some cities and states have taken is to reduce or eliminate single-family zoning. Single-family zoning prevents the construction of more-affordable apartments in vast swaths of the American urban landscape. This policy shift has already occurred in a number of states and cities, and is under discussion in others (Infranca, 2019). Independent of any effects on housing affordability, changes to land use policy may have effects on transport. In this work, I evaluate these effects using a microsimulation framework.

For land use policies to affect transport, they need to affect land use, so I first build an economic model to simulate where development in metropolitan Los Angeles would occur if single-family zoning were removed. This model evaluates the profitability of redeveloping existing single-family homes and single-family-zoned vacant lots into small multifamily structures, and the likelihood that a property will be sold to a developer in the five-year time frame of the model.

Transport outcomes vary depending on which households live in which parts of the region, so I use an equilibrium sorting model to forecast how residents will re-sort across the region in response to the land use changes induced by new land-use policies. This adds an equilibrium price adjustment step as well as fixed effects to control for unobserved heterogeneity to the common multinomial logit model used for residential location models. This model also jointly forecasts how many vehicles each household will choose to own. This type of model is generally used for valuation of amenities (Bayer et al., 2004; Tra, 2007); to my knowledge, this is the first time it has been applied to a residential location choice in the context of a change to housing supply.

Finally, I apply an activity-based travel demand microsimulation model (Association of Metropolitan Planning Organizations, 2020) to forecast the changes in transport associated with the forecast changes from the previous models.

All in all, this dissertation forecasts extremely minor changes in travel outcomes due to a blanket elimination of single-family zoning. That said, due to financial and time limitations, the travel demand model was only used to evaluate a single scenario. It is possible that other scenarios that target development to more-accessible areas, rather than the blanket upzoning combined with a booming economy simulated here, would have more effects on transport. That said, the lack of a large transport effect is not necessarily bad news for policies to support housing development; while transport outcomes did not improve significantly in this model, they also did not worsen significantly. If changes to zoning codes are justified on affordability or equity grounds, a lack of transport impacts does not undermine these policies.

This analysis also demonstrates that redevelopment is highly volatile, with slight differences in assumptions resulting in massive differences in where it is profitable to build. This volatility makes any evaluations of the effects of changes to land use policy quite uncertain.

Citations

- Association of Metropolitan Planning Organizations. (2020). ActivitySim. <https://activitysim.github.io>
- Bayer, P., McMillan, R., & Rueben, K. (2004). An Equilibrium Model of Sorting in an Urban Housing Market (pp. 1–55).
- Infranca, J. (2019). The New State Zoning: Land Use Preemption Amid a Housing Crisis. *Boston College Law Review*, 60(3), 825–887.
- Tra, C. I. (2007). Evaluating the equilibrium welfare impacts of the 1990 Clean Air Act amendments in the Los Angeles area [Doctoral dissertation, University of Maryland, College Park]. <http://hdl.handle.net/1903/7236>

Key Words: transport, land-use, housing, zoning

EXAMINING COMMUTE MODE CHOICE OF ESSENTIAL WORKERS BEFORE AND DURING THE COVID-19 PANDEMIC USING TRAVEL SURVEY DATA

Abstract ID: 1690

Individual Paper Submission

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During major disruptions such as the COVID-19 pandemic, essential workers, defined as employees who must continue to make frequent commute trips, play a critical role in maintaining the basic function of society. It is therefore vital for transportation planners and policymakers to ensure that adequate mobility services are provided to meet the travel needs of this group of workers. To better understand their mobility barriers and inform future decision making, this research aims at answering the following questions:

- (1) How did essential workers commute before and during the COVID-19 pandemic?
- (2) What are the key explanatory factors of essential workers' mode choice before and during COVID-19?
- (3) How can transportation planners and policymakers effectively support essential workers' commute in the future?

This research examines essential workers of the University of Washington in Seattle using data from the Transportation Needs Assessment Survey, which was conducted by the university's Transportation Services in Autumn 2020. We use descriptive analysis and multinomial logistic regression, which includes sociodemographic and home location characteristics as explanatory variables, to model the mode choice of essential workers before and during the pandemic. We also investigate essential workers' reasons for mode choice and prospective on commuting for the recovery phase.

The results show that, first, over 60% of pre-pandemic public transit riders switched to other modes, especially driving alone. Almost all of the essential workers who drove alone, biked, or walked before the pandemic continued to do so during the pandemic. Second, the shift to driving alone was most pronounced among essential workers with higher incomes, whereas public transit remains as the primary mode choice of lower-income groups. As travel distance increases, the probability of choosing driving alone over public transit also goes up, although the relationship is not linear. We do not find consistently significant associations between mode choice and other sociodemographic variables. Finally, our analysis indicates that when the pandemic is under control, most essential workers hope to return to their pre-pandemic commute trip frequency and mode choice. Transportation planners and policymakers can facilitate recovery of public transit services and encourage biking and walking through planning and policy innovations.

Citations

- Abdullah, M., Ali, N., Hussain, S. A., Aslam, A. B., & Javid, M. A. (2021). Measuring changes in travel behavior pattern due to COVID-19 in a developing country: A case study of Pakistan. *Transport Policy*, 108, 21–33. <https://doi.org/10.1016/j.tranpol.2021.04.023>
- Baker, M. G. (2020). Nonrelocatable occupations at increased risk during pandemics: United States, 2018. *American Journal of Public Health*, 110(8), 1126–1132. <https://doi.org/10.2105/AJPH.2020.305738>
- Mongey, S., Pilossoph, L., Weinberg, A., & Griffin, K. C. (2021). Which Workers Bear the Burden of Social Distancing Policies? National Bureau of Economic Research, Working Papers, 2020. <http://www.nber.org/papers/w2708>
- Wee, B.V., & Witlox, F. (2021). COVID-19 and its long-term effects on activity participation and travel behaviour: A multiperspective view. *Journal of Transport Geography*, 95, 103144.

Key Words: Essential workers, Transportation equity, Mode choice, Commuting, COVID-19

PANDEMIC-TIME STREET REALLOCATION IN THREE LARGE CANADIAN URBAN CENTRES- AN EXPLORATION OF USAGE AND PUBLIC SUPPORT

Abstract ID: 1709

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Central Theme: The ongoing COVID-19 pandemic has presented an opportunity for municipalities across the Western world to implement active transportation infrastructure with unprecedented speed and political will (Combs & Pedro, 2021). In many cities, existing street space was reallocated to welcome walking, cycling and outdoor social gathering, while maintaining public health guidelines related to physical distancing. These street reallocation initiatives saw significant initial use and support (Buehler & Pucher, 2021; Shirgaokar et al., 2021). While most of these measures are labeled “temporary”, wide public use and support in early years of implementation may lead to political and policy support leading to their permanency, which is a desirable outcome for active transportation advocates. However, these street reallocation measures may not have benefited all population groups equally (Fischer & Winters, 2020). Within this context, we focus on the use of and support for two specific types of street reallocation in the largest urban centres in Canada, namely- temporary bike lanes and lane closures (i.e., closing traffic lanes to automobiles and allowing active transportation and recreation in that space). Two research questions are examined: 1) who are using reallocated bike lanes and lane closures more often during the pandemic?; and 2) what is the level of support toward the future maintenance and enhancement of these street reallocation initiatives?

Method: We conducted a population-representative online survey of 2,078 adults in City of Toronto, City of Montreal and Vancouver region, which are the three largest urban centres in Canada. Data collection took place in July 2021, or about 15 months into the pandemic, when all three regions were in the “stage 3” of their economic reopening, meaning that indoor activities were allowed at limited capacity, but larger outdoor gathering were allowed. The survey respondents self-reported their frequency of using bike lanes and lane closures, and also their support toward longer term maintenance and enhancement. Multinomial logistic regression models were estimated to identify the correlates of using and supporting street reallocations measures.

Results: Nearly half of all respondents used a bike lane or lane closure at least once during the first year of the pandemic, and between 40% (lane closure) and 42% (bike lane) supported their maintenance and enhancement post-pandemic. The results from the multinomial logistic regression models suggests that older, educated, and higher-income individuals, and those with fewer cars, are more likely to use and support bike lanes and lane closures. Local neighbourhood environment (dwelling density and the presence of pre-pandemic cycling facilities) was not associated with either use or support, but accessibility to, and accessibility offered by, pandemic-time bike lanes and lane closures, were important. All else being equal, there was significant regional variation in use and support.

Conclusion: Our findings show that pandemic-time street reallocations have attracted a lot of use and support, which varied across regions and based on local accessibility to these facilities. There are significant social inequalities in usage and support. Future research should explore the spatial and social equity in street reallocation planning more closely.

Citations

- Buehler, R., & Pucher, J. (2021). COVID-19 impacts on cycling, 2019-2020. *Transport Reviews*, 41(4), 393-400. <https://doi.org/10.1080/01441647.2021.1914900>
- Combs, T. S., & Pardo, C. F. (2021). Shifting streets COVID-19 mobility data: Findings from a global dataset and a research agenda for transport planning and policy. *Transportation Research Interdisciplinary Perspectives*, 9, 1-15.
- Fischer, J., & Winters, M. (2020). COVID-19 street reallocation in mid-sized Canadian cities: socio-spatial equity patterns. *Canadian Journal of Public Health*, 112, 376-390
- Shirgaokar, M., Reynard, D., & Collins, D. (2021). Using twitter to investigate responses to street reallocation during COVID-19: Findings from the U.S. and Canada. *Transportation Research. Part A, Policy and Practice*, 154, 300-312. <https://doi.org/10.1016/j.tra.2021.10.013>

Key Words: COVID-19 Pandemic, Active Transportation, Outdoor recreation, Street reallocation, Political opportunities

A “BIKE SYSTEM FOR ALL” IN SILICON VALLEY: A DATA-DRIVEN ANALYSIS OF THE FACTORS THAT LEAD TO SUCCESS

Abstract ID: 1711

Individual Paper Submission

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San José, California—the capital of Silicon Valley and one of the most diverse cities in the U.S.—has the potential to be a cyclist's paradise. However, despite a bike-friendly climate and topography, the average resident wastes 81 hours annually commuting by car, representing a \$2.7B loss in productivity for the region according to the 2019 Silicon Valley Index. In 2020, San José launched the Better Bike Plan 2025 with the goal to become “one of the most bike-friendly communities in North America.” This new plan builds on the City's first bike plan adopted in 2009, and envisions a 557-mile network of all-ages-and-abilities bikeways that will support a 20% bicycle mode split by 2050.

Through advanced mapping and modeling, this research evaluates the factors that contribute to a city-wide bike network that is truly “built for all.” The evaluation approach follows three steps. First, using a granular bike network dataset, network analysis, levels of traffic stress (LTS) classes, and residents' socioeconomic (SES) characteristics in the vicinity of the network, we first identify bike desert in the City of San José and use that to assess whether and to what extent San José has succeeded in achieving an equitable infrastructure distribution. Second, using resident and cyclists' SES characteristics (obtained from StreetLigth data), we assess whether the availability of infrastructure alone could attract riders from underserved communities. Finally, we combine datasets on cyclists' SES attributes, bikeway classes with different street designs, built environment factors e.g. trails and safety features, and other factors to quantify their impact on increasing the share of cyclists from underserved communities and provide empirical evidence for building a system that works for all.

Citations

- Mekuria, M. C., Furth, P. G., & Nixon, H. (2012). Low-stress bicycling and network connectivity.
- Lowry, M. B., Furth, P., & Hadden-Loh, T. (2016). Prioritizing new bicycle facilities to improve low-stress network connectivity. *Transportation Research Part A: Policy and Practice*, 86, 124-140.
- Herst, J., 2013. Bike Score Expands to Over 100 Cities. Walk Score Blog.
- Cervero, R., Sarmiento, O. L., Jacoby, E., Gomez, L. F., & Neiman, A. (2009). Influences of built environments on walking and cycling: lessons from Bogotá. *International journal of sustainable transportation*, 3(4), 203-226.
- City of San Jose (2020). San José Better Bike Plan 2025 Map. Retrieved March 19, 2022, from <https://www.sanjoseca.gov/your-government/departments/transportation/biking/better-bikeways>

Key Words: Bike Equity, Active mobility, Accessibility planning, Transportation equity

TRENDS IN TRAVEL DEMAND OF RIDESOURCING DURING THE PANDEMIC AND FACTORS OF LAND USE: A TIME-SERIES CLUSTERING ANALYSIS ON CHICAGO DATA

Abstract ID: 1712

Individual Paper Submission

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The pandemic caused by SARS-CoV-2 has disrupted urban transportation systems and transformed people's travel behavior in the United States since its first outbreak in early 2020. The literature suggests that people's mobility patterns and home-dwelling times have changed across neighborhoods with different sociodemographic characteristics (Huang et al., 2020; 2022). Public transit ridership has significantly declined in many regions of the country (Liu et al., 2020; Schwartz, 2020; Wilbur et al., 2020). Transportation mode choice has been shifted as people are hesitant to use transit (Park et al., 2021). Ridesourcing services, an emerging mobility form that had rapidly grown for nearly ten years, have also been dramatically hit by the pandemic. Evidence indicates that ridesourcing trips have notably dropped, and most users have reduced their usage during the pandemic (Alsaleh & Farooq, 2022; Loa et al., 2021).

After two years of the first SARS-CoV-2 outbreak, American society has gradually returned to normality. Most people have been back to the office and school; indoor social distancing and face masks are no longer required. However, little is known about the future of ridesourcing in the post-pandemic era. Are ridesourcing travel demands recovering to the pre-pandemic level? Are there different trends in the use of ridesourcing across areas with different land use and sociodemographic characteristics? This study addresses these questions by exploring 12-month ridesourcing trip-making data in Chicago. Pickups and drop-offs of ridesourcing trips are aggregated on a 7-day moving average in each Census tract. The pre-pandemic baseline is derived from the data between January 8 to 31, 2020. The time series starts on February 1, 2020, and ends on December 9, 2020, when U.S. Food and Drug Administration approved Pfizer–BioNTech vaccine. Therefore, each Census tract generates a time series with 313 observations. We apply

Laplacian Eigenmaps to implement manifold learning for all tracts' time series. This approach reduces the dimensions of the time-series features. Then, we use Gaussian Mixture Model to cluster the time-series features. The results suggest that all Census tracts can be clustered into four distinct categories. Only one cluster has observed a substantial recovery in the use of ridesourcing. We further estimate Heckman selection model to examine the land use and socioeconomic demographic factors associated with the likelihood of each cluster. The results suggest that the level of resourcing's recovery is significantly associated with the percentages of residential and commercial land use in the Census tracts. The odds of being in each cluster are also related to median household income and the percentage of racial and ethnic minorities.

The findings of this study reveal that the pandemic will have a long-term disruptive impact on the use of ridesourcing services even though U.S. society is returning to normality. Commercial zones and wealthier neighborhoods will observe a faster recovery compared to the rest of the city. Residential-dominant areas, on the other hand, have a slower recovery rate of ridesourcing use. The results shed light on a better understanding of the travel behavior transitioning for new mobilities in the post-pandemic era.

Citations

- Alsaleh, Nael, and Bilal Farooq. "The Impact of COVID-19 Pandemic on Ridesourcing Services Differed Between Small Towns and Large Cities." arXiv preprint arXiv:2201.10961 (2022).
- Huang, Xiao, Junyu Lu, Song Gao, Sicheng Wang, Zhewei Liu, and Hanxue Wei. "Staying at home is a privilege: Evidence from fine-grained mobile phone location data in the United States during the COVID-19 pandemic." *Annals of the American Association of Geographers* 112, no. 1 (2022): 286-305.
- Huang, Xiao, Zhenlong Li, Junyu Lu, Sicheng Wang, Hanxue Wei, and Baixu Chen. "Time-series clustering for home dwell time during COVID-19: what can we learn from it?." *ISPRS International Journal of Geo-Information* 9, no. 11 (2020): 675.
- Liu, Luyu, Harvey J. Miller, and Jonathan Scheff. "The impacts of COVID-19 pandemic on public transit demand in the United States." *PloS One* 15, no. 11 (2020): e0242476.
- Schwartz, Sam. "Public transit and COVID-19 pandemic: Global research and best practices." (2020): 35p-35p.

Key Words: COVID, Pandemic, Ridesourcing, Time Series Clustering, Land Use

THE PROBLEM HAS EXISTED OVER ENDLESS YEARS: RACIALIZED DIFFERENCE IN COMMUTING, 1980--2019

Abstract ID: 1723

Individual Paper Submission

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Black workers in 2019 spent 22.4 more minutes per week commuting than did White workers—a decline from the 50.3 minute difference in 1980, but a significant difference nonetheless. We study this pair of facts by asking a pair of questions: What are the social processes that cause Black workers to spend more time commuting today? How did these processes evolve and what factors explain the partial persistence of longer commutes among Black workers? We call these longer commutes the racialized difference in commute times, to capture the role of social forces that differently shape Black workers' opportunities and outcomes, both in commuting and in the underlying factors that shape commute times.

We use data from the US Census and the American Community Survey to study the evolution of racialized difference in commuting. We investigate individual-level processes (such as the travel mode used for commuting), neighborhood-level processes (such as the degree of segregation and its relationship to job access), and city-level processes (such as the distribution of Black and White workers across cities). All three scales are relevant for addressing different aspects of our two questions.

Between 1980 and 2019, two factors account for the majority of the racialized difference in commuting: Black workers are more likely to commute by transit, which is relatively slow, and are more likely to live in cities that have long average commutes. Income differences do not explain the racialized difference. In fact, higher incomes are associated with longer commute times. Nonetheless, the racialized difference is largest among low income workers.

The share of Black workers commuting by car increased substantially during the last few decades. Changes to travel mode account for nearly a quarter of the total decline in racialized difference in commute times. On the other hand, the effect of city of residence is just as large today as it was in 1980. A smaller fraction of the change over time is

accounted for by changing economic characteristics: Black workers increasingly hold economic characteristics— income, occupation, and industry—that are associated with relatively short commutes. However, more than half of the decline in the racialized difference does not flow through individual-level channels that we can observe.

We lastly explore the role of spatial stratification within cities and show that it can account for differing persistence in the racialized difference in commute time across cities. In cities that are large, expensive, segregated, and congested or transit-dependent, car use does not guarantee short commutes for Black workers. These city attributes are associated with a larger and more persistent racialized difference in commute times. Cities that grew more expensive, more segregated, or more transit dependent—or, correspondingly, that had less freeway investment—saw smaller declines in racialized difference. At the same time, among drivers in small or mid-sized cities, the racialized difference has essentially disappeared—gains that appear more difficult to obtain in spatially stratified cities. Spatial stratification poses a roadblock to further declines in racialized difference in commute time.

Citations

- Kain, John F. 1968. “Housing Segregation, Negro Employment, and Metropolitan Decentralization.” *Quarterly Journal of Economics* 82 (2): 175–197.
- LeRoy, Stephen F, and Jon Sonstelie. 1983. “Paradise lost and regained: Transportation innovation, income, and residential location.” *Journal of Urban Economics* 13 (1): 67– 89.
- Taylor, Brian D., and Paul M. Ong. 1995. “Spatial Mismatch or Automobile Mismatch? An Examination of Race, Residence and Commuting in US Metropolitan Areas.” *Urban Studies* 32 (9): 1453–1473

Key Words: commuting, segregation

EARLY RETURNS ON CALIFORNIA’S EFFORTS TO SWAP LOS FOR VMT IN PROJECT-LEVEL ENVIRONMENTAL REVIEW

Abstract ID: 1725

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Automobile level of service (LOS) has been the most commonly used metric of transportation system performance in the United States since it was introduced in the 1965 Highway Capacity Manual. However, as transportation and land use planning agencies focus more on reducing car dependence and greenhouse gas emissions, they are increasingly reconsidering how they use LOS. California kickstarted the most sweeping changes to date when it enacted Senate Bill (SB) 743 in 2013, which directed the Governor’s Office of Planning and Research to revise the guidelines that dictate how transportation impacts are assessed under the state’s project-level environmental review law. In December 2018, the state officially replaced LOS with VMT as the principal measure of transportation impacts under the California Environmental Quality Act (CEQA). Local governments were required to start using a VMT-based standard by July 1, 2020.

A survey of local planners in California before the LOS-to-VMT shift found that most viewed VMT as an appropriate metric to measure the transportation-related environmental impacts from land use projects (Volker, Kaylor, & Lee, 2019). However, nearly 25% of respondents indicated that switching from LOS to VMT would not be appropriate in their jurisdiction, citing a lack of resources, a lack of information on VMT metrics, a continued need to use LOS to address congestion impacts, and/or a disproportionate burden on rural and suburban areas. These types of concerns were compounded by the lack of established practice on VMT analysis prior to the LOS-to-VMT transition.

In this study, we comprehensively assess how local governments have responded in the nearly two years since they were required to start using a VMT-based standard for analyzing transportation-related impacts in CEQA analyses of land use projects. We cataloged the responses to SB 743 of each of California’s 539 cities and counties, including their VMT impact thresholds, estimation methods, mitigation methods, and monitoring plans. We paired our document review and web searches with emails, phone calls, and virtual interviews with staff and consultants for dozens of jurisdictions.

We found that nearly 40% of cities and counties have adopted or are in the process of adopting a VMT-based impact threshold governing the environmental analyses for future projects. The remaining jurisdictions either use a case-by-case approach, do not believe any projects in their jurisdiction would trigger a significant VMT impact, or provided no response. Most of the adopting jurisdictions use two tiers of thresholds: screening and numeric. Projects that do not meet the screening thresholds (intended to streamline environmental review for low-VMT projects) are subjected to a full VMT impact analysis to see if they meet numeric VMT thresholds (mostly set at 15% below a measure of baseline VMT in the area). Most adopting jurisdictions also provide guidance on VMT mitigation for projects that exceed the numeric thresholds, but a recurring theme we heard is that there is not enough empirical evidence on VMT mitigation

or enough local government resources to monitor the efficacy of mitigation measures after implementation. In addition, suburban and rural jurisdictions expressed concern about not being able to fully mitigate the VMT impacts with local measures, which has spurred interest in regional mitigation exchanges or banks.

We also found that nearly every jurisdiction retained LOS standards; they just enforce them outside of the CEQA process. That could make it harder to achieve SB 743's goals of promoting development in low-VMT urban areas. Even low-VMT projects could still be required to study and mitigate their congestion impacts as part of the development review process outside of CEQA. The consensus feedback we received was that the LOS-to-VMT shift has not yet streamlined development in urban areas much.

Citations

- Volker, J. M. B., Lee, A. E., & Fitch, D. (2019). Streamlining the Development Approval Process in a Post-Level of Service Los Angeles. *Journal of the American Planning Association*, 85(2):114-132. <https://doi.org/10.1080/01944363.2019.1601587>.
- Volker, J. M. B., Kaylor, J., & Lee, A. E. (2019). A New Metric in Town: A Survey of Local Planners on California's Switch from LOS to VMT. *Transport Findings* (in press). <https://doi.org/10.32866/10817>.
- Lee, A. E., & Handy, S. L. (in press). Leaving Level-of-Service Behind: The Implications of a Shift to VMT Impact Metrics. *Research in Transportation Business & Management*. <https://doi.org/10.1016/j.rtbm.2018.02.003>.
- Combs, T. S., McDonald, N. C., & Leimenstoll, W. (2020). Evolution in Local Traffic Impact Assessment Practices. *Journal of Planning Education and Research* (in press). <https://doi.org/10.1177/0739456X20908928>
- DeRobertis, M., Eells, J., Kott, J., & Lee, R. (2014). Changing the paradigm of traffic impact studies: How typical traffic studies inhibit sustainable transportation. *Institute of Transportation Engineers. ITE Journal*, 84(5), 30-35.

Key Words: Level of service, Vehicle miles traveled, Environmental impact analysis, Transportation impact analysis, Land use development

HEALTHY BUT DANGEROUS: HOW DO PEOPLE VALUE THE BENEFITS AND RISKS OF WALKING?

Abstract ID: 1741

Individual Paper Submission

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Research and planning tools have accounted for the combined effects of health benefits and risks on active transportation (Peng et al., 2021; Tainio et al., 2016). However, there is a lack of understanding of individual attitudes, values, and behavioral preferences toward health and active travel. While active transportation such as walking and bicycling has the benefits of increasing physical activity and reducing carbon emissions, people who walk or bike also face health risks such as exposure to air pollution and traffic injuries (Jacobsen et al., 2009).

This study examines the public's willingness to trade off health for a change in the environmental risk when making walking decisions. Two dimensions of walking (walking for transportation, walking for leisure or exercise) are examined. The study applies a discrete choice experiment (DCE) to analyze walking preferences under nine different environmental scenarios, where the scenarios are designed as a combination of four health-related issues that encompass the benefits and risks, as well as convenience and comfort aspects of walking: air quality, traffic safety, physical activity, and climate.

Results from a stated preference survey of 3,000 random U.S. adults find that travel time and air quality are top concerns in walking for transportation and walking for leisure or exercise, respectively. Comfort temperature is a significant factor influencing the willingness to walk in both transportation and leisure or exercise situations. We also find evidence that individual awareness of health and environmental issues is poorly correlated with their behavioral preferences when faced with these issues.

This study improves our understanding of how the public's travel habits and experience, environment perceptions, and demographics shape their behavioral preferences toward walking. It calls for continued efforts to evaluate the links between public health and active transportation from a behavioral perspective.

Citations

- Jacobsen, P. L., Racioppi, F., & Rutter, H. (2009). Who owns the roads? How motorised traffic discourages walking and bicycling. *Injury Prevention*, 15(6), 369–373.

- Peng, B., Erdogan, S., Nasri, A. A., & Zou, Z. (2021). Towards a health-conscious transportation planning: A framework for estimating health impacts of active transportation at local level. *Journal of Transport & Health*, 22, 101231.
- Tainio, M., de Nazelle, A. J., Götschi, T., Kahlmeier, S., Rojas-Rueda, D., Nieuwenhuijsen, M. J., de Sá, T. H., Kelly, P., & Woodcock, J. (2016). Can air pollution negate the health benefits of cycling and walking? *Preventive Medicine*, 87, 233–236.

Key Words: active transportation, walking, health

USE OF PARCEL LOCKERS AND TRAVEL BEHAVIOR

Abstract ID: 1743

Individual Paper Submission

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The rise of online shopping has increased last-mile freight movement. To reduce the cost associated with last-mile delivery, retailers such as Amazon and Walmart provide parcel locker systems. E-commerce retailers reduce costs by consolidating deliveries, while consumers may receive their parcels faster in a secure location (Lachapelle et al., 2018; Lachapelle & Jean-Germain, 2019; Schaefer & Figliozzi, 2021). Last-mile delivery has become a major concern in urban planning due to its impacts on local congestion, air emissions and noise. If consumers are willing to use parcel lockers, local delivery miles should decrease. However, the savings in vehicle miles traveled depends on how locker users pick up parcels. The few existing studies of parcel locker users were conducted in European cities (Liu et al., 2019; Mommens et al., 2021). US cities have different spatial and transport structures, limiting the transferability of these studies. We examine parcel locker use in the second largest US metropolitan area, Los Angeles.

The effectiveness of parcel lockers in reducing truck and passenger vehicle miles traveled depend on two factors: frequency of parcel locker uses and mode of transport for picking up the parcels. We focus our research on two research questions. First, who uses lockers regularly and why? Second, how do frequent users pickup parcels? Are pickup stops made by walking, other non-motorized mode, or driving? Are pickup stops part of trip chains?

We conducted an online survey of 400 people who indicated that they used parcel lockers at least once within the past four weeks. Our survey respondents were drawn from the Los Angeles-Long Beach-Anaheim, CA Metropolitan Statistical Area. The survey was conducted through Qualtrics, an online survey platform, from January to March 2022 by sharing the link via QR code in person and circulating the link to an online audience panel. The survey included questions about their most recent experience using a parcel locker, basic information about the parcel(s) they received, online shopping behavior, pick-up trip related attributes, and their socio-demographic information. After removing invalid survey responses, we developed a regression model on the frequency of parcel locker use, whether the users chained their pick-up trip, and which mode they used for their trip to the parcel locker.

Among those who had used a locker at least once in the past four weeks, 18.0 percent responded that they use the locker for all their online purchases. Frequent parcel locker use is associated with middle income level, relatively lower education level, younger consumers, and White or non-Hispanic race/ethnicity. Frequency is also associated with full-time employment, suggesting that parcel locker pickup may be more convenient as a trip on the way home, or that pickup is an alternative when no one is at home for a residential delivery. Parcel locker use is more likely among frequent online shoppers. The top reasons for using lockers are convenience and package security, followed by personal security and fast shipping.

The most frequent mode used for pickups is driving, followed by walking and transit. About 49.3% of pickups are part of trip chains. Younger (under 45) consumers, those with higher education levels, and those employed are associated with more sustainable travel behavior outcomes (i.e. chain pick-up trips, use active modes and transit). Neighborhood attributes such as density, transit access, and walkability were also associated with chaining pick-up trips and using modes other than automobiles. Our results offer some insights on the potential of parcel lockers to reduce VMT and associated environmental impacts. Next steps include presenting results of formal models of locker use frequency and pickup mode choice, as well as estimating VMT reductions associated with locker use.

Citations

- Lachapelle, U., Burke, M., Brotherton, A., & Leung, A. (2018). Parcel locker systems in a car dominant city: Location, characterisation and potential impacts on city planning and consumer travel access. *Journal of Transport Geography*, 71, 1-14.
- Lachapelle, U., & Jean-Germain, F. (2019). Personal use of the Internet and travel: Evidence from the Canadian General Social Survey's 2010 time use module. *Travel Behaviour and Society*, 14, 81-91.

- Liu, C., Wang, Q., & Susilo, Y. O. (2019). Assessing the impacts of collection-delivery points to individual's activity-travel patterns: A greener last mile alternative?. *Transportation Research Part E: Logistics and Transportation Review*, 121, 84-99.
- Mommens, K., Rai, H. B., Van Lier, T., & Macharis, C. (2021). Delivery to homes or collection points? A sustainability analysis for urban, urbanised and rural areas in Belgium. *Journal of Transport Geography*, 94, 103095.
- Schaefer, J. S., & Figliozzi, M. A. (2021). Spatial accessibility and equity analysis of Amazon parcel lockers facilities. *Journal of Transport Geography*, 97, 103212.

Key Words: parcel locker, last mile delivery, usage behavior, travel behavior, survey

AN INTERNATIONAL COMPARISON OF THE ROLE OF FORMAL VS. INFORMAL INSTITUTIONS IN MULTI-AGENCY TRANSIT COORDINATION: EXAMINING GERMANY, ISRAEL AND THE US

Abstract ID: 1748

Individual Paper Submission

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Though public transport and infrastructure are an essential backbone to any urban structure, land use, and solutions to global warming, there is surprisingly little written about the governance of public transit systems, particularly international comparative work. This lack of knowledge could lead to inefficient use of funds when building new infrastructure, with unsatisfactory results—for example, multiple ticketing systems, poorly timed transfers, and services that don't go where people live. (As an example of poor coordination, the Chicago El does not serve any of the city's major train stations, as they were historically operated by different organizations). This qualitative case study analysis compares transit governance in two cities in Germany, two in Israel and two in the US, chosen for the fragmentation of their political and funding systems, and differing levels of government at which decisions are made. Germany was chosen for its use of regional transit management corporations to overcome local fragmentation. Israel was chosen for its high degree of top-down funding and political decision making. And the US was chosen for its high localization of decision making. For each case, we use a combination of annual reports, policy documents, tax collection information, fare information and interviews, in order to understand the role of formal institutions in coordinating ticketing, schedules and stop location across multiple jurisdictions in a single region. We compare this with the role played by informal coordination—i.e. norms that facilitate cross-agency collaboration. In doing so, we understand how different models for overcoming fragmentation can have an impact on service outcomes like accessibility and coverage, making it possible to better understand the institutional framework that may facilitate or hinder cross-agency coordination.

Citations

- Buehler, R., Pucher, J., & Dümmler, O. (2019). Verkehrsverbund: The evolution and spread of fully integrated regional public transport in Germany, Austria, and Switzerland. *International Journal of Sustainable Transportation*, 13(1), 36-50.
- Chisholm, D. (1992). *Coordination without hierarchy: Informal structures in multiorganizational systems*. Univ of California Press.
- Hrelja, R., Pettersson, F., & Westerdahl, S. (2016). The qualities needed for a successful collaboration: A contribution to the conceptual understanding of collaboration for efficient public transport. *Sustainability*, 8(6), 542.
- Hirschhorn, F., van de Velde, D., Veeneman, W., & ten Heuvelhof, E. (2020). The governance of attractive public transport: Informal institutions, institutional entrepreneurs, and problem-solving know-how in Oslo and Amsterdam. *Research in Transportation Economics*, 83, 100829.
- Sharaby, N., & Shiftan, Y. (2012). The impact of fare integration on travel behavior and transit ridership. *Transport Policy*, 21, 63-70.

Key Words: Transit, Governance, Institution, Collaboration, Service Integration

EXPLORING SPATIAL ASSOCIATIONS BETWEEN NEAR-MISS AND POLICE-REPORTED CRASHES: THE HEINRICH LAW IN TRAFFIC SAFETY

Abstract ID: 1749

Individual Paper Submission

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This research explores the spatial association between police-reported crashes and near-miss crashes experienced by road users using the network cross K-function method and GIS. A way to reduce traffic fatalities is to identify crash hotspots and implement targeted safety improvements at the hotspots. However, police-reported crash data tend to underreport minor or no injury crashes, and collecting a sufficient number of crashes to identify crash hotspots often requires an extended time. Thus, several studies have suggested using near-miss crash data, if available, in addition to police-reported crash data to develop safety improvement measures. Near-miss crashes can provide information that police-reported crash data do not provide. Road users involved in near-miss crashes can provide detailed information without fear of legal consequences and unknown contributing factors.

A total of 888 near-miss crashes from a field survey conducted in a district of Seoul, South Korea, were analyzed and compared to 3,856 police-reported crashes in the study area. The district has various land uses, including residential and commercial areas and open spaces, and a mix of different functional classifications. The results show that minor and severe police-reported crashes have statistically significant spatial associations on street networks and near-miss and police-reported crashes also have the associations. Thus, the Heinrich's law, which postulates police-reported minor and severe crashes and near-miss crashes may share underlying locational factors, has merit to apply in traffic safety. In particular, vehicle-to-vehicle crashes on collector and local roads and pedestrian crashes on local roads show significant spatial associations with close proximity. These findings indicate that road users' near-miss crash experience reflecting local knowledge can supplement police-reported traffic crashes in identifying crash hotspots in road networks and facilitate the development of safety improvement measures and strategies.

Citations

- Aldred, R., Crosweller, S., 2015. Investigating the rates and impacts of near misses and related incidents among U.K. cyclists. *Journal of Transport and Health*. 2, 379-393. <https://doi.org/10.1016/j.jth.2015.05.006>
- Cho, G., Rodríguez, D. A., Khattak, A. J., 2009. The role of the built environment in explaining relationships between perceived and actual pedestrian and bicyclist safety. *Accident Analysis and Prevention*. 41, 692-702. <https://doi.org/10.1016/j.aap.2009.03.008>
- Okabe, A., Yamada, I., 2001. The K-function method on a network and its computational implementation. *Geographical Analysis*, 33, 271-290. <https://doi.org/10.1111/j.1538-4632.2001.tb00448.x>
- Heinrich, H.W., 1931. *Industrial accident prevention: a scientific approach*. New York: McGraw-Hill.

Key Words: Traffic safety, Near-miss crash, Heinrich law

PATHWAYS TO CAR OWNERSHIP FOR LOWER-INCOME HOUSEHOLDS IN THE U.S.

Abstract ID: 1751

Individual Paper Submission

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Car ownership is a double-edged sword for low- and moderate-income households in the United States. Owning or having regular access to a car is essential for daily mobility and economic security throughout most of the U.S. As a result, 94% of all households own at least one car, truck, or van. Low- and moderate-income households, who also own cars at high rates, spend a large portion of their income owning, operating, and maintaining cars. Meanwhile, Americans' automobile debt has never been greater: Americans had \$1.3 trillion in outstanding motor vehicle loans at the end of 2021, second only to household mortgages and student loans in total debt.

We know little about how lower-income households acquire cars despite decades of research on the relationship between car ownership and demographics, the built environment, and residential relocations. Broad-brush statistics about aggregate car ownership and financial trends offer limited insights into the experiences of low- and moderate-income households. These households finance new and used cars through traditional channels, but also secure vehicles from other avenues such as gifts from friends and family, buying cars from individuals selling cars online via Facebook Marketplace and Craigslist, car auctions, etc.

We use a web-based opt-in survey of 1,000 U.S. residents in Spring 2022 to ask how low- and moderate-income households acquired cars and how these different pathways affect their lives. We restricted our sample to 25- to 85-year-olds with household incomes of less than \$40,000 who have owned a car in their adult lives.

Although most respondents obtained their cars from new and used car dealers, over 40% obtained their cars from informal purchases, gifts, and moving in with someone who has a car. Respondents who did not get their cars from

dealers were more likely to be transitioning from not having a car. Additionally, most obtained older cars, paid less for them, and were more likely to pay in cash. We also observe significant sociodemographic differences between the different pathways and their reasons for obtaining a car. Finally, we examine the effects of acquiring a car on respondents' lives. Across the five different pathways, respondents overwhelmingly reported positive effects on quality of life and felt that getting the car was worth it. However, those who obtained used cars from dealers or received the car as a gift were more likely to experience financial hardships associated with the car.

Citations

- King, David A., Michael J. Smart, and Michael Manville. 2019. "The Poverty of the Carless: Toward Universal Auto Access." *Journal of Planning Education and Research*, February, 0739456X18823252. <https://doi.org/10.1177/0739456X18823252>.
- Klein, Nicholas J., and Michael J. Smart. 2019. "Life Events, Poverty, and Car Ownership in the United States: A Mobility Biography Approach." *Journal of Transport and Land Use* 12 (1): 395–418. <https://doi.org/10.5198/jtlu.2019.1482>.
- Pollard, Jane, Evelyn Blumenberg, and Stephen Brumbaugh. 2020. "Driven to Debt: Social Reproduction and (Auto)Mobility in Los Angeles." *Annals of the American Association of Geographers* 0 (0): 1–17. <https://doi.org/10.1080/24694452.2020.1813541>.

Key Words: transportation, car ownership, car access, poverty

PLANNING LIMITS: UNCONSTRAINED TRANSPORTATION PLANS IN AN ERA OF CLIMATE CONSTRAINTS

Abstract ID: 1762

Individual Paper Submission

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Federal law and regulations require states to prepare long-range (20+ yr.) transportation plans that establish the framework for making transportation investment decisions and aim to meet social, economic and environmental goals. Statewide transportation plans must be coordinated with regional transportation plans and programs developed by metropolitan transportation organizations (MPOs) and are expected to reflect the views of local elected officials and the public. However, while shorter-range transportation improvement programs (TIPs), which list the projects to be funded, are required to reflect the funding that is reasonably anticipated to be available for implementation, long range transportation plans can be fiscally unconstrained.

This paper draws upon a study of California's transportation plans and programs (Caltrans, 2021) to examine the impacts of unconstrained long range transportation planning in the context of substantial state mandates for reducing climate change impacts, improving equity, and meeting other social and environmental goals (Deakin, Chow, and Son, 2021; Barbour and Deakin, 2012). The analysis is framed in the classic literature on implementation (e.g., Pressman and Wildavsky, 1986) as well as contemporary work on integrated transport (e.g., Givoni and Banister, 2010) and is based on a wide-ranging literature review and a close reading of planning and programming documents, augmented by over 80 interviews with academics, practitioners, and other stakeholders.

While each state has adapted the transportation planning process to its own circumstances, California's experience offers a valuable window into the challenges posed in actually implementing long range plans. The California transportation plans have been developed in a context of anticipated growth in population and the economy (despite recent COVID-related setbacks), and achievement of the state's ambitions for emissions reductions, equity improvements, and better balanced mode choices will require large-scale, concerted effort. While new transportation options, from high-speed rail to bike sharing, are being added to California's transportation systems, and transportation technologies continue to move toward electrification and automation, investments in highway expansions continue and, in some cases, these highway projects, while locally popular, appear to work counter to statewide environmental and equity goals. Also, the state's long range plan, like those of its MPOs, depends on technological change and pricing reforms to achieve most of the goals. These elements are part of the unconstrained elements of the plan and their achievement depends on numerous corporate and individual actions beyond the scope of authority of transportation agencies in addition to those that government could initiate. The aspirations of the plan are proving difficult to map to implementation actions even for the near term.

The paper recommends including a fiscally and legally constrained alternative along with the more aspirational unconstrained proposals, to illustrate the gap between intentions and capacities.

Citations

- Barbour, E., & Deakin, E. A. (2012). Smart growth planning for climate protection: Evaluating California's Senate Bill 375. *Journal of the American Planning Association*, 78(1), 70-86.
- Caltrans (2021). California Transportation Plan 2050. <https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf>
- Deakin, Elizabeth, Chow, Chun Ho, & Son, Daisy (Oct. 2021). Review of Statewide Transportation Plans for California. Working Paper prepared for the California Strategic Growth Council in response to AB 285 (Friedman, 2019.) Permalink <https://escholarship.org/uc/item/otn6w554>, DOI 10.7922/G2C53J5F
- Pressman, Jeffrey L., and Wildavsky, Aaron (1984). *Implementation: How great expectations in Washington are dashed in Oakland; Or, why it's amazing that federal programs work at all, this being a saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation*. Vol. 708. Univ of California Press.
- Givoni, Moshe and Banister, David, eds. (2010). *Integrated Transport*. Routledge.

Key Words: transportation policy, transportation planning, state DOTs, metropolitan planning organizations, implementation

'COVID LANES' IN CONTEXT: SPATIAL, DESIGN, AND NETWORK CHARACTERISTICS OF PARIS'S PANDEMIC BIKE RESPONSE

Abstract ID: 1766

Individual Paper Submission

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Many cities responded to the COVID-19 pandemic by erecting new bike lanes, but there has been little scrutiny of where these lanes are being installed, how they relate to pre-COVID networks, what street uses they replaced, and their design characteristics (such as their level of physical protection and bi-directionality). This study pursues these questions in the context of Paris, France, a city currently in the midst of a large-scale transformation of its streets. Paris bypassed standard-construction processes to rapidly expand its bike-lane network amidst the pandemic. This study analyses these new lanes in terms of their design, spatial footprint, and relationship to the pre-COVID network. Municipal data, street imagery, and in-person observations demonstrate that Paris's new 'pop-up' lanes are a higher share bi-directional than the pre-COVID network (49% vs. 39%), a higher share more protected (77% vs. 73%), and average a higher number of interconnections, all attributes crucial to increasing ridership. These 47 new kilometers connect the city's peripheral ring to its inner core, primarily represent new lanes as opposed to upgrades of existing lanes (66% vs. 33%), and replace both traffic lanes and on-street parking. Overall, accelerating the rollout of these lanes and using alternative-barrier materials (staggered concrete blocks and plastic posts) did not sacrifice design, spatial, or network characteristics in comparison to pre-pandemic lanes. It also serves as an example of how other cities can rapidly re-allocate street space to more sustainable travel, and/or speed the installation of existing bike plans rather than proceeding via a more incremental and delayed approach. Future research must consider if and how these lanes transition from temporary to permanent status, and what planners (in Paris and elsewhere) learned from this pandemic-era program that can inform long-term bike planning.

Citations

- Firth, Caislin L., Kate Hosford, and Meghan Winters. 2021. "Who Were These Bike Lanes Built for? Social-Spatial Inequities in Vancouver's Bikeways, 2001–2016." *Journal of Transport Geography* 94 (June): 103122. <https://doi.org/10.1016/j.jtrangeo.2021.103122>.
- Monsere, Christopher, Jennifer Dill, Nathan McNeil, Kelly Clifton, Nick Foster, Tara Goddard, Matthew Berkow, et al. 2014. "Lessons from the Green Lanes: Evaluating Protected Bike Lanes in the U.S." NITC-RR-583. Portland, OR: National Institute for Transportation and Communities. <https://doi.org/10.15760/trec.115>.
- Kraus, Sebastian, and Nicolas Koch. 2021. "Provisional COVID-19 Infrastructure Induces Large, Rapid Increases in Cycling." *Proceedings of the National Academy of Sciences* 118 (15). <https://doi.org/10.1073/pnas.2024399118>.

Key Words: Cycling, COVID-19, Transportation, GIS

DIAGNOSING PEDESTRIAN AND BICYCLIST SAFETY: ANALYSIS OF EXPOSURES TO RISK AND ASSOCIATED ENVIRONMENT WITH LOCATION BASED SERVICE DATA

Abstract ID: 1773

Individual Paper Submission

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Walking and biking have gained increased popularity due to the benefits of physical activity, health, psychological well-being, leisure, and improved environmental quality. Walking and biking can be facilitated or constrained by the physical form of communities in general as well as transportation system in particular. Therefore the development of walkable and bikeable environment is one effective way to encourage active living and healthy community. Increasingly, local governments are considering how community design and transportation system will impact residents' active and healthy life style.

Along with these benefits of walking and biking, safety concerns have also been the focus of much attention. The higher risk of death and serious injury when crashes involve pedestrians or bicyclists increases the need to be proactive in reducing these risks.

Biking and walking flows are essential components in safety analysis. To design appropriate policy solutions, information about the pattern, intensity, and volume of events that could result in safety issues is critically important, as exposures and flows of walking and biking are highly associated with risks. Therefore a variety of pedestrian and bicycle exposure measures have been suggested but they are inconsistent and limited, and there is no widely accepted approach. In addition, the lack of walking and biking activity data available at a finer spatial resolution has been a major challenge in the safety research. However, recent studies have identified the potential for safety modeling given the recent advancement of ICT (Information and Communication Technology) coupled with geospatial technology introduced emerging data sources, including apps featuring LBS (Location-Based Service) through wi-fi, bluetooth, and smartphones. LBS data, such as that produced by StreetLight, have significantly improved in the last few years to be accurate enough for reliable use in modeling and planning work. The increased sample size, geographic coverage, and temporal coverage of LBS data could allow for volume-based modeling. To solve a variety of safety challenges, this research develops an innovative approach with emerging data sources of Location Based Service information.

The motivation of the research is to enhance pedestrian and bicyclist safety with emerging active travel data. The objective of the research is to develop a reliable methodology for measuring pedestrian and bicyclist exposure and analyzing associated risks, which planners and designers can utilize to inform smarter decisions, making safer communities. To accomplish research objectives, the research develops a GIS model (coupled with statistical modeling) that estimates and displays pedestrian and bicyclist risk exposure at a street segment level. In doing so, the research utilizes location based service data processed by StreetLight. The output of processing is hotspot mapping, with which planners and designers can identify and prioritize risk locations. The research analyzes spatial variation and temporal variation of pedestrian and bicyclist exposure and associated risks across a region. Most literature assumes that higher movement volume is associated with higher crashes. However, some locations have lower movement volumes but higher crashes, as location specific features of physical and social environments are also associated with potential risk. The research also analyzes built environment features and design elements at higher risk locations. The study area will be communities in Lincoln, NE.

The research contributes to the methodological improvement in transportation safety planning, and to the knowledge of the human-environment interactions. From planning practice side, the research outcome can be utilized by transportation planners and urban designers to identify and prioritize locations of higher risks where safety improvements would be most effective. This enhances local government's ability to proactively address safety issues.

Citations

- Ferster, C., Nelson, T., Laberee, K., & Winters, M. (2021). Mapping bicycling exposure and safety risk using Strava Metro. *Applied geography*, 127, 102388.
- Alattar, M. A., Cottrill, C., & Beecroft, M. (2021). Sources and Applications of Emerging Active Travel Data: A Review of the Literature. *Sustainability*, 13(13), 7006.
- Lee, K., & Sener, I. N. (2020). Emerging data for pedestrian and bicycle monitoring: Sources and applications. *Transportation research interdisciplinary perspectives*, 4, 100095.

Key Words: Active and Safe Community, Pedestrian and Bicyclist Safety, Location Based Service Data

COMMUTING BY PUBLIC TRANSPORT: INFRASTRUCTURE, FRICTIONS AND AGENCY IN INDIAN CITIES

Abstract ID: 1776

Individual Paper Submission

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Public transport infrastructure and associated technologies are central to the daily commuting experience. Following the mobility turn, transport infrastructure has received scholarly attention not only as an enabler of movement, but also as venues for affective experiences and identity formation (Aldred, 2013; Edensor, 2004; Sheller & Urry, 2006). These alternative readings of infrastructure are contingent on the design of transport spaces and technology choices

determined by complex techno-managerial planning processes (Siemiatycki, 2006). How are everyday commuting experiences affected by planning decisions? How do these experiences contribute to the formation, sustenance and deepening of commuter identities on public transport? Using ethnographic methods including interviews, ride-alongs and participant observation, I examine bus rapid transit and metrorail infrastructures in Indian cities of Ahmedabad and Kochi, documenting commuting experiences mediated by technologies associated with transport infrastructure. By drawing on commuters' accounts, I argue that planning decisions play a major role in determining how commuters navigate their way on and around transport infrastructure. While technologies are meant to smoothen existing frictions, they also engender new frictions, unforeseen by planners, creating opportunities for commuters to exercise their agency and avoid the deleterious effects of such frictions. In this process, they create embodied practices that offer planners clues to manage the challenge of creating inclusive transport infrastructure. This research adds to the growing body of work that looks at transport infrastructures from a qualitative lens, encouraging an understanding of mobile bodies steeped in the dynamicity of transport spaces as much as the rich and diverse narratives resulting from an ethnographic approach to mobile situations.

Citations

- Aldred, R. (2013). Incompetent or too competent? Negotiating everyday cycling identities in a motor dominated society. *Mobilities*, 8(2), 252–271.
- Edensor, T. (2004). Automobility and national identity: Representation, geography and driving practice. *Theory, Culture & Society*, 21(4–5), 101–120.
- Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment & Planning A*, 38(2), 207–226.
- Siemiatycki, M. (2006). Message in a metro: Building urban rail infrastructure and image in Delhi, India. *International Journal of Urban and Regional Research*, 30(2), 277–292.

Key Words: Commuting, Frictions, Technologies, Agency

DECLINING TRANSIT RIDERSHIP IN MID-SIZED CITIES: ARE PEOPLE BETTER OFF?

Abstract ID: 1786

Individual Paper Submission

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Numerous studies have explored the internal factors (i.e. service speed, reliability, and fares) and external factors (i.e. population and employment density, demographics, car ownership, gas prices, and telework) associated with transit use to understand declining ridership (Boisjoly, et.al., 2018; Grisby et al., 2018; NASEM, 2022). However, most of this research has examined transit ridership trends in large metro areas; thus, the determinants of ridership decline in mid-sized cities are not well understood. Moreover, most of this research has failed to consider whether those who changed modes are better off in terms of social, economic, or health outcomes.

An area that has been largely understudied are the consequences of transportation insecurity. Transportation insecurity occurs when a person cannot regularly move from place to place in a safe and timely manner because they lack the resources they need for transportation (Gould-Werth, Griffin, and Murphy, 2018). This type of insecurity plays an important role in the ability to maintain employment, access necessary resources, and build health and wealth. However, historic urban planning and decision-making processes have left low-income communities and communities of color with substantially less benefit and substantially higher burdens from transportation investment. These processes have led to inaccessible, inadequate, unaffordable, unreliable, or unsafe transportation, thus transportation insecurity. People may therefore arrive late to their destinations, skip trips altogether, or forego spending on essentials. The consequences of transportation insecurity may include getting fired, losing wages, or foregoing food or medications. These consequences can threaten self-sufficiency and exacerbate existing inequities in social, economic, and health outcomes.

The purpose of this study is to examine the relationship between transportation insecurity, transit ridership, and neighborhood characteristics in mid-sized cities. The research draws from a new household survey conducted in seven Illinois MSAs located outside the Chicago region, each of which have one or more transit agencies that serve at least 1.5 million passengers annually. The survey was administered by mail in April 2021 to a stratified random sample of 80,000 potential transit riders, defined as households who live within one-half mile of fixed-route transit service, across the seven MSAs. The survey asked questions about travel frequency, transit use, and two questions about transportation insecurity. Survey responses were combined with geocoded data on the built environment and location affordability from the Center for Neighborhood Technology.

Preliminary analysis shows that more people in mid-sized cities who rode the bus in March 2020 experienced consequences of transportation insecurity than people who did not ride the bus during that time, with 26% of riders

experiencing transportation insecurity compared to 7% of non-riders. Transportation insecurity is even higher among people who quit riding the bus sometime in the five years prior to COVID-19, with 34% of previous riders experiencing transportation insecurity compared to 6.2% of non-riders. Although, vehicle ownership was lower among people who rode the bus in March 2020, they are similarly as likely as people who don't ride the bus to be severely transportation cost-burdened, meaning they are spending more than 24% of their annual income on transportation.

This study will offer new insights into the social and economic consequences of inadequate transportation in mid-sized cities. Primary data collection on the consequences of transportation insecurity will help us draw new conclusions that are unavailable in studies that focus on internal and external factors of transit ridership. We expect the study to contribute to a greater understanding of the determinants of transit ridership, as well as a greater understanding of transportation as a social determinant of health. The findings can inform transit and land use strategies to be centered on improving transportation security, rather than simply increasing ridership.

Citations

- Boisjoly, G., Grisé, E., Maguire, M., Veillette, M.-P., Deboosere, R., Berrebi, E., & El-Geneidy, A. (2018). Invest in the ride: A 14-year longitudinal analysis of the determinants of public transport ridership in 25 North American cities. *Transportation Research Part A: Policy and Practice*, 116, 434–445. <https://doi.org/10.1016/j.tra.2018.07.005>
- Gould-Werth, A., Griffin, J., and Murphy, A. K. 2018. "Developing a New Measure of Transportation Insecurity: An Exploratory Factor Analysis." *Survey Practice* 11 (2). <https://doi.org/10.29115/SP-2018-0024>.
- Grisby, D., Dickens, M., Hughes-Cromwick, M., & American Public Transit Association. (2018). Understanding Recent Ridership Changes: Trends and Adaptations. Retrieved from <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Understanding-Recent-Ridership-Changes.pdf>
- McAndrews, C. (2020). Chapter 3 - Transportation and land use as social determinants of health: The case of arterial roads. In E. Deakin (Ed.), *Transportation, Land Use, and Environmental Planning* (pp. 35–53). Elsevier. <https://doi.org/10.1016/B978-0-12-815167-9.00003-7>
- National Academies of Sciences, Engineering, and Medicine. 2022. Recent Decline in Public Transportation Ridership: Analysis, Causes, and Responses. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26320>.

Key Words: Transit ridership, Inadequate transportation, Transportation Insecurity, Social determinants of health, Accessibility

DEVELOPING BUS RAPID TRANSIT (BRT) STATION AREAS WITHIN FREIGHT RAIL CORRIDORS: PERCEPTIONS AND REALITY

Abstract ID: 1794

Individual Paper Submission

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Bus Rapid Transit (BRT) has been gaining popularity worldwide over the past few decades. This is largely due to it offering similar mobility benefits as rail rapid transit but with a less hefty price tag (Cain and Flynn, 2013). In addition to the mobility benefits BRT provides, research also suggests that BRT – especially BRT with exclusive, bus-only transitways – can induce developments surrounding transit stations, in-line with transit-oriented development (TOD) (Cervero and Dai, 2014).

With creating a new, large-scale infrastructure project like a BRT system or single corridors, acquiring the necessary land remains an issue. On the one hand, building BRT in built-up areas can be costly – in terms of money and time. On the other hand, building BRT in undeveloped areas may be less costly in these same regards, but with limited ready-ridership potential. Still, building BRT in undeveloped areas can allow planners and developers open areas to develop around BRT stations. When developing in undeveloped areas, cities have often chosen to develop over former industrial freight rail corridors [see Pittsburgh for example (Perk and Catala, 2009)] or alongside in-use freight rail corridors as is the case for Winnipeg, Manitoba, Canada. Indeed, Winnipeg presents an ideal case to highlight development potential surrounding BRT station areas due to its recently completed Southwest Transitway BRT corridor and it being in the midst of planning for additional corridors alongside freight rail corridors.

Still, the development potential surrounding such BRT station areas remains. This research thus asks: 1) How do planners and developers view the development potential of BRT station areas alongside in-use freight rail corridors? And, 2) how do developments in BRT station areas compare to Winnipeg's non-station area developments? To answer

the first question, this research uses surveys focusing on Winnipeg planners and developers. For the second question, this research uses spatial regressions to understand the likelihood of new developments to be located in BRT station areas compared to a) non-station areas and b) areas at greater distances from the city center.

Survey findings reveal that planners and developers positively view developing in Winnipeg's BRT station areas. Planners also revealed that zoning restrictions are one of the biggest hurdles to BRT station area developments in Winnipeg. However, recent residential developments are more likely to be located in areas farther away from the city center and in single-family zoned areas than in BRT station areas. In this regard, results suggest a disconnect between what is said by planners and developers and what actually gets developed. Although, current zoning may restrict planners and developers from actually implementing the developments they want.

Nevertheless, the main contribution of this research is that it identifies the positive views planners and developers hold regarding developing in BRT station areas within in-use freight rail corridors. As cities, and especially North American cities with long-standing rail corridors, continue to implement or consider BRT, our results reveal the potential for BRT corridors to spur development in areas long overlooked.

Citations

- Cain, Alasdair, and Jennifer Flynn. "Examining the ridership attraction potential of bus rapid transit: A quantitative analysis of image and perception." *Journal of Public Transportation* 16, no. 4 (2013): 4.
- Cervero, Robert, and Danielle Dai. "BRT TOD: Leveraging transit oriented development with bus rapid transit investments." *Transport Policy* 36 (2014): 127-138.
- Perk, Victoria A., and Martin Catala. Land use impacts of bus rapid transit: effects of BRT station proximity on property values along the Pittsburgh Martin Luther King, Jr. East Busway. No. FTA-FL-26-7109.2009. 6. 2009.

Key Words: Bus Rapid Transit, Transit-oriented Development

EMPLOYMENT CONCENTRATION, DISPERSION, AND THE CHANGING COMMUTE IN THE SAN FRANCISCO BAY AREA

Abstract ID: 1800

Individual Paper Submission

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Concern for increasing commute distances has grown across California and especially in the San Francisco Bay Area, a problem that has garnered national attention. The popular press has drawn attention to households who relocate to California's Central Valley in search of affordable housing, trading cheaper housing costs for longer -distance commutes to jobs in San Francisco.

Most scholars agree that lengthening commutes are a concerning trend with detrimental consequences for the environment, traffic congestion, work outcomes, and household well-being. There are numerous studies on commuting behavior in the San Francisco Bay Area, many focused on the impact of job decentralization in the 1990s. Changes in this region—specifically rapid job growth and escalating housing prices—underscore the need for additional research on this topic.

In this study, we hypothesize that commute distance in the nine-county San Francisco Bay Area has increased over time, largely due to two factors: the continued dispersion of jobs to outlying areas and the effect of limited housing supply on the viability of residential selection near downtown job centers. We draw on data from the 2002 and 2015 Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES). We predict commute distance as a function of workplace characteristics, including employment location, a weighted measure of the ratio of jobs to residents, and other workplace-area variables (e.g. percent young workers, job type concentration, proximity to rail, urban neighborhood location).

We find that commute distance in the Bay Area increased modestly—about 3.5 percent—from 2002 to 2015. The factors that explained commute distance remained relatively stable over this period. Commute distances were shorter in the two major job centers (downtown San Francisco and San Jose) but grew substantially with distance to the regions' other job centers. The ratio of jobs to residents was positively—albeit weakly—associated with commute distance. While mean commute distance did not increase as much as expected, total commute miles grew by 19 percent, from 57.8 million one-way miles in 2002 to 68.7 million miles in 2015.

Interventions—such as increasing the supply of housing—may have a small negative effect on commute distance, particularly in downtown neighborhoods where commute distances are relatively short. The growth in total commute

miles, however, is largely due to rapid job growth. Policies to improve transit and better manage driving can help ease the difficulty of traveling into increasingly congested areas.

Citations

- Cervero, R. (1996). Jobs-housing balance revisited: Trends and impacts in the San Francisco Bay Area. *Journal of the American Planning Association*, 62(4), 492–511.
- Cervero, R., & Wu, K.-L. (1997). Polycentrism, commuting, and residential location in the San Francisco Bay Area. *Environment and Planning A: Economy and Space*, 29(5), 865–886.
- Hu, L., & Schneider, R. J. (2017). Different ways to get to the same workplace: How does workplace location relate to commuting by different income groups? *Transport Policy*, 59, 106–115.
- Modarres, A. (2011). Polycentricity, Commuting Pattern, Urban Form: The Case of Southern California. *International Journal of Urban and Regional Research*, 35(6), 1193–1211.
- Schleith, D., & Horner, M. W. (2014). Commuting, Job Clusters, and Travel Burdens: Analysis of Spatially and Socioeconomically Disaggregated Longitudinal Employer–Household Dynamics Data. *Transportation Research Record*, 2452(1), 19–27.

Key Words: commute distance, employment location, housing, job centers

MANAGING IMPACTS OF MAJOR EVENTS: A CASE STUDY OF THE LOS ANGELES MEMORIAL COLISEUM

Abstract ID: 1817

Individual Paper Submission

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Major events are a significant source of traffic congestion, especially in large metropolitan areas. This paper examines strategies to better manage special event traffic using a case study of football games played at the Los Angeles Memorial Coliseum, a venue located near downtown Los Angeles with a capacity of about 80,000. From 2016 to 2020, two teams played home games at the Coliseum, the Los Angeles Rams and the University of Southern California Trojans. These events take place in an area that already has a high level of recurrent congestion. In previous work we examined the traffic impacts of game days on both the highway and arterial systems. We found highway impacts extend up to 10 miles away from the venue, while arterial impacts are more concentrated in both space and time. In this paper we address mitigation: how can major events be better managed to reduce congestion and the associated pollution and GHG emissions

Using the macrosimulation model PTV-VISUM we simulated the impact of three traffic mitigation scenarios on the main freeways approaching the venue site. The scenarios include spreading arrivals over a longer time period and increasing the share of arrivals by transit. The transit scenarios include increasing the number of buses to accommodate the new demand. We also examine mitigation strategies on the local arterials surrounding the venue using the microsimulation model PTV-VISSIM. In this case the problem is queuing at parking lots which cause backups on the nearby streets. Again we apply arrival smoothing and shifts in transit share.

Our simulation results show that strategies for better management of major event traffic depend on the characteristics of the attendees, and in particular on arrival patterns. USC game arrivals are spread across many hours, hence simply adjusting arrival times does not reduce congestion. A better strategy for USC games is to greatly increase transit use. In contrast, Rams attendees tend to arrive within 1-2 hours of the game, generating a surge of demand that propagates through the network and increases in magnitude as it converges on the Coliseum area. In this case peak spreading makes sense.

The final section of the paper discusses policies and strategies to increase transit use, reduce queuing and searching for parking, and spreading arrivals for Rams games. We put forward five packages of policy recommendations to reduce traffic impacts: staggering arrival and departure times; communicating game day traffic; improving parking; increasing transit availability; and managing ride-hail and increasing car sharing. These proposals either make intuitive sense, draw on lessons from elsewhere, or reflect findings from behavioral science.

Citations

- Consoli, F., Rogers, J., Al-Deek, H., Tatari, O., & Alomari, A. (2013). Smart event traffic management. *Transportation Research Record*, 2396, 107–116. <https://doi.org/10.3141/2396-12>

- Giuliano, G., & Lu, Y. (2021). Analyzing traffic impacts of planned major events. *Transportation Research Record*, 2675(8), 432–442.
- Tavassoli Hojati, A., Ferreira, L., Washington, S., Charles, P., & Shobeirinejad, A. (2016). Reprint of: Modelling the impact of traffic incidents on travel time reliability. *Transportation Research Part C: Emerging Technologies*, 70, 86–97. <https://doi.org/10.1016/j.trc.2016.06.013>

Key Words: traffic simulation, traffic management, sustainable transportation

THE DIFFERENTIAL RESPONSES OF COMMUTES ACROSS INCOME GROUPS AND INDUSTRIES DURING COVID-19

Abstract ID: 1820

Individual Paper Submission

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The spread of COVID-19 to California in early 2020 led to a series of policies that curbed the spread of the disease but reduced economic activity and travel. The pandemic has exposed disparities built into commute patterns. While many people were able to switch to telecommuting, workers especially in the health and construction industries, continued to commute daily (Lou et al., 2020). Many of these workers are lower-income and lack reliable transportation options (Hu and Chen, 2021). There has been speculation that low-income and nonwhite workers have been less able to shift to remote work and are more often considered essential workers (Brough et al., 2020). At the same time, these same workers are more likely to be mobility disadvantaged.

This study examines how advantaged and disadvantaged populations in the large, atomized megaregion that spans the San Francisco Bay Area east to California's Central Valley and Sierra Nevada Foothills navigate their commute during the COVID-19 pandemic using StreetLight and ACS data. This study answers the following questions: 1) How does traffic volume change before, during, and after COVID-19? 2) Which type of worker is more likely to commute during COVID-19? Who takes the risk of being exposed and bears the burden of commuting during the pandemic? 3) How have different types of workers adapted their commute through different stages of the pandemic? Does it vary by industry and income level? This research fills the gap in measuring the change in commute patterns during the pandemic, which is highly relevant to research and policymaking.

We run a ZCTA-level regression analysis across the Central Valley and the Bay Area using the StreetLight data that includes up-to-date traffic volume, travel distance, and travel duration, complementing with pre-COVID demographic characteristics from the 2015-2019 ACS data. The empirical results show that, during the pre-COVID period, ZCTAs with higher median household income produce a higher number of commute trips. During COVID, commute trips in ZCTAs with the highest median income decreased the most, while commute trips in ZCTAs with the lowest income decreased the least. In the post-COVID period, commute trips in lower-income ZCTAs recovered more than in higher-income ZCTAs. When looking at the difference between industries, we found that primary and secondary industries generate the least commutes in the pre-COVID period, but most of them remain during the COVID period. The commute volume of service occupation dropped the most during the COVID period and bounced back the most during the post-COVID period. For commute distance, the overall distribution of the traffic remains parallel to the pre-COVID period. However, during the post-COVID period, commute trips with longer distances seem to recover the most, and commute trips with shorter distances recover the least.

Citations

- Lou, J., Shen, X., & Niemeier, D. (2020). Are stay-at-home orders more difficult to follow for low-income groups?. *Journal of Transport Geography*, 89, 102894.
- Brough, R., Freedman, M., & Phillips, D. (2020). Understanding socioeconomic disparities in travel behavior during the COVID-19 pandemic. University of California, Irvine Department of Economics Working Paper Series.
- Hu, S., & Chen, P. (2021). Who left riding transit? Examining socioeconomic disparities in the impact of COVID-19 on ridership. *Transportation Research Part D: Transport and Environment*, 90, 102654.
- De Vos, J. The Effect of COVID-19 and Subsequent Social Distancing on Travel Behavior. *Transportation Research Interdisciplinary Perspectives*, Vol. 5, 2020, p. 100121. <https://doi.org/10.1016/j.trip.2020.100121>.
- Anwari, N., Ahmed, M. T., Islam, M. R., Hadiuzzaman, M., & Amin, S. (2021). Exploring the travel behavior changes caused by the COVID-19 crisis: A case study for a developing country. *Transportation Research Interdisciplinary Perspectives*, 9, 100334.

BEYOND CONGESTION: USING SYSTEMS ARCHETYPES TO EXPLORE SAFETY IMPLICATIONS OF CONVENTIONAL TRAFFIC IMPACT ANALYSES

Abstract ID: 1821

Individual Paper Submission

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Traffic impact analysis (TIA) is an important piece of how our transportation system is planned, designed, and built. Cities and states use TIAs to assess how road users use the transportation system and then predict how the system will operate if transportation patterns change through the addition of new buildings within an area or new capacity added to the roadway. Many local and state governments view the TIA process as a critical means of generating needed infrastructure improvements, and its use has become ubiquitous among Departments of Transportation across the US. Thus, TIA often exerts a powerful influence on urban land use and transportation systems.

However, reliance on the conventional approach to TIA, particularly in urban contexts, has been criticized for over-predicting automobile traffic and prioritizing congestion relief at the expense of other travel modes. Furthermore, little attention has been paid in research or in current practice to TIA's direct impacts on road user safety or its potential role in shaping safe transportation and land use systems. This lack of attention is surprising, given research into the relationships between increased traffic volumes and speeds—outcomes directly related to congestion mitigation practices—and declining safety for road users.

This research interrogates this paradox through analysis of interviews and focus groups with planners, engineers, and developers involved with local TIA practices in 4 states in the US southeast. Based on prior research that suggests concerns over road user safety are superseded and/or subsumed by concerns over congestion mitigation in contemporary TIA practice, we focus on two research questions: how is road user safety accounted for in contemporary TIA practices, and what are the barriers to elevating road user safety as a central outcome of the development review process?

Approach and methods

The research team conducted structured interviews and focus groups with 54 transportation professionals (municipal planning staff, consultants, and developers) in Maryland, North Carolina, Virginia, and Florida. Data collection focused on eliciting perspectives on the role and limitations of TIA practices in influencing roadway safety. We used grounded theory analysis of interview and focus group data to explore transportation professionals' responses to questions on road safety. Following methods advanced by Yearworth and White (2013), we used our findings from the grounded theory analysis to construct a causal loop diagram that allowed us to visualize interactions between components of the TIA/traffic safety system.

Findings

Our analyses suggest that contemporary TIA procedures often seek the goal of mitigating traffic congestion, yet end up creating conditions under which congestion resumes and road user safety deteriorates over time. Based on the evident structure of the TIA/traffic safety system, we identified that transportation professionals were leaning into two system archetypes: "Seeking the Wrong Goal" and the "Fixes that Fail."

Relevance and implications

This research shows a clear gap in the guidance on relationships between land development and road safety, and identifies feedback loops within contemporary TIA practice that can undermine road user safety. By interrogating these feedbacks, practitioners and researchers can uncover and dismantle barriers to safer land development patterns. Given the complexities, ubiquity, and 'messiness' of contemporary TIA practices, there are no elegant solutions to centering safety yet. Increasing awareness among practitioners of the traps of "seeking the wrong goal" or "fixes that fail" would represent a substantial step toward development review practices with outcomes that balance safety, congestion, and development.

Future research should build upon these findings through development of impact assessment procedures that center road user safety and conducting longitudinal studies of safety implication of development patterns shaped by contemporary vs. safety-oriented TIA procedures.

Citations

- Schneider, R. J., K. Shafizadeh, and S. L. Handy. Method to Adjust Institute of Transportation Engineers Vehicle Trip-Generation Estimates in Smart-Growth Areas. *Journal of Transport and Land Use*, Vol. 8, No. 1, 2015, pp. 69–83.
- Millard-Ball, A. Phantom Trips: Overestimating the Traffic Impacts of New Development. *Journal of Transport and Land Use*, Vol. 8, No. 1, 2015, pp. 31–49.
- DeRobertis, M., J. Eells, J. Kott, and R. W. Lee. Changing the Paradigm of Traffic Impact Studies: How Typical Traffic Studies Inhibit Sustainable Transportation. *Institute of Transportation Engineers. ITE Journal*; Washington, Vol. 84, No. 5, 2014, pp. 30–35.
- Combs, T. S., N. C. McDonald, and W. Leimenstoll. Evolution in Local Traffic Impact Assessment Practices: *Journal of Planning Education and Research*, 2020. <https://doi.org/10.1177/0739456X20908928>.
- Yearworth, M., & White, L. (2013). The uses of qualitative data in multimethodology: Developing causal loop diagrams during the coding process. *European Journal of Operational Research*, 231(1), 151-161. <https://doi.org/10.1016/j.ejor.2013.05.002>

Key Words: traffic impact analysis, road safety, systems archetypes

AN ETHNOGRAPHY OF TRANSIT THROUGH THE LENS OF PUBLIC SPACE THEORY IN LOS ANGELES

Abstract ID: 1832

Individual Paper Submission

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Public transit is meant to provide basic mobility for the transportation of the disadvantaged and to serve broader social and environmental goals in the metropolitan areas of the United States. It is thus a means to achieve the objectives of the community and urban planners, alike. Public transit is also often considered to have external or hard to quantify benefits that add value beyond the service provided and the passengers attracted—for example, functioning in a way that is like public space.

William H. Whyte presented us with details of the way public space in New York City functioned daily, as he described the social interactions (both said and unsaid) that occurred between people in space. He witnessed that individuals' behavior will often follow the form of peers around them (Whyte, 1980). Further, the concepts of 'copresence' and 'unfocused interactions' describe the types of social interactions in public space outside of those one would expect such as physical touch and conversation (Goffman, 2008). It is argued that public space should be designed around the everyday activities that include working, commuting, walking, shopping, eating food; that the concept of "everyday space" can function as a connective tissue that binds the daily lives of people together by fostering new forms of social interaction and potentially taking society closer to physical and social equality (Bravo & Crawford, 2014). Few examples, however, have attempted to theorize that public transit acts as another form of public space.

The purpose of our research was to show how the functions of and interactions within public space may also occur on public transit, and thus, that public transit functions like a public space. Further, we examine how the interactions happening within transit vehicles in Los Angeles may provide a social value that is not yet being considered. The nature of the way public transit operates, "with people from diverse backgrounds constantly entering and exiting, sitting and standing, facing one another, and shifting and bracing their bodies," riders are "bound to come into visual or physical contact with others... The transit vehicle, then, presents people with a unique space for practicing being a stranger in the city (Ocejo & Tonnelat, 2014)." With this research, we seek to understand the value of social interactions for users of public transit within a transit vehicle and answer the research question—does public transit act as a mechanism or tool for social mixing?

We used a mixed methods approach that included participant observation (ethnography), demographic and socioeconomic analysis for key transit routes, and collection of field data related to interactions and typologies of riders. Building from previous examples of ethnographic work that looked for a greater understanding of the interactions within public space, we considered the unobtrusive moments and social interactions that occur while riding transit along corridors that extend through and across the geographic boundaries of diverse populations.

This research is part of a dissertation with the working title, "Brushing Shoulders: In-Transit Social Interactions and Intersecting Identities in Los Angeles, Chicago, and Detroit." The findings to date include preliminary observations of key interactions along LA Metro's Route 16, the Purple/Expo Lines, and a major regional bus route in Metro Detroit. There are common 'typologies' of the interactions that happen along a particular route between riders and between the riders and the participant observer, themselves.

A discussion of the relationship between public space and public transit (as well as the social interactions within them), preliminary results from the first two sets of route observations, and key reflections and conclusions of these observations will be included in the final paper.

Citations

- Whyte, W. H. (1980). The social life of small urban spaces.
- Goffman, E. (2008). Behavior in public places. Simon and Schuster.
- Bravo, L., & Crawford, M. (2014). Publics and their spaces: renewing urbanity in city and suburb. In *New urban configurations* (pp. 784-789). IOS Press.
- Ocejo, R. E., & Tonnelat, S. (2014). Subway diaries: How people experience and practice riding the train. *Ethnography*, 15(4), 493-515.

Key Words: Public Transit, Public Space, Social Interactions, Ethnography

ADDRESSING DELAYS AT AT-GRADE RAIL CROSSINGS IN DISADVANTAGED COMMUNITIES

Abstract ID: 1837

Individual Paper Submission

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The objectives of this study are to analyze the extent of network-wide delays caused by at-grade highway-rail crossings that affect disadvantaged communities disproportionately in industrial cities such as Chicago, and examine the effectiveness of mitigation measures that do not involve grade-separation, which is both expensive and undesirable from the community's perspective due to the massive structure that can form a physical barrier.

Recent studies that examined the spatial distribution of the impacts of freight transportation in urban areas (Yuan & Wang, 2021, Yang et al, 2021) have found that disadvantaged communities tend to experience disproportional burden. However, these and also similar studies mostly focus on environmental impacts and also accidents associated with truck traffic. In some urban areas that have substantial freight rail infrastructure, at-grade road-rail crossings are major source of congestion. For example, there are nearly 2,000 at-grade rail crossings in the Chicago urban area. Gates at rail crossings can close for an extended period of time, often lasting 20 minutes or more depending on the length and the speed of the freight train, causing network-wide extreme congestion. Residents and businesses near the rail crossings experience recurring yet unpredictable congestion that can disrupt their daily activities. An analysis by the CMAP shows that rail crossings with highest delays are concentrated in communities with low income (CMAP, Accessed Jan 12, 2022).

The focus of this study were two communities in the south suburbs of Chicago, Dolton and Riverdale. These two communities with rich industrial heritage are also some of the poorest. Median incomes in Dolton and Riverdale are \$50,237 and \$38,355, respectively (median income for the Chicago MSA is \$74,621). Approximately 24% of the residents in those communities live in poverty. There are a total of 11 at-grade rail crossings in the two communities that see a total of over 400 freight trains per day. There is a part of Dolton, called "the triangle" that is surrounded by multiple train tracks. For the residents of the triangle it is nearly impossible to plan their day due to the unpredictable nature of rail-crossings. Stakeholders in the study area attest that rail-crossings make it difficult to report to schools and jobs on time.

Using the trip table provided by CMAP and also traffic volumes and gate-down event frequencies and durations at the 11 rail-crossings, obtained from the recordings, we constructed a model that estimates travel route choices that are made during a trip. This type of model is called dynamic traffic assignment (Rakha, 2014).

Our simulation revealed that travelers in Dolton and Riverdale experience far greater delay than average commuters. On a per trip basis, the rail crossings multiplied the average delay by anywhere between two to twelvefold. It should be noted that the traditional method to estimate delays at rail-crossing would severely underestimate the impacts since only the delays at the rail-crossings are analyzed and the spatial and temporal "spill-over" effects are mostly ignored.

The analysis of mitigation measures showed that providing up-to-date traffic information to the travelers, especially using mobile devices, to disseminate near real-time information frequently, can reduce the delay associated with rail crossings considerably as long as information is updated every 20 minutes or less.

There are many communities like the ones studied here that have suffered extreme levels of congestion due to rail crossings for many decades. While typical solution to address rail crossing delay is grade separation, this study shows

real-time dissemination of information about gate-down events has a potential to be an effective non-physical solution.

Citations

- Yuan, Q., & Wang, J. (2021). Goods movement, road safety, and spatial inequity: Evaluating freight-related crashes in low-income or minority neighborhoods. *Journal of Transport Geography*, 96, 103186.
- Yang, C., Chen, M., & Yuan, Q. (2021). The geography of freight-related accidents in the era of E-commerce: evidence from the Los Angeles metropolitan area. *Journal of transport geography*, 92, 102989.
- Rakha, H. (2014), INTEGRATION Rel. 2.40 for Windows - User's Guide, Volume I: Fundamental Model Features, M. Aerde and Associates, Ltd., Blacksburg, Virginia
- Chicago Metropolitan Agency for Planning. Crossing Delay (Accessed January 12, 2022) <https://www.cmap.illinois.gov/mobility/explore#/topic/freight/crossing-delay>

Key Words: rail crossings, congestion delay, real time travel information system

PLANNING FOR SHARED AUTONOMOUS VEHICLE OPERATIONS: AN INTEGRATED TRAFFIC MICROSIMULATION MODELLING APPROACH

Abstract ID: 1843

Individual Paper Submission

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Technological advancement in the transport industry shows tremendous promise for shared autonomous vehicles that will yield a paradigm shift in mobility planning. It is anticipated that AVs will take a form of shared mobility and will be bundled into a form of 'mobility-as-a-service (MaaS)'. Several research explored the potential of AVs within the MaaS framework and highlighted the needs of related regulatory and operational schemes (1). Existing research in autonomous vehicles predominantly focuses on technologies. Some studies examined the potential impacts and benefits of shared mobility services, including private vehicle ownership reduction (2), improved fuel efficiency, and increased social and environmental sustainability (3). However, operation planning is necessary to benefit from door-to-door AV services and reduce detrimental effects such as congestion on the urban network (4,5). This study presents a comprehensive framework of operational planning for shared autonomous vehicle (SAV) in Halifax, Canada. The objectives of this study include: (a) to predict market infiltration of AVs following a Bass Diffusion modeling approach, (b) to develop an advanced SAV operation model to allocate SAVs to commute trips using the rate of adoption informed by the Bass Diffusion model, and (c) to develop a traffic microsimulation model to assign mixed HV and SAV trips in the network for the evaluation of impacts. In this study, the adoption of SAVs is explored using two market concepts including a conservative market with a smaller fleet of SAVs (Market Type-1) and an aggressive market with a larger fleet of SAVs (Market Type-2) for the Halifax region. A rule-based algorithm is coded within a MATLAB platform for AV allocations for morning trips. A traffic microsimulation model that follows a dynamic traffic assignment process is utilized to test shared AV operations in the network. Based on the results obtained from the adoption model, the study yields a fleet of 900 SAVs in relation to the consumer's interest to adopt (Market Type-1). The study also assumes a second scenario of 1800 SAVs based on a Market Type-2 that considers private companies to adopt AVs in Halifax. The SAVs assignment reveals that a fleet based on a conservative market penetration can only serve 82% of travel demand. While the second fleet, based on an aggressive market infiltration, serves 100% of the demand. The results from simulation suggest that SAV operation is likely to increase the traveled distance by 1% and 4% for both fleet sizes, respectively. The number of unoccupied trips also increases by 2% and 8% in case of both fleets, respectively. The results of this study provide critical insights for developing policies to accommodate AV adoptions and handle AV operation challenges within the transportation system.

Citations

- Bahamonde-Birke, F. J., Goletz, M., & Ettema, D. (2021). The provision of mobility as a service with autonomous vehicles. The necessity of regulatory schemes for a natural monopoly. *Research in Transportation Economics*, 90, 100993
- Martin, E., and Shaheen, S. A. (2011). The Impact of Carsharing on Household Vehicle Ownership, *Access Magazine*, 1(38), 22-27
- Ryden, C., and Morin, E. (2005). *Mobility Services for Urban Sustainability: Environmental Assessment*. Stockholm, Sweden.
- Milakis, D., Thomopoulos, N., and Wee, B. V. (2020). Policy Implication of Autonomous Vehicle. *Advance in Transport Policy and Planning*, 5 (1).

- Chen, T. D., Kockelman, K. M. and Hanna, J. P. (2016). Operations of a Shared, Autonomous, Electric Vehicle Fleet: Implications of Vehicle & Charging Infrastructure Decisions. *Transportation Research Part A: Policy and Practice*, 94, 243–254. <https://doi.org/10.1016/j.tra.2016.08.020>.

Key Words: Shared autonomous vehicle, Operational planning, Bass Diffusion model, Traffic Microsimulation, Vehicle kilometer travelled

WHAT HAPPENS AFTER THE CRASH? EQUITY IN PLANNERS' RESPONSE TO PEDESTRIAN AND BICYCLE CRASHES THROUGH INFRASTRUCTURE INTERVENTIONS

Abstract ID: 1851

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Central Planning Issue

Marginalized groups in the U.S. face disproportionately high rates of pedestrian and bicycle crashes (Governors Highway Safety Association, 2021) and disproportionately low access to safe pedestrian and bicycle infrastructure (Rigolon et al., 2018). Recognizing these patterns, the American Association of State Highway Officials recently included racial and socioeconomic disparities in safety as one of the six highest-priority research needs pertaining to active transportation in the U.S. Past research has considered how inequitable infrastructure access is associated with crash disparities (Barajas, 2018), but limited work has examined equity in what happens after a crash occurs—that is, in how planners respond to crashes through interventions such as crosswalk improvements and bike lane investments (Rebentisch et al., 2019). Do the nature and timing of these responses vary in privileged vs. marginalized neighborhoods? Given that planning for active transportation safety in the U.S. remains largely reactive to documented crashes (Ferenchak & Marshall, 2019), this is a critical consideration for social equity.

Research Questions

In this analysis, we examine longitudinal data on pedestrian and bicycle crashes and infrastructure investments to address the following research questions (RQs):

- RQ1: Are there disparities in pedestrian and bicycle crash rates across sociodemographic groups?

- RQ2: Are there disparities in whether (and when) infrastructure interventions are made following pedestrian or bicycle crashes in neighborhoods of varying sociodemographic composition?

Methods

We address these questions using data from Los Angeles, CA. For crashes, we use the Berkeley SafeTREC Transportation Injury Mapping System to record the location of pedestrian and bicycle crashes (fatal and injury-only) between 2010 and 2019. For infrastructure, we use spatial data on crosswalk and bicycle infrastructure installations, by year, from the City of Los Angeles GeoHub data platform. For sociodemographic characteristics, we measure various indicators of race and socioeconomic status at the block group level using data from the American Community Survey.

We first use descriptive and regression analyses to estimate associations between pedestrian and bicycle crash rates and area-level sociodemographic characteristics (RQ1). We then use a combination of logistic, count, and hurdle models to examine how area-level sociodemographic characteristics are associated with (a) crash incidence and (b) the likelihood of an infrastructure change (e.g., new or improved crosswalk, new or improved bike lane) taking place after a crash occurs (RQ2). Work currently in progress is refining the unit of analysis, translating this aggregate research to the intersection level.

Findings

From the above sources, our 10-year data set includes 27,726 pedestrian crashes, 20,915 bicycle crashes, 21,475 crosswalk legs, and 1,252 miles of bicycle infrastructure across approximately 2,800 block groups in Los Angeles. Although the analysis is in progress, preliminary findings suggest that pedestrian and bicycle crash rates are disproportionately high in block groups with higher proportions of people of color and lower median incomes. Interestingly, preliminary results also suggest that crosswalk improvements are more likely to be made after crashes that occur in marginalized block groups; this finding will be further explored in the disaggregate, intersection-level analysis, as will the distribution of bicycle infrastructure interventions following bicycle crashes. Overall, we expect to find that post-crash infrastructure interventions are more likely to be made (and made more quickly) in areas

characterized by greater sociodemographic privilege.

Planning Implications

This analysis examines social equity in pedestrian and bicycle safety and in how planners respond to crashes in different types of neighborhoods. The results will contribute to a research need of critical national significance, revealing ways in which planners' responses to pedestrian and bicycle crashes can advance equity in safety outcomes for marginalized groups.

Citations

- Barajas, J. M. (2018). Not all crashes are created equal: Associations between the built environment and disparities in bicycle collisions. *Journal of Transport and Land Use*, 11(1).
- Ferencak, N. N., & Marshall, W. E. (2019). Equity Analysis of Proactively- vs. Reactively-Identified Traffic Safety Issues. *Transportation Research Record*, 2673(7), 596–606.
- Governors Highway Safety Association. (2021). An Analysis of Traffic Fatalities by Race and Ethnicity.
- Rebentisch, H., Wasfi, R., Piatkowski, D. P., & Manaugh, K. (2019). Safe Streets for All? Analyzing Infrastructural Response to Pedestrian and Cyclist Crashes in New York City, 2009–2018. *Transportation Research Record: Journal of the Transportation Research Board*, 2673(2), 672–685.
- Rigolon, A., Toker, Z., & Gasparian, N. (2018). Who has more walkable routes to parks? An environmental justice study of Safe Routes to Parks in neighborhoods of Los Angeles. *Journal of Urban Affairs*, 40(4), 576–591.

Key Words: walking, bicycling, safety, crashes, equity

RENAMING AND REMOVAL OF HARMFUL NAMES AND MONUMENTS ON STATE TRANSPORTATION RIGHT OF WAY

Abstract ID: 1852

Individual Paper Submission

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This paper reports the results of a national survey of Departments of Transportation to identify the processes through which they name and rename facilities and monuments on land under their control. Examples also are drawn from other public agencies and the spaces they oversee, including parks and schools.

Many place names, facilities, and monuments in the US and other countries have slurs in their formal or informal titles. In addition, some place names and facilities celebrate people or organizations that have a racist or derogatory past. In some cases, the discriminatory views of these individuals or groups, or the harmful nature of the slurs, were either unknown at their inception or were seen as unimportant and overlooked. In other cases, the naming was intended to assert dominance over people of color, women, or particular ethnic or religious groups. Today, there is broad recognition that the individuals, groups, and notions that are celebrated in public space are not just incidental, but purposeful reflections of societal values.

The objectives of this study were (1) to identify policies and practices that can be used to identify place names that have a derogatory or racist linkages and (2) to make recommendations on a process for renaming or removal of such harmful names or monuments. To carry out the study, the authors conducted a literature review to identify published articles, news reports, investigatory reports, and databases on the issue, with a focus on how public agencies have been handling it. The authors further investigated practices in California, consulting with state agency officials and stakeholder groups to discuss the issues raised in naming and renaming facilities and monuments. A survey of state DOTs then was designed and implemented using a combination of online and telephone contacts to collect information on current practices, challenges, and accomplishments. Additional surveys were carried out with educational institutions and parks departments that had had recent experience with naming or renaming.

Key findings were that while names and monuments are receiving growing attention nationwide, a minority of state DOTs have had direct experience with the issue. Many state DOTs rely on legally established rules for the formal naming of facilities and do not get involved with informal names (for example, when a state highway has an official number but locally is called by another name.) Several survey respondents noted that even informal signs and tributes along state highways can become controversial, for example, when family or friends place memorials to crash victims along the highway. Nearly all state agencies depend on concerned residents to initiate a review of a name or monument, and none reported having an official state list of problem names, though several state DOTs were aware of lists created by the Department of Interior, the Southern Poverty Law Center, and other public and private

entities. Several states have established committees that are responsible for making determinations about names and monuments, while others defer to legislative committees or require legislative endorsement before action is taken. A key issue raised by survey respondents is what to do about names that are offensive to some groups but celebrated by others, or those that honor individuals whose lives were exemplary in some ways but highly problematic in others.

The paper concludes with recommendations on best practices including stakeholder engagement and proactive policies.

Citations

- Berg, L. D., & Kearns, R. A. (1996). Naming as norming: 'race', gender, and the identity politics of naming places in Aotearoa/New Zealand. *Environment and Planning D: Society and Space*, 14(1), 99-122. <https://journals.sagepub.com/doi/10.1068/d140099>
- United States Department of Interior. (2021). H.R. 4454 Reconciliation in Place Names Act Statement for the Record.
- Graham, David. (2022). The Little-Known Federal Body That Renames Racist Places. *The Atlantic*. The Little-Known Federal Body That Renames Racist Places -The Atlantic
- Anguiano, Dani. (2021). Indigenous activists want to change a California town's racist name. Officials are pushing back. *The Guardian*.
- Southern Poverty Law Center. Whose Heritage? <https://www.splcenter.org/whose-heritage-map>

Key Words: Equity, Harmful names, Monument removal, Use of public property

PRICED OUT OF SAFETY: WHEN ADVANCED DRIVER ASSISTANCE SYSTEMS ARE A LUXURY INSTEAD OF THE STANDARD

Abstract ID: 1855

Individual Paper Submission

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Automated vehicle technologies vary from simple alerts to partially automated driving tasks that are increasingly available in today's vehicles. Advanced driver assistance systems (ADAS) seek to alert a driver to critical events (e.g., forward collision warning) or even intervene (e.g., emergency braking, lane-keeping steering) to prevent crashes. These technologies, however, are not available equally across the passenger vehicle fleet (Voelk, 2020). Despite evidence for safety, only automatic emergency braking has recently received regulatory attention as a mandated technology. Instead, ADAS is named, packaged, and offered differently by each manufacturer, often billed as a driver convenience or luxury item rather than a potentially lifesaving one.

Safety-related technologies like forward collision warning systems and blind spot detection are highly effective when used properly (Cicchino, 2017) and are important for safety for both occupants and non-occupants like pedestrians and bicyclists (Combs et al., 2019). Considering the relative newness of these technologies, many used vehicles do not have ADAS. People with lower incomes, needing the car for access to services and upward economic mobility, are more likely to buy these used, "risky" older vehicles (Klein, 2020). Even in used cars equipped with one or more of these systems, information about and trust in ADAS is lower in used car buyers (Reagan et al., 2022). Combined with ADAS only being available on more expensive trim packages of new cars, lower income consumers are literally priced out of safety technologies sold as luxury items. Even consumers who might be able to afford the additional expense to opt into these technologies may choose not to, if those technologies are seen as a luxury rather than a necessity or are packaged with unwanted upgrades, thus limiting their widespread consumer use.

In this research, we conducted an inventory of the top selling models of the ten largest automakers in the US, Japan, and Europe to determine the availability of ADAS by vehicle type, model, and trim package. Our findings about the complex, varying, and often confusing ways that manufacturers package and price these safety technologies provides insight into what role disparities in the availability of ADAS across the vehicle fleet may play in safety. For example, we found that safety technologies are less likely to be available on the lower-cost trim packages of larger vehicles in particular, despite the greater danger these vehicles represent to pedestrians and bicyclists. We also examined how manufacturers market these technologies to consumers. Thematic analysis and visual discourse analysis revealed explicit and implicit themes around luxury, power, family, convenience, techno-optimism, and status as often (or more) as safety.

There are multiple implications for these findings relevant to planning. As cities and towns consider "smart and connected" infrastructure, it is important to understand just who is able or incentivized to opt into the smart and

connectable technologies that can help realize goals around safety and mobility. Addressing the alarming increase in traffic deaths, particularly of pedestrians, requires understanding how potentially life-saving technologies are marketed and sold. In the currently unregulated, unstandardized world of advanced driver assistance systems, access to safety is currently unequal and inequitable.

Citations

- Boelhouwer, A., van den Beukel, A. P., van der Voort, M. C., Hottentot, C., de Wit, R. Q., & Martens, M. H. (2020). How are car buyers and car sellers currently informed about ADAS? An investigation among drivers and car sellers in the Netherlands. *Transportation Research Interdisciplinary Perspectives*, 4, 100103. <https://doi.org/10.1016/j.trip.2020.100103>
- Cicchino, J. B. (2017). Effectiveness of forward collision warning and autonomous emergency braking systems in reducing front-to-rear crash rates. *Accident Analysis & Prevention*, 99, 142–152. <https://doi.org/10.1016/j.aap.2016.11.009>
- Combs, T. S., Sandt, L. S., Clamann, M. P., & McDonald, N. C. (2019). Automated Vehicles and Pedestrian Safety: Exploring the Promise and Limits of Pedestrian Detection. *American Journal of Preventive Medicine*, 56(1), 1–7. <https://doi.org/10.1016/j.amepre.2018.06.024>
- Klein, N. J. (2020). Subsidizing Car Ownership for Low-Income Individuals and Households. *Journal of Planning Education and Research*, 0739456X20950428. <https://doi.org/10.1177/0739456X20950428>
- Reagan, I. J., Cicchino, J. B., Teoh, E. R., & Cox, A. E. (2022). New and used vehicle buyers' awareness, understanding, and trust in advanced driver assistance systems. *IIHS-HLDI Crash Testing and Highway Safety*. <https://www.iihs.org/topics/bibliography/ref/2246>

Key Words: safety, automation, transportation, equity

PEDESTRIAN OBSTACLES AND STATION AREA CONNECTEDNESS: AN OPEN DATA APPROACH

Abstract ID: 1859

Individual Paper Submission

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New public transit lines will attract riders when the net costs of riding the rail are lower than the net costs of using alternate modes. Station area characteristics can increase or decrease the costs of riding rail, relative to driving or taking other modes. Existing literature finds that land uses surrounding stations affect ridership, however, these studies may gloss over the fact that that specific obstacles may have more powerful effects than station area averages. A busy right-of-way or the presence of railroad tracks or industrial areas close to a station may deter ridership to a greater degree, for example, than an overall lack of land use diversity. Similarly, systematic measures of pedestrian quality are often focused on availability of retail destinations (as is the case with WalkScore and similar indices), or involve large amounts of data collection (as is the case with the Irvine-Minnesota Inventory / "IMI") (Day et al., 2006; WalkScore.com, 2020).

This paper focuses on those characteristics that create obstacles to riders who are traversing areas between stations and other destinations, with the aim of providing researchers and planners with a tool that can be used to generate an obstacle score for any existing or potential station area. We propose and demonstrate a novel method of measuring pedestrian quality for trips to a specific destination - as is the case in the last-mile problem - that relies solely on input datasets readily available for any location in the United States (and with close substitutes available elsewhere). Specifically, we rely on General Land Use Survey data as well as on street network information from OpenStreetMap (Boeing, 2017). In our method, we generate walking routes from stations to nearby destinations based on network distance using OpenStreetMap, and calculate the distribution of land uses inside the areas immediately surrounding those walks. We measure obstacles by their numerical counts, their intensity and extent, and by their spatial concentration close to both immediate station areas and destinations within one mile street-grid and pathway distance from stations. In particular, we focus on the presence of land uses for which we posit that they pose a disutility to pedestrians, such as major highways or industrial tracts, and suggest that a greater share of such land uses in a station approach's viewshed may reduce attractiveness of walking to that station, holding equal actual distance to the station. Lastly, we demonstrate that this method can capture cross-sectional differences in pedestrian quality between station areas in Minneapolis, Minnesota, that line up with our own subjective understanding of the area.

Citations

- Boeing, G. (2017). OSMnx: New methods for acquiring, constructing, analyzing, and visualizing complex street networks. *Computers, Environment and Urban Systems*, 65, 126–139. <https://doi.org/10.1016/j.compenvurbsys.2017.05.004>
- Day, K., Boarnet, M., Alfonzo, M., & Forsyth, A. (2006). The Irvine–Minnesota Inventory to Measure Built Environments: Development. *American Journal of Preventive Medicine*, 30(2), 144–152. <https://doi.org/10.1016/j.amepre.2005.09.017>
- WalkScore.com. (2020). Walk Score Methodology. Walk Score. <https://www.walkscore.com/methodology.shtml>

Key Words: Walkability, Last-Mile Problem, Land Use, OpenStreetMap

FUTURE EQUITY IMPACT OF THE SEPULVEDA TRANSIT CORRIDOR PROJECT IN LOS ANGELES

Abstract ID: 1876

Individual Paper Submission

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Los Angeles has been committed to improving its public transportation network, including an aggressive expansion of light rail, subways, and buses. The Sepulveda Corridor project along the Santa Monica Mountains is a new transit service designed to link the San Fernando Valley and the city's Westside, following along the path of one of the most heavily traveled highways in the nation. The two regions along the planned transit corridor differ significantly in terms of employment density and vehicle ownership. The Valley has lower job densities and fewer households with vehicles than the Westside (Metro, 2019). This indicates that the new transit line could increase job accessibility for Valley residents who are more likely to use public transit to commute to other areas. Employers on the Westside would have a larger employee pool.

This paper evaluates the equity impact of the new transit line focusing on job access by identifying the changes in job accessibility for different socio-demographic and economic groups in terms of age, income, and race. We answer the following questions: (1) how the Sepulveda transit line would change the spatial pattern of accessibility to jobs, (2) how the changes in accessibility to employment opportunities differ between socioeconomic groups, and (3) whether the new transit line project can contribute to enhancing transit equity in the Valley and the Westside of the Los Angeles County. This study conducted an isochrone analysis by creating a General Transit Feed Specification (GTFS) for the Sepulveda transit corridor project based on its planned station, route, and speed. With GTFS data for the current transit networks and road networks, we constructed two network datasets for before and after building the new transit line to compare the impact of the new line. Next, we measured changes in accessibility by using the Longitudinal Employer-Household Dynamics (LEHD) data to identify the sociodemographic attributes of residents as well as jobs. Our accessibility measure is the number of employment opportunities (i.e. all jobs, low-income jobs, and high-income jobs) that are reachable within 60 minutes. We examined the changes in accessibility for different population groups (i.e. age, income, and race) in census tracts located within 1km of the new transit stations.

We find that the number of jobs reachable within 60 minutes would increase by up to 70 percent in the Valley regions, while it would increase by only 15 percent in the Westside. This result implies that the new transit project will enhance job accessibility throughout the region, especially in the Valley area with low job densities. However, the results show that the impact of the new transit network is the largest for high-income workers and the White population in the Valley area. L.A. Metro is studying several alternatives, and we suggest that this accessibility analysis can inform the equity aspects of the Sepulveda corridor project.

Citations

- Boarnet, M. G., Giuliano, G., Hou, Y., & Shin, E. J. (2017). First/last mile transit access as an equity planning issue. *Transportation Research Part A: Policy and Practice*, 103, 296–310.
- Los Angeles County Metropolitan Transportation Authority (Metro). (2019). Sepulveda Transit Corridor Final Feasibility Report. November.
- Levinson, D., & Wu, H. (2020). Towards a general theory of access. *Journal of Transport and Land Use*, 13(1), 129–158.
- Wu, H., Levinson, D., & Owen, A. (2021). Commute mode share and access to jobs across us metropolitan areas. *Environment and Planning B: Urban Analytics and City Science*, 48(4), 671–684.
- Xi, Y., Miller, E. J., & Saxe, S. (2018). Exploring the impact of different cut-off times on isochrone measurements of accessibility. *Transportation Research Record*, 2672(49), 113–124.

Key Words: equity, accessibility, transit corridor project, isochrone analysis, Los Angeles

CAPTURING THE SOCIAL IMPACT OF DEMOLISHING A HISTORIC STREET FOR A NEW SUBWAY STATION: EVIDENCE FROM A PARTICIPATORY GIS SURVEY IN GUANGZHOU, CHINA

Abstract ID: 1889

Individual Paper Submission

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Metro (subway) systems are crucial for supporting human movement in cities. Yet, their construction can be contentious because, like other development, the process may entail demolition of historic buildings, displacement of people, and competition with local interests. These social costs of constructing transportation infrastructure, especially when they pertain to hard-to-quantify lived experience, memories, and social networks, are often overlooked in transportation planning (Gans, 1982; Choi, 2016; Rayle, 2015).

In this paper, we aim to examine the social impact of demolishing a historic street for a new metro station in Guangzhou, China (pop. 15 million). The demolition plan would remove a block of dense, historic infrastructures, three residential buildings, and fifty-eight businesses. We frame the conflict between constructing the metro station and preserving the streetscape as competing interests between local government's priority to facilitate spatial connectivity and locals' priority to maintain a place for social interaction and memories. The two research questions at heart are 1) how might demolition impact locals' and frequent visitors' place attachments and social ties to the street, and 2) whether the locals perceive the issues differently than the metro company with a competing narrative of connectivity. The goal is to articulate the perspectives of those who may be opposed to the development.

For the first question, we collected daily life activities and memories of visitors and those who live in the area. We designed a spatially embedded GIS survey through the Maptionnaire platform, and asked respondents to mark places that they visit, and to comment on the trip purpose, trip companions. Survey respondents shared concrete memories, how the demolition would impact their personal lives, and suggestions of alternative places to visit if the street is demolished.

For the second question, we asked survey respondents which metro stations they frequent and analyzed whether the newly planned metro line would shorten their travel route and/or provide new access points. We also interviewed seven stakeholders including a department head at Guangzhou Metro, property owners, business owners, a staff worker, and a local tour guide, on their perceptions of the issues.

Our survey results (with 221 respondents) show that while some disagreed, many provided evidence that they have come to these businesses with friends, families, and romantic partners. These businesses create and maintain memories and local experience, and if displaced, are difficult to find alternatives. Our analyses also reveal a discrepancy between the metro company's justification of the metro station from a system perspective and individuals' perception based on their lived experience.

Our findings elevate the voices of the locals through data collection and visualizations and provide a case to critically examine spatial vs. social connectivity tradeoffs. Our mixed methods approach can be a tool for planners and citizens who are looking to capture the positive and negative impacts of constructing transit infrastructure. Furthermore, our work has inspired a local activist group to form around this issue. Future collaboration between the researchers and local activists may involve documenting oral histories, sharing our work to the public, and submitting reports to the local planning authority.

Citations

- Gans, H. J. (1982). *Urban Villagers*. New York: Simon and Schuster.
- Choi, N. (2016). Metro Manila through the gentrification lens: Disparities in urban planning and displacement risks. *Urban Studies*, 53(3), 577-592.
- Rayle, L. (2015). Investigating the connection between transit-oriented development and displacement: Four hypotheses. *Housing Policy Debate*, 25(3), 531-548.

Key Words: metro (subway), transportation development, place attachment, community development, connectivity

EVERYDAY TRAVEL EXPERIENCES OF PEOPLE WITH DISABILITY: HOW TRANSPORTATION INFRASTRUCTURE FAILS THE DISABLED

Abstract ID: 1890

Individual Paper Submission

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Some stakeholders would argue that things have improved in over three decades since the creation of the Americans with Disabilities Act (ADA). Within the transportation sector, various actors such as transit agencies and planning organizations have tried to support the travel needs of people with disabilities (PWDs). Though progress has been made, many aspects of the current system limit PWDs from traveling safely and efficiently. Though a literature is emerging in planning which focuses on PWDs (Biglieri 2021; Cochran 2020; Kwon and Akar 2022; Mogaji and Nguyen 2021; Ravensbergen et al. 2021), exploration of how infrastructure fails individuals with different disabilities is limited. We ask: how are the daily travel experiences of people with different disabilities impacted by incomplete infrastructures?

We conducted semi-structured 60-minute online interviews during 2021-22 with 28 people who self-identified as having a disability to understand what infrastructure limits mobility, when, and how. The interviewee group was relatively diverse based on disability status, use of mobility device/s, and gender. To understand the challenges that public sector organizations face with providing for the needs of PWDs, we also conducted interviews with professionals who supply and maintain transportation facilities and services.

Thematic and content analysis revealed how multiple factors, including design features, changes in uses, and public sector communications act together to diminish the quality of mobility options for PWDs. Notably, the impact of these variables varied across different types of disabilities. When working to create a transportation network that is universally accessible, it is critical for transportation professionals to consider the unique design needs of individuals with different types of disabilities.

Interviews with participants revealed multiple intersecting themes about infrastructure features and conditions that impact everyday travel.

- Sidewalk condition: Sidewalk gaps, uneven sidewalks, and inconsistent curb cuts created physical and safety barriers to travel.
- Paratransit: Frustration with paratransit logistics and scheduling, including needing to book rides 24-hours in advance. 20-minute trips often turned into multiple-hour events. Paratransit remained a last-ditch effort providing for no spontaneity. The approval process for paratransit use remains humiliating.
- Construction and temporary route closures: Difficult to navigate sidewalk closures. Not easy for blind individuals to simply cross a street and continue. Many needed to relearn whole routes because of construction projects.
- Public transit facility design: Need clearer and up-to-date audio announcements on board buses/trains and at transit stops. Deaf individuals had a hard time communicating with transit operators. Better design using ASL translation is recommended. Blind persons need a better system to identify bus stop locations, including consistent design and RFID technology at bus stops.
- Communications through transit agencies: Route change information was not easily accessible. Improving real-time data, engaging PWDs before changes are finalized, and improving audio/ASL communication at stations, stops, and on-board vehicles are needed. Lack of communication led to distrust in transit, especially after PWDs missed important appointments due to transit failure.
- Intersection design: Curb cuts and tactile paving along with a preference for perpendicular curb ramps aligned with crosswalks remain important. Consistent auditory signals and verbal announcements for the street having the pedestrian right-of-way preferred over a beep or no auditory cues. Roundabouts present significant challenges to navigate, particularly for blind persons.
- Street furniture and other barriers: Outdoor dining, especially during COVID-19, created barriers for movement. PWDs forced to alternate between sidewalks and streets. Suggested use of parking areas for outdoor public spaces over sidewalks. Micromobility devices create significant barriers on sidewalks and near bus stops.
- Parking: ADA parking limited and often far away from building entrances. Illegally parked vehicles or dumpsters parked on ADA parking spots limit supply.

Citations

- Biglieri, S., 2021. The Right to (Re)Shape the City - Examining the Accessibility of a Public Engagement Tool for People Living With Dementia. *Journal of the American Planning Association* 0, 1–15. <https://doi.org/10.1080/01944363.2020.1852100>
- Cochran, A.L., 2020. Understanding the role of transportation-related social interaction in travel behavior and health: A qualitative study of adults with disabilities. *Journal of Transport & Health* 19, 100948. <https://doi.org/10.1016/j.jth.2020.100948>
- Kwon, K., Akar, G., 2022. People with disabilities and use of public transit: The role of neighborhood walkability. *Journal of Transport Geography* 100, 103319. <https://doi.org/10.1016/j.jtrangeo.2022.103319>

- Mogaji, E., Nguyen, N.P., 2021. Transportation satisfaction of disabled passengers: Evidence from a developing country. *Transportation Research Part D: Transport and Environment* 98, 102982. <https://doi.org/10.1016/j.trd.2021.102982>
- Ravensbergen, L., Newbold, K.B., Ganann, R., Sinding, C., 2021. 'Mobility work': Older adults' experiences using public transportation. *Journal of Transport Geography* 97, 103221. <https://doi.org/10.1016/j.jtrangeo.2021.103221>

Key Words: ADA, Disability, Infrastructure, Mobility, Universal Design

TRANSPORT EQUITY: EVERYDAY TRAVEL EXPERIENCES IMMIGRANT COMMUNITIES IN AUCKLAND, NEW ZEALAND

Abstract ID: 1895

Individual Paper Submission

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There are emerging academic literature and policy papers engaging justice, equity and inclusiveness in transport planning. The inclusive transport system is achieved when all people can participate in society through access to social and economic opportunities. Making the transport system inclusive is a fundamental challenge in Auckland, where population and ethnic diversity is rapidly growing. Transport planning policies can benefit from Mobilities theories which focus on subjective factors (everyday experiences, cultural values, the structure of feelings, perceptions and biases) that are the basis for travel by the ethnic population in Auckland. This paper investigates immigrants' perceptions and the need for public transport in Auckland. The objectives of this research are twofold: (1) identify new factors that would increase public transport patronage in Auckland, and (2) examine the extent to which public transport usage is contingent upon socio-cultural values. This paper particularly explores and compares the everyday experiences of public transport in Auckland by immigrants originally from China, the Middle East and the Indian sub-continent. Adopting a qualitative approach, community groups from these ethnicities were approached for detailed interviews and focus group discussion. The perspective of Chinese communities was obtained through Chinese social media analysis. The key findings reveal that all three communities want better convenience and reliability of public transport on off-peak travel. However, they have differences in the status of people using public transport and the status of trains over buses. The findings highlight opportunities to incorporate immigrants' aspirations of affordable fares, greater time savings, improved convenience and a positive image of the public transport in Auckland. Research suggests that public transport infrastructure and service design must recognise a people-centred approach and cultural sensitivities relative to a particular community. Overall, this research comments on the need for public transport planning to recognise how different ethnic groups respond to specific modes of transportation in distinctive socially determined ways.

Citations

- Blumenberg, E. (2008). Immigrants and transport barriers to employment: The case of Southeast Asian welfare recipients in California. *Transport Policy*, 15(1), 33-42.
- Enright, T. (2019) Transit justice as spatial justice: learning from activists, *Mobilities*, 14:5, 665-680.
- Freudendal-Pedersen M. (2020). Sustainable urban futures from transportation and planning to networked urban mobilities, *Transportation Research Part D*, 82, 102310.
- Verlinghieri, E. and Schwanen, T. (2020). Transport and mobility justice: Evolving discussions, *Journal of Transport Geography*, 10.
- Sheller, M., 2018. Theorising mobility justice. *Tempo Soc.* 30 (2), 17-34.

Key Words: Transport equity, Public transport, Immigrants, Everyday experience, Auckland

THE INDEPENDENT AND COMBINED INFLUENCE OF LOCAL-ACCESSIBILITY, METROPOLITAN-ACCESSIBILITY, AND BUS-CONNECTIVITY ON STATION BOARDINGS: IMPLICATIONS FOR LOWER-INCOME AND IMMIGRANT PATRONS IN LOS ANGELES

Abstract ID: 1896

Individual Paper Submission

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Direct-demand models (DDMs) are increasingly used for a diversity of transit research and practice purposes. DDMs help in identifying key ridership determinants along a variety of explanatory vectors, predict boardings for sketch planning, and explore a variety of policy issues. Predictors typically include vectors of data such as: land-use and urban design attributes at various geographical scales; socio-economic characteristics of residents; transit service

quality; multimodal transit integration and network topology; among others. Yet only a few station-level DDM studies have explored the use of composite indicators of metropolitan accessibility as a key predictor of ridership. Furthermore, to this author's knowledge no study has explored potential interactions with local-level accessibility and other predictors typically included in rapid-transit DDM models. This study explores these possibilities and uses Los Angeles (LA) rapid-transit system as a representative case study of a multimodal network that operates in a polycentric, or as some urban geographers would argue, dispersed agglomeration. Because more than one third of rapid transit users in LA are lower-income working patrons, and many of these are likely of recent immigration status it is important to understand which types of accessibility might affect this set of users. Multi-level generalized linear models were implemented where key predictors, including stations' metropolitan-accessibility composite indicator; stations' local-accessibility composite indicator; and a bus-connectivity indicator are regressed onto station-level average weekday boardings. Rapid transit stations boarding data and patrons socio-economic and ethnic status is drawn from Los Angeles' LA Metro Bus and Rail On-board Survey (2012). Other sources of data are LA Metro stations' WalkScore® ranks; US Census ACS and LEHD databases for population and employment levels; and LA multi-agency GTFS files. These latter files were used for service levels calculations and development of the travel time impedance matrix, where data was processed with Transit Network tools in ArcGIS Pro (v.2.X). Results indicate that independently a station's nodal metropolitan-accessibility is significant at a 95% confidence level with a moderate effect and with modest improvement in model fit. A station's local-accessibility, operationalized with a WalkScore® rank, has a strong effect at the 99% confidence level and registers a strong interaction with the metropolitan-accessibility index at a 99% confidence level. Bus connectivity at station-level and stations' metropolitan accessibility also report a highly significant interaction at a 99% confidence level and bus-connectivity registers the largest main effect. Notable improvements in model fit and explanatory power are also noted. The aforementioned interactions produce better model fits as per AIC and BIC statistics, likelihood-ratio tests, and pseudo-R² as compared to the base model. In sum, transit stations' multi-scalar and multi-modal accessibility attributes, and their interactions are significant predictors of aggregate travel behavior in LA's rapid-transit network. It appears that for the working lower-income set of users, many of which are likely of recent immigrant status, are highly sensitive to rapid-transit stations' bus-connectivity levels and metropolitan accessibility levels. Land-use and transit planners, and TOD studies would benefit from including stations' metropolitan and local composite indicators of accessibility, bus-connectivity and relevant interactions in their modeling and analyses; and from conducting spatial analyses of the distribution of these accessibility benefits across socio-economic and ethnic groups in order to better understand the equity dimensions of TOD and metropolitan transit investments. The necessary data for developing accessibility composite indicators and bus-connectivity is readily available, and existing GIS/GTFS transit analysis tools only require moderate skill levels for the development of realistic calculations of transit time or distance impedance matrices. Likewise, basic spatial, socio-economic, land-use, and build-environment data is becoming more readily accessible for developing multi-scale station indicators of accessibility and equity assessments.

Citations

- Ramos-Santiago, L. E. (2021). Towards a better account and understanding of bus/rapid-transit interactions: The case of Los Angeles. *Case Studies on Transport Policy*, 9(3), 1167-1179.
- Hansen, Walter G. "How accessibility shapes land use." *Journal of the American Institute of planners* 25, no. 2 (1959): 73-76.
- Horner MW. Exploring metropolitan accessibility and urban structure. *Urban Geography*. 2004 May 1;25(3):264-84.
- Schlossberg, M., and N. Brown. Comparing transit-oriented development sites by walkability indicators. *Transportation Research Record: Journal of the Transportation Research Board*. 2004; 1887: 34-42. <https://journals.sagepub.com/doi/abs/10.3141/1887-05>
- Moniruzzaman, Md, and Antonio Pérez. "Accessibility to transit, by transit, and mode share: application of a logistic model with spatial filters." *Journal of Transport Geography* 24 (2012): 198-205.

Key Words: accessibility, direct-demand, station, interactions, lower-income

THE STORY OF VEHICLE ABUNDANCE: A MODEL OF VEHICLE OWNERSHIP IN DAVIS, CA

Abstract ID: 1900

Individual Paper Submission

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Car ownership models can play a critical role in understanding the travel behavior of people and households. It can also inform policy makers in understanding the purchase decisions and factors influencing the selection of vehicle models. Car ownership models play a significant role in transportation planning and transport modeling systems. Almost all transportation analyses would include this variable as an input since it impacts mode choice, trip frequency, travel time and route choice, trip tours, etc. (Liu, 2014). It is known that modeling car ownership has been

an interest of private organizations for a long time. Public agencies have also paid attention to this factor's importance in managing policies related to environmental and transit issues. Although car ownership models are not usually a part of classical transportation demand modeling, a model or sub-model of car ownership is frequently used to determine the vehicle mile traveled in the generation and distribution system (Jong 2004). Many studies are dedicated to car ownership models, emphasizing the distance traveled by vehicles and households. Still, various car ownership models are developed for different purposes with different audiences that might benefit from a distinctive aspect of car ownership, such as oil companies, car manufacturers, investment decision-makers, national, regional, and local governments (De Borger 2016, Jong 2004).

From the perspective of City of Davis which is a pedestrian and bike friendly city, studying vehicle ownership models can help understand if built environment or proximity to destinations play any critical role in influencing car ownership behavior. In this context the main question that this study will try to answer is, "what are the factors that impact the level of car ownership in Davis households?" Hence, our dependent variable of interest is "household vehicle ownership levels." We look into the factors such as income, number of workers, rented housing, bus access and household size as key independent variables. We use Davis resident household travel survey data, a subset of the 2018 Sacramento Area Council Of Government (SACOG) household travel survey. The data subset contains household characteristics, socio-demographics and trip-level information of 289 households with 612 persons and associated 17,139 trips.

We ran two models including simple MNL and Ordered Logit model. We used Apollo package in R to run the models. The result of the models showed that the ordered logit model was performing better regarding the prediction of household car ownership level. In the same direction of the hypothesis of this study, household size and number of workers had positive impact on the level of car ownership. The effect of other modes use were not significant same as having geographical access to bus access in the ordered model but they were all significant in the simple MNL. However, renting the home associated with a negative and statistically significant effect on car ownership. Although the access and use of other modes were not significant in the ordered model, the results should be reconsidered using another dataset with larger observations since the used dataset had only 289 households which might constraint the models results. We recommend comparing the result of this study with another city in the region to better understand the patterns of impacting factors on car ownership levels.

Citations

- De Borger, B., Mulalic, I., & Rouwendal, J. (2016). Substitution between cars within the household. *Transportation Research Part A: Policy and Practice*, 85, 135–156. <https://doi.org/10.1016/j.tra.2016.01.007>
- <https://doi.org/10.1016/j.tra.2016.01.007> JONG, G. D., FOX, J., DALY, A., PIETERS, M., & SMIT, R. (2004). Comparison of car ownership models. *Transport Reviews*, 24(4), 379–408. <https://doi.org/10.1080/0144164032000138733>
- Liu, Y., Tremblay, J.-M., & Cirillo, C. (2014). An integrated model for discrete and continuous decisions with application to vehicle ownership, type and usage choices. *Transportation Research Part A: Policy and Practice*, 69, 315–328. <https://doi.org/10.1016/j.tra.2014.09.001>
- 2018 SACOG Regional Household Travel Survey. Sacog.org. Sacramento Area Council of Governments (SACOG)

Key Words: Car ownership level, built environment, discrete choice modeling, household characteristics

SQUEEZED BY TIME: HOW MOTHERS PERFORM CAREGIVING TRIPS

Abstract ID: 1904

Individual Paper Submission

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Non-work trips performed by women are estimated to take up a large portion of daily travel time in United States, and women's trips are more likely to be caregiving activities. Caregivers are also more likely to perform "trip-chaining," multi-purpose trips which involve various destinations and modes of travel (Hanson, 1980). Their trips are shorter than the average commute, cover a polygonal spatial pattern around home, and are likely to involve public transit (Madariaga, 2013).

There is little research about how mothers build up capability to manage, shape, and control time to perform caregiving trips. Such control of temporality is crucial in caregivers' travel, as they are required to be at the designated spot at the right moment (e.g., supper time, picking up and dropping off children). Time management may be more difficult with intersected vulnerabilities – for instance, carless mothers are more often exposed to involuntary and unexpected waiting hours such as places like bus stop.

To examine the temporality of caregiving trips performed by mothers, I draw on interviews with mothers from diverse

backgrounds. My interviews focus on key life events before, during and after pregnancy. Applying Lanzendorf's (2003) mobility biographies approach, I analyze how their mobility practices and time management have changed with motherhood. I also draw on Burrell's (2020) concept of the "half-built assemblage." By utilizing this approach, I will examine how mothers' mobility is often "half-built and indefinitely delayed" by care labor over time. I explore how mothers build capability to negotiate given circumstances and actors "in time."

My research provides offers an alternative viewpoint for transportation literature that focused more on cross-sectional data and lacked longitudinal perspectives, especially on women and their mobility of care.

Citations

- Burrell, J. 2020. On half-built assemblages: Waiting for a data center in Prineville, Oregon. *Engaging Science, Technology, and Society*, 6, 283-305.
- Hanson, S. 1980. The importance of the multi-purpose journey to work in urban travel behavior. *Transportation*, 9(3), 229-248.
- Lanzendorf, Martin. 2003. "Mobility Biographies. A New Perspective for Understanding Travel Behaviour." In 10th International Conference on Travel Behaviour Research (IATBR), Lucerne. Vol. 1015.
- Sánchez de Madariaga, I. Mobility of Care: Introducing New Concepts in Urban Transport. In *Fair Shared Cities: The Impact of Gender Planning in Europe*, 2013.

Key Words: gendered mobility, transportation equity, caregiving trips

HOW GREENWAY EXPOSURE REDUCES BODY WEIGHT: A NATURAL EXPERIMENT IN CHINA

Abstract ID: 1908

Individual Paper Submission

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The prevalence of overweight and obesity has gradually evolved into a global epidemic and threatens public health. A growing body of evidence, mainly cross-sectional rather than longitudinal, suggests that proximity to greenspaces is associated with a lower probability of being overweight or obese. However, causal evidence on this topic is limited, especially in developing countries. Although several recent natural experiment studies assessed the health benefit of green space, greenways in earlier studies were typically only a few kilometers in length, and some cumulative benefits of greenspace were not apparent or not detected. To address these issues, the present study investigated the effects of a large-scale greenspace on changes in body weight outcomes using a natural experiment approach. Two-wave survey data on 1,020 adults were examined before and after the creation of East Lake greenway (with 120 km length) in Wuhan, China. Participants were split into a treatment and a control group based on a 2 km threshold distance from housing estates to the greenway. Difference-in-difference estimations and structural equation models were used to estimate the effects and pathways between the greenway intervention and BMI changes. This study assessed 1) to what extent peoples' body mass index (BMI) changed following a greenway intervention, and 2) potential gender disparities in both direct effects and underlying mediating pathways linking greenway exposure and BMI changes. The results showed that both men and women in the treatment group experienced a minor BMI reduction, while the BMI increased in the control group. We also found distinct mediating mechanisms across gender. Changes in moderate to vigorous physical activity mediated the association between the greenway intervention and a reduction in BMI among men, while mental health changes mediated the association for women. Our findings provide rigorous evidence that exposure to greenway diminishes body weight and strengthen the rationale for green infrastructure investments to enhance public health in high-density cities.

Citations

- Twohig-Bennett, C., & Jones, A. (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research*, 166, 628-637.
- Xie, B., Lu, Y., Wu, L., & An, Z. (2021). Dose-response effect of a large-scale greenway intervention on physical activities: The first natural experimental study in China. *Health & Place*, 67, 102502. doi:10.1016/j.healthplace.2020.102502
- Lachowycz, K., & Jones, A.P. (2011). Greenspace and obesity: a systematic review of the evidence. *Obesity Reviews*, 12(5), e183-e189.
- Towards a better understanding of the relationship between green space and health: Development of a theoretical framework. *Landscape and Urban Planning*

Key Words: greenway, body mass index, natural experiment, causality, mediating effect

HIGHWAYS AND THE DANGER ZONE. POLICY AND POLITICS OF HIGHWAY EXPANSIONS DURING A CLIMATE CRISIS

Abstract ID: 1913

Individual Paper Submission

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In August 2021 – while heat waves, hurricanes, floods, and wildfires battered people around the globe – the International Panel on Climate Change (IPCC) released the Sixth Assessment Report outlining and updating the physical science understanding of climate systems. The UN Secretary General António Guterres called its findings a “code red for humanity” (1). In February 2022 the IPCC released Part II of the Sixth Assessment Report, which assessed the deleterious human and environmental impacts that we can expect from climate change. Secretary General Guterres commented: “Nearly half of humanity is living in the danger zone – now” (2). And throughout that winter and spring, the state transportation commission in California – a forerunner in climate policy – held its annual meetings about how to spend nearly \$1 billion of the state’s core transportation funds this year. Over 40% of funds – the plurality – are slated for new highway capacity, transportation infrastructure that will increase likely greenhouse gases by inducing new vehicle use.

Decisionmakers, planners, and engineers continue to expand roadway capacity despite decades of research showing that increasing highway capacity severs communities and induces more driving and freight traffic, causing local air pollution and global climate impacts and negating any initial congestion relief in the long run (3). Why, then, do policymakers continue to expand highways when they perpetually fail to reduce congestion and contravene other policy goals? Who is influential in driving and opposing these capacity projects, and what factors motivate their advocacy?

This study investigates these questions of policy beliefs, power, and governance around several proposed highway expansion projects in California. Through interviews and a survey of policymakers, planners, engineers, agency staff, and advocates, we explore the factors that motivate policy actors to spend billions of dollars and significant political capital on highway expansions. We identify the problems that policy actors are trying to solve with new road capacity and the policy beliefs that motivate the consideration of and advocacy for various solutions. Further, we shed light on the circumstances in cases where community-based coalitions have been successful in halting or delaying highway expansion projects.

Motivations and coalitions structures will vary by project and metro region, though we hypothesize that the ever-elusive “congestion relief” is a powerful factor that motivates people to support highway expansions and that information about or understanding of induced travel is likely low. The transportation policy literature often ignores questions of political context and governance, but “it is important to know the ‘who, what and why’ of influence in a policy sphere in order to understand the potential barriers and opportunities for policy change” (4).

Citations

- UN News. 2021. UN News. 2021. “IPCC report: ‘Code red’ for human driven global heating, warns UN chief”.
- UN News. 2022. “IPCC adaptation report ‘a damning indictment of failed global leadership on climate’”
- Handy, Susan & M. Boarnet. 2014. Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions. Policy Brief.
- Marsden & Reardon. 2017. Questions of governance: Rethinking the study of transportation policy.” Transportation Research Part A: Policy and Practice 101 (2017): 238-25

Key Words: Highway expansion, Decisionmaking, Policy

SOCIAL EQUITY, BLIND SPOTS, AND ISSUES OF DATA REPRESENTATION: EVIDENCE FROM IMPACTS OF BOGOTA'S URBAN GONDOLA ON JOB ACCESSIBILITY

Abstract ID: 1915

Individual Paper Submission

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Frequently interconnected with urban mass transit and built in geographically marginalized low-income areas, urban gondolas can make it easier for the poor to access urban amenities and job markets. This accessibility advantage provided by such transport innovation is that, like under- or above-ground urban rail systems, they can bypass traffic congestion, thus enabling significant reductions in travel times. The most recent urban gondola, TransMilenio, opened in Bogotá in December 2018. Using TransMiCable as a case study, this paper highlights the virtues and challenges of employing accessibility as a transportation investment performance measure.

The growing popularity of urban gondolas in Latin America has also been accompanied by inconsistent figures of who benefits from such investments. One year before TransMiCable opened to the public, the city's administration indicated that "travel times between Portal Tunal [the BRT-Gondola transfer terminal] and Mirador-Paraiso station will be reduced from one hour to 13 minutes (Alcaldía Mayor de Bogotá, 2017, p. 4). Planning documents often refer to beneficiaries from the project, the nearly 670,000 low-income inhabitants who residents of the district of Ciudad Bolívar, where TransMiCable is located (Alcaldía Mayor de Bogotá, 2017). Nevertheless, according to the city's BRT agency, "TransMiCable is the system that improves the mobility in Ciudad Bolívar and is the mobility option for about 80.000 inhabitants that live in the project surroundings."

The inconsistent figures on who benefits from investments in cable-propelled transit lines in peripheral areas are also used by some critics that deem these projects as not a fair use of scarce public resources because they cost a lot and benefit a few. Brand and Davila (2011) question whether Medellín's first gondola was a worthy investment given its modest impact. Based on official survey data, the authors argue that journeys on Medellín's MetroCable represent only ten percent of all long-distance journeys in the project's direct area of influence. This view is consistent with some local planners' opinions and public opinions expressed on social media outlets like Twitter.

Lack of a well-accepted and consistent method to assess how and who may benefit from these infrastructure investments muddles transport planning processes. Moreover, the reliance on simplistic and dated approaches to identify who benefits from investments in public transportation may also prevent planners from fully seeing the advantages to incorporate other essential elements into the assessment, including land uses, which accessibility constructs account for. A wealth of scholarship highlights, at least from a more theoretical standpoint, the need to adopt accessibility in transportation planning practice.

But would estimating the distributive effects of TransMiCable on job accessibility provide substantially different figures regarding who benefits from the project? What potential data representation issues do planners face when adopting accessibility impact assessments in their toolboxes? To answer these questions, I employ urban data analytic tools to produce multiple spatial and comparative analyses of the distribution of job accessibility enabled by TransMiCable. I show that the positive accessibility effects go well beyond this delimitation, spilling over to low- and middle-class neighborhoods in other parts of the region, challenging classical views of who benefits, and opening data representation challenges I also discuss.

Citations

- Brand, P., & Dávila, J. D. (2011). Mobility innovation at the urban margins. *City*, 15(6), 647–661.
- Alcaldía Mayor de Bogotá. (2017). TransMiCable Un Sueño De Volar Hecho Realidad. <https://www.caf.com/media/8389/>
- Handy (2020). Is accessibility an idea whose time has finally come? *Transportation Research Part D Transport and Environment* 83(2):102319
- TransMilenio. (2018). Abecé de TransMiCable. www.transmilenio.gov.co/publicaciones/

Key Words: accessibility, equity, public transportation, urban data analytics

EXPLORING TRAVEL PATTERNS OF PEOPLE WITH DISABILITIES: A MULTILEVEL ANALYSIS OF ACCESSIBLE TAXI TRIPS IN TORONTO, CANADA

Abstract ID: 1916

Individual Paper Submission

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Improving transport accessibility for people with disabilities is of crucial importance as they are more likely to encounter transport-related exclusions (Lucas, 2012). Previous studies have shown that people with disabilities encounter difficulties when travelling by public/para-transit. They may experience barriers such as inoperable boarding facilities, attitudinal barriers among drivers, failure to clear wheelchair securement zones, etc. (Bezyak et al., 2017). Without improved public transit services and policies to remove travel barriers for people with disabilities, these people continue to lack full access to public transportation.

Further, research suggests that people with disabilities facing travel barriers are at greater risk of being socially excluded, which may negatively influence their health, well-being, education, and employment outcomes (Lindsay, 2020; Lucas, 2012). For example, Grisé et al. (2019) found that in Montreal, Canada, wheelchair users have access to

only 46% of the jobs by public transit compared to the general population. It indicates an urgent need to provide accessible transportation for people with disabilities to overcome social exclusion.

However, we know little about the travel patterns of people with disabilities. People with disabilities are often excluded from the discussion of transportation design and travel surveys (Oliver, 2013). Their travel needs are often ignored in planning: research found that in many circumstances, disability was seen as a personal problem to be overcome rather than social or environmental barriers (Oliver, 2013). In addition, it remains unclear whether existing para-transit services serve different neighbourhoods and travellers without discrimination. Research on the equity of accessible transit will be valuable as we guide urban policy in narrowing the mobility gap and promoting social inclusion.

This study aims to investigate how accessible taxis are being used by people with disabilities in Toronto, Canada. We analyze operational data from a fully accessible taxi brokerage operating under contract with Wheel-Trans, the City of Toronto's para-transit service. The dataset records over 1 million accessible taxi trips from June 2018 to June 2021. The main research questions are: (a) When and where are accessible taxi trips occurring in Toronto? (b) What are the main trip purposes? (c) What factors influence the travel experiences?

To achieve our objectives, we first use descriptive analyses to reveal the distribution of trip origins, destinations, and departure times. It shows that accessible taxi trips dropped dramatically after the breakout of the COVID-19 pandemic. When the lockdown ended, trips have been slowly recovered. As for trip purposes, about 30% of the trip destinations were health services. People with disabilities mainly use accessible taxi services in the morning and afternoon. We then present a multilevel regression model to investigate the factors that influence travel experiences. The results show that neighbourhood-level factors such as average income, population density, unemployment rate, and rate of the visible minority have significant effects on in-vehicle times and wait times. The multilevel model also shows the spatial differences in travel experiences: neighbourhoods in the urban fringe have longer in-vehicle times than neighbourhoods in downtown areas, after controlling for other factors.

The findings will contribute to current academic debates on accessibility, equity, and inclusion issues. Findings may affect the lives of people with disabilities by helping accessible taxi service providers create much-needed policy dialogue and improve their services. This study is also expected to inform broader demand-responsive transit policy and regulation and help identify issues and interventions to improve the transport, mobility, and quality of life of people who may suffer transport poverty.

Citations

- Bezyak, J. L., Sabella, S. A., & Gattis, R. H. (2017). Public transportation: an investigation of barriers for people with disabilities. *Journal of Disability Policy Studies*, 28(1), 52-60.
- Grisé, E., Boisjoly, G., Maguire, M., & El-Geneidy, A. (2019). Elevating access: Comparing accessibility to jobs by public transport for individuals with and without a physical disability. *Transportation Research Part A: Policy and Practice*, 125, 280-293.
- Lindsay, S. (2020). Accessible and inclusive transportation for youth with disabilities: exploring innovative solutions. *Disability and rehabilitation*, 42(8), 1131-1140.
- Lucas, K. (2012). Transport and social exclusion: Where are we now? *Transport policy*, 20, 105-113.
- Oliver, M. (2013). The social model of disability: Thirty years on. *Disability & society*, 28(7), 1024-1026.

Key Words: disability, accessible taxi, transport equity, transport-related social exclusion, multilevel regression

ANALYZING SHARED E-SCOOTER USE DURING THE COVID-19

Abstract ID: 1923

Individual Paper Submission

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Active transportation can play an important role in promoting more physically active and positive public health outcomes. While walking and biking provide significant physical health benefits, their share remains low. As a new form of micro-mobility service, shared E-scooter can enhance the suite of options available in cities to promote active transportation and fill in the gaps when walking or biking are not preferred due to various circumstances. Although E-scooters show potential as a mode of transportation, it is not clear yet whether individuals will adopt it for everyday use, especially in the COVID-19 pandemic. This study aims to analyze the usage frequency of shared E-scooter in Chicago during the COVID-19 pandemic. We designed a comprehensive survey to understand the characteristics of

shared E-scooter users in Chicago and the benefits of promoting shared E-scooters in the region. This online survey launched in the Chicago region from October to December 2020 and collected a rich data set that includes the residents' socio-demographic details and the frequency of shared E-scooter use. To characterize the frequency, we used an ordered probit structure. Our findings show that being man, low income, Millennial and Generation Z, or having no vehicle are associated with the higher frequency of shared E-scooter use. Moreover, we found that living in a block group, where the multimodal network density or aggregate frequency of transit services is higher, might lead people to become more frequent users of shared E-scooters.

Citations

- Bai, S., & Jiao, J. (2020). Dockless E-scooter usage patterns and urban built Environments: A comparison study of Austin, TX, and Minneapolis, MN. *Travel Behaviour and Society*, 20, 264–272. <https://doi.org/10.1016/J.TBS.2020.04.005>
- ucsky, P. (2020). Modal share changes due to COVID-19: The case of Budapest. *Transportation Research Interdisciplinary Perspectives*, 100141. <https://doi.org/10.1016/j.trip.2020.100141>
- Chauhan, R. S., Conway, M. W., da Silva, D. C., Salon, D., Shamshiripour, A., Rahimi, E., ... Pendyala, R. (2021). A database of travel-related behaviors and attitudes before, during, and after COVID-19 in the United States. Retrieved from <http://arxiv.org/abs/2103.16012>
- City of Chicago. (2021). 2020 E-scooter Pilot Evaluation in Chicago. Retrieved from [https://www.chicago.gov/content/dam/city/depts/cdot/Misc/EScooters/2021/2020 Chicago E-scooter Evaluation - Final.pdf](https://www.chicago.gov/content/dam/city/depts/cdot/Misc/EScooters/2021/2020%20Chicago%20E-scooter%20Evaluation%20-%20Final.pdf)

Key Words: Shared E-scooter, Micro mobility, Active transportation, Frequency, Chicago

CRABGRASS CONFINEMENT: TRANSPORTATION ACCESSIBILITY CHALLENGES OF SUBURBAN POVERTY

Abstract ID: 1933

Individual Paper Submission

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While the suburbs in the U.S. have historically been the haven of high-income, white households, in recent years, poverty rates are rising more quickly in suburban areas than in central cities. In 1977, 62% of poor households lived in metropolitan areas but by 2012, the share of low-income households in the suburbs was nearly 50% [1,2]. The rise of suburban poverty has three primary drivers: 1) long-term suburban residents impacted by the 2008 economic recession; 2) movers from urban to suburban areas; and 3) immigrants from outside the U.S [3].

Compared to cities, suburbs are lower density and have fewer public transit options, presenting accessibility challenges to low-income households. Researchers found that commute distances for low-wage workers have increased because of suburbanization [4]. However, suburbanization does not only affect access to jobs, but also access to other key destinations, such as healthcare services, grocery stores, and recreational spaces.

This research targets gaps in the literature by posing the following research questions:

1. How do low-income households trade-off housing affordability and transportation accessibility?
2. What are the spatial and temporal characteristics of trips taken by low-income suburban residents?
3. What transportation options are most effective to address accessibility gaps?

To explore these research questions, we use a mixed-methods approach combining geospatial analysis with a survey of over 200 low-income suburban residents, in-depth interviews (n=30) and ethnographic shadowing (n=10). Our primary study sites are suburban regions of the San Francisco Bay Area (e.g., Richmond, Antioch, Pittsburg, Concord). We find that the majority of survey respondents have moved more than once in the past five years, and approximately one-third of respondents moved from an urban area (e.g., San Francisco, Oakland). Common reasons for moving include wanting cheaper or better quality housing and home ownership. Low-income households are more likely to prioritize safety, cheaper housing, and accessibility to key destinations over proximity to friends, family, or community and proximity to work.

Our qualitative data from interviews and ethnographic shadowing reveal novel insights on the unique accessibility challenges of low-income suburban households in their own words. Many respondents endure long commutes because they were unable to find suitable housing closer to their workplace. Furthermore, respondents often rely on driving personal vehicles, yet struggle with high fuel prices and costs of car maintenance, insurance, and registration. For one respondent, lack of transportation options in their area meant that they had to walk over two miles to meet an Uber driver after their car broke down. These findings from our research point at an important and growing

population of low-income suburban residents who must make a difficult trade-off between housing costs and transportation accessibility. In suburban areas where housing costs are lower and housing quality is higher, research participants reported challenges with traveling to key destinations, including grocery stores, doctor's offices, and religious services. With the fastest growth of households under the poverty line occurring in suburban areas, it is imperative that researchers study the transportation impacts of suburbanization for low-income households and provide alternatives to enhance accessibility.

Citations

- Frey, W. H. (1979). Central City White Flight: Racial and Nonracial Causes. *American Sociological Review*, 44(3), 425. <https://doi.org/10.2307/2094885>
- Blumenberg, E., Pierce, G., & Smart, Michael. (2015). Transportation Access, Residential Location, and Economic Opportunity: Evidence from Two Housing Voucher Experiments. *Cityscape*, 17(2), 25.
- Kneebone, E., & Garr, E. (2010). The Suburbanization of Poverty: Trends in Metropolitan America, 2000 to 2008 (p. 24). Brookings Institution.
- Blumenberg, E., & King, H. (2019). Low-Income Workers, Residential Location, and the Changing Commute in the United States. *Built Environment*, 45(4), 563–581. <https://doi.org/10.2148/benv.45.4.563>

Key Words: transportation equity, suburban poverty, accessibility, spatial mismatch

CAUSAL EFFECTS OF MOBILITY INTERVENTION POLICIES ON INTRACITY FLOWS DURING THE COVID-19 PANDEMIC: THE MODERATING ROLE OF ZONAL LOCATIONS IN THE TRANSPORTATION NETWORKS

Abstract ID: 1943

Individual Paper Submission

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Transport networks play a crucial role in mobility flow changes and the transmission of pandemics. Understanding the moderating effects of urban transport networks on mobility intervention policies is valuable for informing public health interventions and surveillance and for built resilient places and transport systems. However, most of the current studies on COVID-19 transmission focus only on the impact of mobility restriction policies on intercity flows and the role of transport networks between cities, overlooking intracity flows and transport networks within cities.

In this study, we develop a quasi-experimental design by employing an interrupted time series (ITS) analysis to estimate the causal effects of travel restriction and restoration policies on human flows in 491 neighborhoods (i.e., traffic analysis zones, TAZs) in Shenzhen, China, with a focus on the role of urban transport networks during the COVID-19 pandemic. We trace the changes in intracity flows before and after the outbreak of COVID-19 for a long time series from December 2019 to February 2020 in Shenzhen, China, on the basis of anonymized mobile phone trajectory data with fine-grained resolution in space and time. Specifically, we address two questions: (1) What are the causal impact levels and trends of mobility intervention policies on the number of intracity flows? (2) How do the positions of neighborhoods in varying intracity transport networks moderate the causal effects of mobility intervention policies on intracity flows?

The results show that the highest-level emergency response and the two relaxing mobility orders implemented were effective in reducing and resuming daily intracity flows in Shenzhen. The lockdown intervention caused an abrupt drop of 4,563 trips and a gradually enlarging effect, with a downward change trend of 34 trips per day. Moreover, the effectiveness of the second return-to-work order (RtW2) was found to be clearly larger than that of the first return-to-work order (RtW1) as a mobility restoration strategy. In addition, we found that the causal effects of mobility intervention policies are heterogeneous across zonal locations in varying urban transport networks. The declining effect of health emergency response and rebounding effect of RtW2 are considerably large in better-connected neighborhoods with metro transit and road networks, as well as in those close to the airport, indicating that these areas were more adaptive to the interventions. These findings provide new insights into the identification of pandemic-vulnerable hotspots in the transport network inside the city, as well as of crucial neighborhoods with increased adaptability to mobility interventions during the onset and decline of COVID-19.

Citations

- Borkowski, P., Jazdzewska-Gutta, M., & Szmelter-Jarosz, A. (2021). Lockdowned: Everyday mobility changes in response to COVID-19. *Journal of Transport Geography*, 90, 102906. <https://doi.org/10.1016/j.jtrangeo.2020.102906>
- Carteni, A., Di Francesco, L., & Martino, M. (2021). The role of transport accessibility within the spread of the Coronavirus pandemic in Italy. *Safety Science*, 133(September 2020), 104999. <https://doi.org/10.1016/j.ssci.2020.104999>
- Kim, J., & Kwan, M. P. (2021). The impact of the COVID-19 pandemic on people's mobility: A longitudinal study of the U.S. from March to September of 2020. *Journal of Transport Geography*, 93. <https://doi.org/10.1016/j.jtrangeo.2021.103039>
- Lu, J., Lin, A., Jiang, C., Zhang, A., & Yang, Z. (2021). Influence of transportation network on transmission heterogeneity of COVID-19 in China. *Transportation Research Part C: Emerging Technologies*, 129, 103231. <https://doi.org/10.1016/j.trc.2021.103231>
- Mahmud, K. H., Hafsa, B., & Ahmed, R. (2021). Role of transport network accessibility in the spread of COVID-19-a case study in savar upazila, bangladesh. *Geospatial Health*, 16(1). <https://doi.org/10.4081/gh.2021.954>

Key Words: Mobility intervention policies, causality inference, intracity flows, transportation network, COVID-19

TRANSPORTATION EQUITY IN A CONNECTED AND AUTONOMOUS VEHICLES FUTURE

Abstract ID: 1955

Individual Paper Submission

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Connected and Autonomous Vehicles (CAVs) are expected to create a paradigm shift in mobility and transportation. Many studies showcase the ability of CAVs in providing safer roads, reducing congestion, controlling emissions and VMT accumulations, and providing accessibility to a wider audience. Many studies are pushing for a shared-mobility future to sustain the promised benefits of CAVs (Gurumurthy et al., 2019). Shared mobility includes both: shared forms of fleet ownership and shared forms of vehicle ridership. Since the adoption rates and varied usages of these modes by the different demographics (Fleming, 2018) and spatial locations will drastically change, so will the equity landscape. Therefore, the question that begs itself: how do CAVs redefine transportation equity?

Equity implications in transportation studies, specifically in CAVs, are still vaguely studied and assessed. For example, ridership of public transportation might decrease drastically when shared CAVs are highly adopted and widespread. This could lead to the obsolescence of public transportation which has consequential impacts on equity (Soteropoulos et al., 2019). Given that CAVs are a technological advancement with various environmental, social, and economic impacts, necessitates a reassessment of transportation equity and the different factors that come into play.

Litman, (2022) defines transportation equity as the fair or just distribution of transportation costs and benefits among members of society and identifies two methods for analyzing transportation equity: the horizontal and the vertical. Horizontal equity is concerned with a fair share of resources and external costs. Vertical equity is concerned with inclusivity, affordability, and social justice. Traditionally, many studies and metrics have been developed to assist in measuring and identifying transportation equity or transportation justice (Chakraborty, 2006). These measures are in fact used to identify the sources of these inequities such as lack of accessibility to jobs or public transportation, or more intrinsic factors related to the socioeconomics and demographics of a spatial area. However, these methods lack the sociotechnical variations and challenges that come with CAVs. This includes changes in property prices and uses, loss of jobs, limited access to internet, affordability of shared CAVs, and increased sprawl.

In this study we develop a theoretical framework that identifies the various environmental, social, and economic implications of CAVs on transportation equity. In the first part, using an equity lens, we assess existing work on the expected impacts of CAVs with regards to safety, emissions, VMTs, congestion, urban form and land use, accessibility, and economic shifts. In the second part, we conduct semi-formal interviews with experts and disadvantaged groups to evaluate and scrutinize these impacts accordingly. We expect our framework to provide a better understanding of the extent to which we understand the equity implications of CAVs. We also expect to shed light on the relationship between the benefits and externalities that CAVs bring to mobility and transportation. The key benefit of this work is to assist researchers, planners, practitioners, and decisionmakers to rethink equity and justice metrics and methods which lead to an equitable CAV future.

Citations

- Chakraborty, J. (2006). Evaluating the environmental justice impacts of transportation improvement projects in the US. *Transportation Research Part D: Transport and Environment*, 11(5), 315–323. <https://doi.org/10.1016/j.trd.2006.06.003>
- Fleming, K. (2018). Social Equity Considerations in the New Age of Transportation: Electric, Automated, and Shared Mobility. *Journal of Science Policy & Governance*, 13(1). <https://www.sciencepolicyjournal.org/uploads/5/4/3/4/5434385/fleming.pdf>
- Gurumurthy, K. M., Kockelman, K. M., & Simoni, M. D. (2019). Benefits and Costs of Ride-Sharing in Shared Automated Vehicles across Austin, Texas: Opportunities for Congestion Pricing. *Transportation Research Record*, 2673(6), 548–556. <https://doi.org/10.1177/0361198119850785>
- Litman, T. (2022). Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transport Planning. Victoria Transport Policy Institute. <https://www.vtpi.org/equity.pdf>
- Soteropoulos, A., Berger, M., & Ciari, F. (2019). Impacts of automated vehicles on travel behaviour and land use: An international review of modelling studies. *Transport Reviews*, 39(1), 29–49. <https://doi.org/10.1080/01441647.2018.1523253>

Key Words: Connected and Autonomous Vehicles, Transportation Equity, Mobility Justice

PROBABILITY OF TRANSIT-INDUCED GENTRIFICATION AND ITS DETERMINANTS

Abstract ID: 1956

Individual Paper Submission

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Problem, research strategy, and findings: Since the 1990s, the extension of rapid transit lines—both rail and buses—in some U.S. cities/metros has been accompanied with the concerns as about Transit-Induced Gentrification (TIG). Research has documented the occurrence of TIG in some but not all cities/metros. Theory suggests differences in outcomes could be associated with the characteristics of cities/metros and of neighborhoods in the transit corridors. This article presents estimates of the likelihood of TIG in 36 MSAs nationwide that have extended new transit lines from 2000 to 2009. Three different rule-based methods are used to define the occurrence of TIG. MSA and neighborhood characteristics are then examined for their impacts on the probability of TIG using Hierarchical Linear Regression (HLR) models.

We show the likelihood of TIG depends partly on how TIG is defined. Three rule-based definitions of TIG give different levels of probability—about two thirds, around but below half, and around two fifths among the adjacent, gentrifiable neighborhoods, respectively, but reveal consistent patterns across transit modes. Specifically, greater percentages of gentrified neighborhoods are shown around rails stations than around BRT stops, and are shown in the long-term than in the short-term. Useful finding from the HLR models include: 1) MSAs with greater populations, lower unemployment rates, and lower proportions of employees in manufacturing, of college-educated residents, and of white residents may have higher probabilities of TIG; and 2) neighborhoods with shorter distance to freeways, lower station density, higher housing density, higher poverty rates, and higher proportions of families with no children, as well as neighborhoods with lower proportions of females, of employees in manufacturing, and of college-educated residents also may have higher probability of TIG.

Takeaway for practice: The findings of this study help planners and policymakers better understand TIG. For example, compared to rail transit, BRT is less likely to induce gentrification, and thus could help sustain the transit service to the most vulnerable. The identification of neighborhoods with higher probability of TIG will enable planners and policymakers to target policies like affordable housing and rent ceilings to assist the most vulnerable areas and residents. In addition, the use of different definitions and measures of TIG results in substantial differences in the percentages of neighborhoods classified as experiencing gentrification and in identification of different factors that affect the probability of TIG. These findings can be interpreted as evidence that planners and policymakers need to involve stakeholders, especially the low-income and people of color who are more vulnerable to gentrification, in their deliberations over definitions of TIG and when establishing anti-gentrification policies.

Citations

- Bardaka, E., Delgado, M. S., & Florax, R. J. (2018). Causal identification of transit-induced gentrification and spatial spillover effects: The case of the Denver light rail. *Journal of Transport Geography*, 71, 15–31.
- Chava, J., & Renne, J. L. (2022). Transit-Induced Gentrification or Vice Versa? A Study of Neighborhoods Around Light Rail Stations From 1970–2010. *Journal of the American Planning Association*, 88(1), 44–54.
- Dawkins, C., & Moeckel, R. (2016). Transit-induced gentrification: Who will stay, and who will go?. *Housing Policy Debate*, 26(4-5), 801–818.

- Padeiro, M., Louro, A., & da Costa, N. M. (2019). Transit-oriented development and gentrification: a systematic review. *Transport Reviews*, 39(6), 733-754.
- Tehrani, S. O., Wu, S. J., & Roberts, J. D. (2019). The color of health: residential segregation, light rail transit developments, and gentrification in the United States. *International Journal of Environmental Research and Public Health*, 16(19), 3683.

Key Words: Rapid Transit, Gentrification, Vulnerable Neighborhoods

MEASURING TRANSIT EQUITY FOR ON-DEMAND TRANSIT SERVICES

Abstract ID: 1959

Individual Paper Submission

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Many transit authorities in the U.S. are embracing on-demand public transit service for its potential as a viable mobility option that provides first- and last-mile connectivity, particularly in low-density neighborhoods. On-demand public transit is also believed to be beneficial to transit equity since it provides the public transit option for low-income residents living in neighborhoods that have been historically underserved by the conventional transit system. However, little suggests empirical evidence on how this new form of transit system can contribute to advancing equity.

This study examines the effect of on-demand transit service from the equity perspective. The analysis is based on On-demand Multimodal Transit System (ODMTS) which is developed by the Georgia Tech research team and is now being piloted in Atlanta in collaboration with Metropolitan Atlanta Rapid Transit Authority (MARTA). In the ODMTS, on-demand micro-transit serves the first- and last-mile trips and the trip in-between is served by high-occupancy transit (i.e., bus and subway). By comparing the ODMTS and the existing MARTA transit system, this study assesses how much the new system can contribute to the equitable distribution of transit service throughout the entire study area as well as the transit accessibility by neighborhoods.

The analysis mainly consists of two parts: (1) measuring accessibility and (2) measuring equity. This approach is needed as transportation equity is primarily measured in terms of accessibility – the extent to which the transportation system allows people to get to their desired destinations quickly and comfortably. Measuring the accessibility of public transit requires consideration for not only the extent of the service network but also the frequency and reliability of the service to reflect its schedule-dependent characteristics. Thus, this study first measures travel times between every Block Group pair in 5-minute intervals, which is done by trip simulations for each mode. Based on the travel time as well as the travel demand of each pair (e.g., number of commuting trips), we calculate an accessibility index at the Block Group level. Then, the accessibility index is used as a basis for evaluating how well the service caters to neighborhoods that need it most: the transit service demand will be measured by various socioeconomic variables, including vehicle ownership, income, and race. The estimated equity impacts of on-demand transit can then be compared with conventional transit systems to determine whether the new system advances transportation equity beyond conventional fixed-route transit systems.

The analysis shows that not only the ODMTS offers better transit accessibility in most neighborhoods but also the accessibility is improved in a way that it relatively better matches the transit service demands of neighborhoods in the ODMTS compared to the conventional transit system. The findings suggest that transit authorities can better foster an inclusive mobility environment by integrating the on-demand transit service into the conventional public transit infrastructure.

Citations

- Farber, S., Bartholomew, K., Li, X., Páez, A., & Habib, K. M. N. (2014). Assessing social equity in distance based transit fares using a model of travel behavior. *Transportation Research Part A: Policy and Practice*, 67, 291-303.
- Karner, A. (2018). Assessing public transit service equity using route-level accessibility measures and public data. *Journal of Transport Geography*, 67, 24-32.
- Karner, A., London, J., Rowangould, D., & Manaugh, K. (2020). From transportation equity to transportation justice: within, through, and beyond the state. *Journal of planning literature*, 35(4), 440-459.
- Litman, T. (2012). Evaluating transportation equity. Guidance for incorporating distributional impacts in transport planning. Victoria: Victoria Transport Policy Institute.

- Yan, X., Zhao, X., Han, Y., Van Hentenryck, P., & Dillahun, T. (2019). Mobility-on-demand versus fixed-route transit systems: an evaluation of traveler preferences in low-income communities. arXiv preprint arXiv:1901.07607.

Key Words: Transit Equity, On-demand Transit Service, Transit Accessibility, Micro-transit, Public Transit

CHALLENGES IN LOCAL CLIMATE ACTION PLANNING AND IMPLEMENTATION IN TRANSPORTATION AND LAND USE IN JAPAN

Abstract ID: 1968

Individual Paper Submission

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All countries face the impacts of global warming and climate change on the environment, communities, and human health. Given the substantial amount of evidence for a strong consistent relationship between cumulative greenhouse gases (GHGs) emissions and global temperature change, many countries have set policies to reduce the amount of GHGs in the future. Climate change, however, poses substantial challenges for the effective implementation of these policies and countermeasures. Carbon emission reduction and climate impacts adaptation require actions from the international level to the local level in terms of the geographic scale and the level of government. Here the implementation theory poses questions regarding the implementation of meta-policies, the effectiveness of top-down and bottom-up approaches, and coordination, cooperation, and consistency between different levels of government. Inquiries on cross-sectoral coordination follow these questions as climate actions affect various economic and social activities, which cannot be categorized merely into one sector.

This study examines local climate action planning and implementation of national carbon reduction goals in Japan, focusing on the transportation and land use sectors. It addresses the following three main questions in the case of Japan, with an emphasis on coordination, cooperation, and consistency between different levels and sectors of governments, particularly regarding transportation and land use planning essential to reduce automobile trips and distance traveled. First, whether or not and how climate change policies at the higher level are translated into planning and implementation at the local level? Second, what approaches effectively implement national-level policies at the local level? Third, what are hurdles in the implementation of national-level policies at the local level?

The study analyzes the responses to two original surveys on approximately 100 local governments, which were conducted for a seven-month period in 2021. The two surveys were designed based on the initial findings from two interviews with two members of two national agencies and several planners of two local governments in Japan. The first original survey was sent to a unit that prepares local action plans. The second survey was sent to one of the transportation-related units, which is considered most relevant to climate action planning by each local government. The analysis of survey responses was supplemented by inquiries and interviews with multiple departments, divisions, and sections of six local governments and reports obtained from the Ministry of Environment in Japan and local governments.

The current status of climate action planning at the local level in the field of transportation and land use does not translate the national policies on climate change into plans, measures, and actions, which are expected with a certain level of certainty to have significant effects on the GHGs emissions reduction. The analysis indicates (a) lack of clear concrete instructions for effective local actions, (b) lack of funding for implementation, (c) lack of consideration of the transportation and land use connection, and (d) lack of coordination between the departments and sections at the local government, which at least partially derives from the siloization at the national level. In addition, the limited levels of coordination and cooperation result in a lack of local and regional climate actions that effectively reduce GHGs emissions in the field of transportation and land use. As a result, while most local governments prepare local action plans to meet procedural requirements, the efficacy of implemented actions remains unclear.

This study contributes to the literature on climate action planning in the transportation and land use sectors and more broadly to the literature on transportation and environmental planning, which requires more proactive planning than treating environmental impacts as outcomes of transportation planning and projects.

Citations

- Bache, I., Bartle, I., Flinders, M., Marsden, G.R., 2015a. Multi-level Governance and Climate Change: Insights from Transport Policy. Rowmand & Littlefield International Ltd., London, UK.
- Deakin, E., 2019b. Integrating transportation, land use, and environmental planning, in: Transportation, Land Use, and Environmental Planning. Elsevier, pp. 569-600. <https://doi.org/10.1016/B978-0-12-815167-9.00029-3>

- Koontz, T.M., Newig, J., 2014. From Planning to Implementation: Top-Down and Bottom-Up Approaches for Collaborative Watershed Management. *Policy Studies Journal*, 42, 416–442. <https://doi.org/10.1111/psj.12067>
- Koontz, T.M., Steelman, T.A., Carmin, J., Korfmacher, K.S., Moseley, C., Thomas, C.W., 2004. *Collaborative Environmental Management: What Roles for Government?* Resources for the Future Press, Washington, DC.
- Sciara, G.C., 2020. Implementing regional smart growth without regional authority: The limits of information for nudging local land use. *Cities*. <https://doi.org/10.1016/j.cities.2020.102661>

Key Words: climate change, local climate action planning, transportation and land use, implementation theory

IDENTIFICATION OF BARRIERS AND FACILITATORS TO CREATION, MAINTENANCE, AND GROWTH OF TRIBAL TRANSIT PROGRAMS IN THE WESTERN UNITED STATES

Abstract ID: 1975

Individual Paper Submission

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Globally, transit programs are linked to a range of positive outcomes for the communities in which they are located. Outcomes include improved health and greater economic security, not to mention benefits to the environment. This trend is evident within communities located in Indian Country, a term defined by the National Congress of American Indians that refers to places occupied by the tribal nations and includes reservation and trust lands, but also other lands occupied and defined by the presence of tribal peoples. Much of Indian Country is located in rural areas of the United States and is characterized by low population densities. Transit programs in such areas can provide critical services to those without access to automobiles. Yet only 27% of the federally recognized tribes in the U.S. operate transit systems. Increasing the number of tribes with transit systems has the potential to improve the quality of life of both tribal and non-tribal living in Indian Country and in adjacent areas.

Using semi-structured interviews, this research sought to identify the barriers and facilitators to the creation, maintenance, and growth of tribal transit. Forty-seven tribal transit programs within in a 9-state area (Colorado, Idaho, Montana, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming) were identified and the staff members from these programs were recruited for participation in the study. Findings are based on feedback from 15 participants collected in 10 interview sessions totaling 11 hours. Interviews were conducted and recorded via Zoom teleconferencing software between August 2020 and March 2021.

Participants noted that reliable access to funding was essential to creating, maintaining, and growing tribal transit programs. Yet it is the partnerships with local, state, and federal agencies along with sharing of information resources by peer agencies that allow tribal services to thrive. The success of tribal transit programs may be in part due to the ability of transit staff to navigate and create networks of “people as infrastructure” as discussed and defined by Simone.

Citations

- Simone, A. (2021). Ritornello: “People as Infrastructure”. *Urban Geography*, 1-8.
- Stoddard, A. T. (2012). Developing, enhancing, and sustaining Tribal transit services: A guidebook (Vol. 154). Transportation Research Board.
- Brooks, J., Edrington, S., Sharma, S., Vasishth, S., & Cherrington, L. (2014). Literature Review: Transit and Livability in Rural America.

Key Words: Indigenous Planning, Native American, Transit, Social Infrastructure

THE RESILIENCE OF TRANSIT-DEPENDENT COMMUNITIES DURING COVID-19 IN THE BOSTON METROPOLITAN AREA

Abstract ID: 1984

Individual Paper Submission

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Over the past few decades, transportation systems have become increasingly complex and interdependent with other infrastructures, making them vulnerable to disruptions and challenging to recover from (Zhou et al., 2019). Therefore, incorporating aspects of resilience into system planning and operations has gained widespread attention as climate instability and security threats increase. However, public transportation has experienced severe disruption during a pandemic - from partial closures and service reductions to complete network shutdowns. It resulted in less reliable transportation systems, limiting individuals' access to destinations (Vodopivec and Miller-Hooks, 2019).

The mitigation and shock recovery potential of spatial mobility - through accessibility-based geographic connectivity and spatial openness - has been used to establish links between land use and regional activity and transportation improvements (Östh et al., 2018). While some studies have examined the spatial equity of individual accessibility, few have examined the resilience of communities and transit services in COVID-19 or how the pandemics have influenced transit accessibility.

To bridge these gaps in the literature, we focus on the vitality of transit stations in the Boston metropolitan area pre- and during- the pandemic. We measure the built environment and demographic characteristics of different neighborhoods, particularly those with transit stations, and quantify their resilience in the pandemic by measuring accessibility. With data including POI foot-traffic patterns and a data mining framework for clustering analysis of POI access within a 15-minute walkable area in the Boston metropolitan area, we explore the change of daily activities around transit stations, linking the temporal and spatial dimensions.

We found that transit ridership and the number of POI visits within a 15-minute walk of transit stations in the Boston metropolitan area decreased significantly. Both the built environment and social demographic factors played a role in the vitality around transit stations. Different combinations of POI types played a different role in transit station vitality. Finally, we provide policy recommendations and call for cities to take planning actions to mitigate the pandemic's erosion of people's accessibility, design and expand shared transit systems more equitably, and prioritize accessibility improvements.

Citations

- Östh, J., Reggiani, A., & Nijkamp, P. (2018). Resilience and Accessibility of Swedish and Dutch Municipalities. *Transportation*, 45, 1051–1073. <https://doi-org.ezproxy.library.tufts.edu/10.1080/01441647.2017.1383532>
- Vodopivec, N., & Miller-hooks, E. (2019). Transit System Resilience: Quantifying the Impacts of Disruptions on Diverse Populations. *Reliability Engineering & System Safety*, 191(106561). <https://doi.org/10.1016/j.res.2019.106561>
- Zhou, Y., Wang, J., & Yang, H. (2019). Resilience of transportation systems: concepts and comprehensive review. *IEEE Transactions on Intelligent Transportation Systems*, 20(12), 4262–4276. <https://doi.org/10.1109/TITS.2018.2883766>

Key Words: Transit, Resilience, Accessibility, Clustering Analysis

SUBJECTIVE VS. OBJECTIVE: THE DIVERGENCE BETWEEN PERCEIVED WALKABILITY AND WALK SCORE DURING THE PANDEMIC

Abstract ID: 1989

Individual Paper Submission

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Walk Score has been widely used for evaluating the accessibility of a location to walkable amenities, and many studies validate the measurement of Walk Score by examining its associations with walkable environmental attributes (Carr, Dunsiger, & Marcus, 2010; Duncan et al., 2011). Nevertheless, the Walk Score might be a surrogate indicator of the density of a neighborhood, which can only show the convenience of utilitarian walking rather than recreational walking (Hall & Ram, 2018). During the Covid lockdown, walking and running near the home may be attractive to people for increasing their physical activity (Hargreaves et al., 2021). Also, evidence shows that people replace utilitarian walking with recreational walking in high-income areas (Hunter et al., 2021). How people perceive and evaluate a walkable environment may also change due to the Covid-related disruptions. Thus, it is necessary to examine how subjective walkability aligns with objective Walk Score after the outbreak of Covid-19.

This study examines the divergence between subjective walkability and objective Walk Score by asking two research questions. First, where are the gaps between subjective walkability and objective Walk Score in the Eugene-Springfield metropolitan area? And second, what are the associations between individual characteristics,

neighborhood environmental factors, and the divergence between walkability and Walk Score? We conducted an online survey with a sample frame including residents in the Eugene-Springfield area and retrieved the Walk Score for the nearest intersection to each participant's home. We identified the walkability and Walk Score cluster by univariate Local Moran's I analysis and conducted a bivariate local Moran's I analysis to compare subjective walkability to Walk Score. Based on the results of spatial autocorrelation analysis, we used multilevel regression models to control the neighborhood-level variance and examine how individual- and neighborhood-level factors relate to the divergence between walkability and Walk Score. Additionally, we replicated the statistical analyses to explore the divergence between Bikeability and Bike Score.

Bivariate Local Moran's I analysis shows that some participants in the suburbs of Eugene-Springfield tend to overestimate both walkability and bikeability, with the Walk Score and Bike Score of their neighbors as references. By contrast, some participants in the high-density environment (e.g., downtown and university campus) underestimate the walkability. Regression analysis reveals that population density, beliefs in environmental policies, and the proportion of elderly and zero-car households are negatively related to the divergence between walkability and Walk Score, while median year structure built is positively associated with the gap. The mismatch suggests that planners and policymakers applying Walk Score should consider the spatial mismatch and incorporate more indicators to assess walkability comprehensively.

Citations

- Carr, L. J., Dunsiger, S. I., & Marcus, B. H. (2010). Walk Score™ As a Global Estimate of Neighborhood Walkability. *American Journal of Preventive Medicine*, 39(5), 460-463. doi:<https://doi.org/10.1016/j.amepre.2010.07.007>
- Duncan, D. T., Aldstadt, J., Whalen, J., Melly, S. J., & Gortmaker, S. L. (2011). Validation of walk score for estimating neighborhood walkability: an analysis of four US metropolitan areas. *International journal of environmental research and public health*, 8(11), 4160-4179. doi:10.3390/ijerph8114160
- Hall, C. M., & Ram, Y. (2018). Walk score® and its potential contribution to the study of active transport and walkability: A critical and systematic review. *Transportation Research Part D: Transport and Environment*, 61, 310-324. doi:<https://doi.org/10.1016/j.trd.2017.12.018>
- Hargreaves, E. A., Lee, C., Jenkins, M., Calverley, J. R., Hodge, K., & Houge Mackenzie, S. (2021). Changes in physical activity pre-, during and post-lockdown COVID-19 restrictions in New Zealand and the explanatory role of daily hassles. *Frontiers in Psychology*, 12, 410.
- Hunter, R. F., Garcia, L., de Sa, T. H., Zapata-Diomed, B., Millett, C., Woodcock, J., . . . Moro, E. (2021). Effect of COVID-19 response policies on walking behavior in US cities. *Nature Communications*, 12(1), 3652. doi:10.1038/s41467-021-23937-9

Key Words: walkscore, walkability, COVID-19 lockdown

BLOCKCHAIN AND DISTRIBUTED AUTONOMOUS COMMUNITY ECOSYSTEMS: OPPORTUNITIES TO DEMOCRATIZE FINANCE AND DELIVERY OF TRANSPORT, HOUSING, URBAN GREENING AND COMMUNITY INFRASTRUCTURE

Abstract ID: 1991

Individual Paper Submission

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Many global cities face transportation infrastructure that reinvestments, housing shortages and insufficient capacity to provide municipal services. Yet at the same time there is little opportunity for individual citizens to be empowered and express ownership of their own environments (Levinson, 2010; Wilker et al., 2016)—despite that many neighborhoods and local organizations have the potential to function as evolved forms of distributed autonomous organizations (DOAs) and to self-fund / create the things that they need or desire (Economist, 2022; Riggs et al., 2022).

In this light this paper evaluated a climate-oriented autonomous community ecosystem (ACE) to think about how to citizens and organizations can create change in their own streets and infrastructure using blockchain and decentralized finance. It builds on specifications for using blockchain and distributed organizations (Porkodi & Kesavaraja, 2021; Riggs et al., 2022) and evaluated a case study in East Oakland which used a decentralized rights management platform to encourage tree planting and carbon sequestration for urban street greening. Over 200 trees have planted by residents in this neighborhood using this decentralized blockchain platform.

The research finds that this kind of has the potential for quantifying citizen-based improvement of transportation infrastructure that has climate benefit. The technology has potential to enable new forms of exchange for transport and housing infrastructure, energy and many other functions that happen at the neighborhood level. Ultimately a future platform could provide this ecosystems and builds on the process flows defined herein with simple ways of

creating local economies, facilitating transactions, issuing rights and contracts and building—leading to a smarter and more transparent ways of building and running cities.

Citations

- Economist. (2022). What are DAOs, or decentralised autonomous organisations? The Economist. https://www.economist.com/the-economist-explains/2022/01/26/what-are-daos-or-decentralised-autonomous-organisations?gclid=CjwKCAiAo4OQBhBBEiwA5KWu_zoaSaASMg8wcvVYVTkjI4CBgZ2HoS7Y2ucKUeRfsies2VafViJRMhoCWm4QAvD_BwE&gclidsrc=aw.ds
- Porkodi, S., & Kesavaraja, D. (2021). Chapter 11—Blockchain for green smart cities. In S. Krishnan, V. E. Balas, E. G. Julie, Y. H. Robinson, & R. Kumar (Eds.), *Blockchain for Smart Cities* (pp. 211–231). Elsevier. <https://doi.org/10.1016/B978-0-12-824446-3.00004-1>
- Riggs, W., Vyas, V., & Sethi, M. (2022). Blockchain and Distributed Autonomous Community Ecosystems: Opportunities to Democratize Finance and Delivery of Transport, Housing, Urban Greening and Community Infrastructure (SSRN Scholarly Paper No. 4045363). Social Science Research Network. <https://doi.org/10.2139/ssrn.4045363>
- Levinson, M. L. (2010). The civic empowerment gap: Defining the problem and locating solutions. *Harvard Review*.
- Wilker, J., Rusche, K., & Ryma-Fitschen, C. (2016). Improving participation in green infrastructure planning. *Planning Practice & Research*, 31(3), 229–249.

Key Words: infrastructure, technology, transportation, blockchain, civic engagement

Track 14 Posters

FUNCTIONAL AND AESTHETIC COSTS OF E-SCOOTERS: INSIGHTS FROM A STATED PREFERENCE EXPERIMENT ON NEIGHBORHOOD CHOICE

Abstract ID: 1192

Poster

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As scooters become part of the streetscape in cities, they may impose both functional and aesthetic costs on other street users and residents. We are curious what characteristics of an e-scooter deployment may impact the attractiveness of street, measured by residents' willingness to live in a particular neighborhood. We used a stated preference survey to test respondents' choice by varying the number of scooters, color of scooters, location of parking, scooter organization, and monthly rent or mortgage payment. The results suggest that level of messiness is the most important aesthetic factor for scooter parking management across all neighborhood types. The sensitivity to number of scooters is highest in low density neighborhoods and lowest in high density neighborhoods. People in different neighborhood types have different preferred parking locations, but all prefer scooters not to be on the sidewalk. The study implies that scooter management team may customize parking objectives according to neighborhood types.

Citations

- Brown, A., Klein, N. J., & Thigpen, C. (2021). Can you Park your Scooter There? Why Scooter Riders Mispark and What to do about it. Findings. <https://doi.org/10.32866/001c.19537>
- James, O., Swiderski, J., Hicks, J., Teoman, D., & Buehler, R. (2019). Pedestrians and E-Scooters: An Initial Look at E-Scooter Parking and Perceptions by Riders and Non-Riders. *Sustainability*, 11(20), 5591. <https://doi.org/10.3390/su11205591>
- Jiao, J., & Bai, S. (2020). Understanding the Shared E-scooter Travels in Austin, TX. *ISPRS International Journal of Geo-Information*, 9(2), 135. <https://doi.org/10.3390/ijgi9020135>
- Rambonilaza, M., & Dachary-Bernard, J. (2007). Land-use planning and public preferences: What can we learn from choice experiment method? *Landscape and Urban Planning*, 83(4), 318–326. <https://doi.org/10.1016/j.landurbplan.2007.05.013>

Key Words: e-scooters, choice experiment, visual preference study, cost, parking management

AGING AND SEA LEVEL RISE: EXPLORING FUTURE ELDERLY POPULATION'S ACCESSIBILITY TO ESSENTIAL SERVICES IN HONOLULU, HAWAII

Abstract ID: 1462

Poster

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Demographic studies have shown two trends: (1) elderly population is growing as a consequence of longer life expectancy (United Nations, 2020); (2) population in low elevation coastal zones will significantly increase (Neumann, 2015). One of the potential risks of living in low elevation coastal zones is the projected sea level rise. As sea level rises, more and more frequent flooding can cause disruptions and damage to the roadways in coastal areas (Shen and Kim, 2020; Lu and Peng, 2011). Seniors could be especially vulnerable to such disruptions given their need for emergency services, which could also increase because of the adverse impacts climate change has on health (Liu and Eagles, 2012). This study aims to investigate the impacts of sea-level rise on the aging population's accessibility to essential services and its implication for long term adaptation planning using Honolulu, Hawaii as a case study. Using Cohort Change Ratio (CCR), the study projects the elderly population in each Traffic Analysis Zones (TAZs) in future decades. Road segments and essential facilities (grocery stores, police stations, fire stations, and hospitals and clinics) at risk under different sea-level rise scenarios (1.1 feet, 2.0 feet, and 3.2 feet) are identified. Network connectivities from each TAZs to nearest essential services are analyzed. The results show that while the physical impacts on infrastructures are mild, some vulnerable communities' access to essential services will be greatly affected even under 1.1 feet sea-level rise scenarios. Especially some areas with a high projected density of the elderly population will be cut off to essential services due to transportation bottlenecks. For the rest of the population, sea level rise could significantly reduce the number of people with timely access to essential services. The results not only urge transportation network planners to take actions to make sure transportation connectivities to vulnerable elder population at-risk are protected, but also suggest that over the long term land use planning would be one of a key factors to adapt to climate change. These findings have broad implications for other coastal locations with similar development and growth patterns, and the methodology used could be easily adapted to be used in a variety of other metropolitan areas across the country to conduct similar vulnerability analyses to aid in adaptation planning in practice.

Citations

- United Nations (2020). World Population Aging 2020 Highlights. United Nations Department of Economic and Social Affairs.
- Neumann, B., Vafeidis, A. T., Zimmermann, J., & Nicholls, R. J. (2015). Future coastal population growth and exposure to sea-level rise and coastal flooding-a global assessment. *PloS one*, 10(3), e0118571.
- Shen, S., & Kim, K. (2020). Assessment of Transportation System Vulnerabilities to Tidal Flooding in Honolulu, Hawaii. *Transportation Research Record: Journal of the Transportation Research Board*, 036119812094068. doi:10.1177/0361198120940680
- Lu, Q. C., & Peng, Z. R. (2011). Vulnerability analysis of transportation network under scenarios of sea level rise. *Transportation research record*, 2263(1), 174-181.
- Liu GJ., Engels B. (2012) Accessibility to Essential Services and Facilities by a Spatially Dispersed Aging Population in Suburban Melbourne, Australia. In: Gartner G., Ortig F. (eds) *Advances in Location-Based Services. Lecture Notes in Geoinformation and Cartography*. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-24198-7_21

Key Words: Elderly population, Accessibility, Coastal road infrastructure, Sea level rise adaptation

DISABILITY, TRAVELING, ACCESS TO OPPORTUNITIES: THE ROLE OF ECONOMIC RESOURCES

Abstract ID: 1632

Poster

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Of the 43 million people with disabilities in the U.S., roughly one-third stay home on any given day (Henly and Brucker 2019). By contrast, just 13 percent of people without disabilities typically stay home. This gap in travel behavior between people with and without disabilities is often translated into limited access to out-of-home activities among people with disabilities (Páez and Farber, 2012). In investigating the transportation challenges faced by people with disabilities, most studies have focused on physical barriers, such as lack of wheelchair-accessible ramps or lifts at public transit stops (Grisé et al., 2019). A related strand of research shows that low-income households encounter

financial barriers to transportation that can restrict their access to opportunities (Morris et al., 2020). These findings are relevant in the study of disability and travel because working-age people with disabilities in the U.S. are twice as likely to be unemployed or in poverty than those without disabilities.

In this work, we explore how economic marginalization among people with disabilities may exacerbate physical barriers. For example, many wheelchair users can drive independently with a modified vehicle (e.g., with ramps, hand controls, etc.), yet modified vehicles are incredibly expensive (on average \$6,500 USD and up to \$65,000 USD) and are thus out of reach for many. Economic insecurity can compound disability. A wheelchair user with resources could purchase a modified vehicle and enjoy remarkable access to opportunities, but one without resources would have to rely on public transit or family and friends, thereby constraining their access. Thus, we argue that more research needs to explicitly examine the role of economic resources in widening or closing the gap in travel between people with and without disabilities.

Using the nationwide time-use diaries from the American Time Use Survey from 2008 to 2020, we examine five “disability gaps” in travel outcomes. We compare the travel patterns of people with and without disabilities ages between 18 and 64 based on five measures: the likelihood of 1) traveling, 2) using a car, or 3) driving on the survey day, 4) the total number of trips on the survey day, and 5) a relatively new measure of access known as the travel time price (minutes spent traveling divided by minutes engaging in out-of-home activities, where a lower value indicates greater access) (Chen and Mokhtarian, 2006).

If economic resources are indeed compounding physical barriers, we would expect larger disability gaps for individuals with low incomes and narrower gaps for those with high incomes. Similar patterns should emerge for other economic indicators like employment status and educational attainment. Likewise, marginalized racial and gender identities are likely to widen the disability gap. Based on the analysis, we find strong evidence that economic disparities do reinforce physical barriers to travel. These patterns tend to hold when disaggregating the results by an individual’s specific type of disability (mobility, vision, hearing, and cognitive disability).

Our research illustrates how disability, economic disadvantage, and traveling influence one another. We draw on our findings to suggest how supportive economic policies can complement the existing Americans with Disabilities Act of 1990, which focuses on removing physical barriers to transportation such as installing curb ramps at public transit stops.

Citations

- Henly, M., & Brucker, D. L. (2019). Transportation patterns demonstrate inequalities in community participation for working-age Americans with disabilities. *Transportation research part A: policy and practice*, 130, 93-106.
- Páez, A., & Farber, S. (2012). Participation and desire: leisure activities among Canadian adults with disabilities. *Transportation*, 39(6), 1055-1078.
- Gris , E., Boisjoly, G., Maguire, M., & El-Geneidy, A. (2019). Elevating access: Comparing accessibility to jobs by public transport for individuals with and without a physical disability. *Transportation Research Part A: Policy and Practice*, 125, 280-293.
- Morris, E. A., Blumenberg, E., & Guerra, E. (2020). Does lacking a car put the brakes on activity participation? Private vehicle access and access to opportunities among low-income adults. *Transportation Research Part A: Policy and Practice*, 136, 375-397.
- Chen, C., & Mokhtarian, P. L. (2006). Tradeoffs between time allocations to maintenance activities/travel and discretionary activities/travel. *Transportation*, 33(3), 223-240.

Key Words: disability, transportation equity, travel behavior, intersectionality, poverty

TRIP GENERATION FOR MID-LONG-DISTANCE TRAVEL IN THE U.S. MEGAREGIONS

Abstract ID: 1740

Poster

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The U.S. transportation statistics show that long-distance travel (>50 miles one-way) took up less than one percent of total personal trips but accounted for more than a quarter of the total personal miles traveled (PMT). The large PMT share of long-distance travel attracts widespread research interest concerning transportation-related GHG emissions. This study focuses on a submarket of long-distance travel with trips in the distance range of 50 to 600 miles one-way, hence mid-long-distance (MLD) travel. MLD travel has about three-quarters of all long-distance travel. It takes place increasingly between cities in megaregions (a megaregion comprises multiple interconnected metropolitan areas and their interdependent rural hinterlands). Nevertheless, MLD travel has not been investigated adequately due to the

lack of data and surveys targeting this market segment. As personal travel range grows beyond individual metropolitan areas, so must the research efforts to better understand megaregional travel behavior. Specifically, this study examines trip generation behavior for MLD travel in the U.S. megaregions. The study derives an MLD data set of 82,357 observations from eight national travel surveys. The data set is then combined with a passively collected big data set from SafeGraph. Personal trip rates will be regressed against a set of socioeconomic and spatial variables and calibrated to the SafeGraph data set. Weekly and seasonal trip generation patterns will be examined to gain insights into trip generation behavior beyond the daily-travel analysis framework that has been prevailingly adopted for metropolitan transportation planning. The study's findings will help develop trip generation models targeting mid-long-distance travel, shed light on weekly and seasonal trip generation patterns, and inform transportation investments and policy deliberations on megaregional transportation planning.

Citations

- Aultman-Hall, L. (2018). Incorporating Long-Distance Travel into Transportation Planning in the United States. Prepared by the University of Vermont Transportation Research Center for the National Center for Sustainable Transportation.
- Jiao, J., Bhat, M. and Azimian, A. (2021). Measuring travel behavior in Houston, Texas with mobility data during the 2020 COVID-19 outbreak. *Transportation letters*, 13(5-6), pp.461-472.
- Kitamura, R. and Van Der Hoorn, T., 1987. Regularity and irreversibility of weekly travel behavior. *Transportation*, 14(3), pp.227-251.
- U.S. Department of Transportation, Federal Highway Administration. (1969, 1977, 1983, 1990, 1995, 2001, 2009, 2017). Nationwide Personal Transportation Survey/ National Household Travel Survey. Retrieved from <https://nhts.ornl.gov/>
- Zhang, L., Lu, Y., Ghader, S., Carrion, C., Asadabadi, A. and Yang, D., 2020. Person-Based Micro-Simulation Demand Model for National Long-Distance Travel in the USA. *Transportation Research Record*, 2674(6), pp.297-309.

Key Words: Trip generation, Mid-long-distance travel, NHTS/NPTS, Megaregions, Big data

EVALUATING THE EFFECTIVENESS OF EXISTING INFRASTRUCTURE FOR SEA LEVEL RISE FOR THE VULNERABLE POPULATION IN NORFOLK, VIRGINIA

Abstract ID: 1834

Poster

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Climate change and sea level rise pose great risks on the population living in coastal area. Although many mitigation strategies exist through the forms of infrastructure such as sea walls and levees (Sun, Chow, and Madanat 2021), a limited amount of studies is available that is investigating the effectiveness of such mitigation strategies, particularly for the vulnerable communities who are minority groups of people below the poverty line (Martinich et al. 2013).

The focus area of this study is Norfolk and Hampton Roads in Virginia. This study takes a mixed-method approach. First, using the data from FEMA's flood risk maps and ACS 5YR estimates in 2010 and 2020, the geographic gaps are identified between the protection areas of existing sea walls and the location of the impacted vulnerable communities from the sea level rise risks.

The research conducts a series of spatial analysis such as overlaying the layers of flood map, sea walls map, and vulnerable population map by using ArcGIS Pro. Throughout the decade, did the spatial pattern of the vulnerable populations change? Did the spatial coverage of flood zones expand? Did performance of existing sea walls increase by covering a wider range of the vulnerable population locations? Where are the potential locations in need of more infrastructure? Then, the analysis is expanded to incorporating an association with the port. Does installed infrastructure serve for the local population or industry purposes?

Finally, local needs for new infrastructure are identified by cross-checking these findings using a survey questionnaire. The surveys are electronically distributed to the local community groups. While the risk perceptions might not match with the estimated risks (Hutton and Allen 2021), the research findings could then be useful to bridge such a gap between perception and risks.

The objective of this study is to make a policy recommendation for infrastructure investment that better meet the local needs. Maps are to be used to demonstrate how equity-centered climate mitigation/adaptation strategies can improve.

Citations

- Hutton, Nicole S., and Thomas R. Allen. 2021. "Perceptions of Visual and in Situ Representations of Sea Level Rise and Tidal Flooding: The Blue Line Project, Norfolk, Virginia." *GeoJournal: Spatially Integrated Social Sciences and Humanities* 1–19. doi: 10.1007/s10708-020-10356-4.
- Martinich, Jeremy, James Neumann, Lindsay Ludwig, and Lesley Jantarasami. 2013. "Risks of Sea Level Rise to Disadvantaged Communities in the United States." *Mitigation and Adaptation Strategies for Global Change* 18(2):169–85. doi: 10.1007/s11027-011-9356-0.
- Sun, Jiayun, Aaron C. H. Chow, and Samer Michel Madanat. 2021. "Equity Concerns in Transportation Infrastructure Protection against Sea Level Rise." *Transport Policy* 100:81–88. doi: 10.1016/j.tranpol.2020.10.006.

Key Words: Sea level rise, Infrastructure gap, Vulnerable population, Norfolk

INCREASING THE USE AND EQUITY OF SHARED E-BIKES: THE CASE OF SACRAMENTO DOCKLESS E-BIKE SHARE

Abstract ID: 1861

Poster

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Many cities around the world have embraced bike-share systems in the last decade as an important mobility option that can help cities to achieve sustainability goals (Fishman et al., 2013; National Association of City Transportation Officials, 2020). Bike-share systems can also play a role in supporting rather than competing with transit by providing an option for the first or last leg of the transit trip (Mohiuddin, 2021; Oeschger et al., 2020; Shaheen & Chan, 2016). However, growing bike share demand while providing adequate access to the service for transport disadvantaged groups is a challenge for them. A necessary, although not sufficient, condition for bike-share to provide equity benefits is if the service is available to segments of the population who struggle to afford transportation and who cannot own or use a personal car.

In this study, our research question is "how can a city grow bike-share demand while addressing social equity?". We use both statistical modeling and market segmentation approaches to answer the question. We analyzed the influence of socio-demographic and other travel and mode-related factors on the initial adoption and continuous use of the service. We also segmented bike-share users based on their socio-demographics and mode use behavior, attitude towards different travel modes and their surrounding environment for biking, concern regarding different aspects of travel, and perception towards the bike-share service. The data for this analysis come from household and bike-share user surveys in the Sacramento region.

Our statistical modeling shows that although low-income individuals and students are less likely to use bike-share, they use it more frequently compared to others when they do use it. Individuals who regularly use multiple modes of travel also use the service frequently. The results indicate that the initial adoption of the service by the transport disadvantaged groups can play a vital role in the continuous frequent use of the service.

Our market segmentation of bike-share users shows that the use of the service is primarily driven by the need for transportation rather than attitudes regarding different modes and perceptions of bike-share. More positive perceptions of bike-share are weakly associated with more frequent use of the service. Rather, we found that low-income and zero-car individuals are using the service frequently for both commuting and a variety of non-commuting purposes even though that segment has a less positive attitude towards biking and a less positive perception of different service-related aspects of the bike-share system compared to others. Our market segmentation also shows occasional users of the bike-share service are mainly those with higher incomes and individuals who have access to a personal car. We found a market segment that consists of non- and infrequent-personal bike users who mostly have low incomes and no access to a personal car; however, that segment is using the bike-share service at a greater rate for different purposes compared to regular bicyclists. This suggests that bike-share may fill an important travel gap and act as an important lever for increasing bike travel for some users.

Our results suggest that if low-income individuals, students, and multi-modal travelers make up a higher share of the bike-share user base, greater environmental sustainability benefits would be achieved. These findings suggest that increases in demand and social equity can be achieved simultaneously, counter to the common strategy of concentrating bike-share service in areas with higher incomes to maximize demand. We provide six strategies for targeting different market segments for getting new users as well as increasing use by existing users. The findings from this study can be useful in efforts to achieve social equity in bike-share service operations.

Citations

- Fishman, E., Washington, S., Haworth, N., 2013. Bike Share: A Synthesis of the Literature. *Transp. Rev.* <https://doi.org/10.1080/01441647.2013.775612>
- National Association of City Transportation Officials, 2020. Shared Micromobility in the U.S.: 2019 [WWW Document]. URL <https://nacto.org/shared-micromobility-2019/> (accessed 10.11.20).
- Mohiuddin, H., 2021. Planning for the first and last mile: A review of practices at selected transit agencies in the United States. *Sustain.* 13, 1–19. <https://doi.org/10.3390/su13042222>
- Oeschger, G., Carroll, P., Caulfield, B., 2020. Micromobility and public transport integration: The current state of knowledge. *Transp. Res. Part D Transp. Environ.* 89. <https://doi.org/10.1016/j.trd.2020.102628>
- Shaheen, S., Chan, N., 2016. Mobility and the sharing economy: Potential to facilitate the first-and last-mile public transit connections. *Built Environ.* 42, 573–588. <https://doi.org/10.2148/benv.42.4.573>

Key Words: Bike-share, Transportation Equity, Market Segmentation, Statistical Modeling, Multimodal Transport User

DESIGNING INCLUSIVE PEDESTRIAN TRAVEL SURVEYS BY UTILIZING SMARTPHONE-BASED DATA COLLECTION

Abstract ID: 1926

Poster

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The continuous increase of planning interventions and investments in the transport system to promote healthy, sustainable, and inclusive communities requires municipalities and planning agencies to obtain better tools, more clear and comprehensive travel data (Dean, et al., 2020). While motorized travel among people of color and immigrant groups is well defined and represented in transportation planning strategies, marginalized groups who rely on alternative modes (including carpools, transit, walking, and cycling) remain understudied (Smart, 2015). Traditional data collection and survey techniques rely heavily on respondents' memory which causes a high response burden. Beyond the challenges of high labor costs in traditional travel survey methods, a recent study in Portland-area finds that marginalized groups also face barriers of personal privacy concerns (Lubitow et al., 2019). Portland's study finds that one-day travel data is not able to fully capture the travel behaviors of the marginalized groups included in their study. In addition, walking trips and activities, specifically, are underreported and less frequently represented in conventional travel surveys. Novel data collection methods such as smartphone-based efforts including smartphone-based GPS, Bluetooth, and Wi-Fi detection have been explored to collect better quality of travel data. However, there is substantial evidence that high non-response rates have long been a challenge to obtain quality data on walking trips (Harding et al., 2018). Thus, transportation planners and researchers are eager to obtain more inclusive and comprehensive travel data to evaluate the related interventions and policies.

This study presents the result of a travel data collection survey done in the Region of Waterloo-area that includes both GPS trajectory data passively gathered from smartphones and socio-economic information collected from an online survey. This study aims to capture the short walking trips and improve the response rate by reducing the response burden of the respondents. The effort includes multi-day smartphone-based GPS travel data collection (covering two weekdays and two weekends) to capture an individual's entire travel patterns. This study concludes that comprehensive multi-day travel data can capture an individual's habit-related travel behavior such as walking route choice and pedestrian activity destinations. Short walking trips can be more easily captured by using a smartphone-based passive data collection method. The community-based recruitment method, privacy protection techniques in travel survey design, and clear user interface app design can improve the response rate of all respondent groups. The passive data collection method can be applied to different cities and communities to gather more complete and comprehensive travel data, especially the short walking trips. With these comprehensive travel data, investments and policies toward inclusive and multimodal transportation systems can be better evaluated.

Citations

- Dean, J., Biglieri, S., Drescher, M., Garnett, A., Glover, T., & Casello, J. (2020). Thinking relationally about built environments and walkability: A study of adult walking behavior in Waterloo, Ontario. *Health & Place*, 64, 102352.
- Harding, C., Nasterska, M., Dianat, L., & Miller, E. J. (2018). Effect of land use and survey design on trip underreporting in Montreal and Toronto's regional surveys. *European Journal of Transport and Infrastructure Research*, 18(1).
- Lubitow, A., Liévanos, R., McGee, J., & Carpenter, E. (2019). Developing Data, Models, and Tools to Enhance Transportation Equity.
- Smart, M. J. (2015). A nationwide look at the immigrant neighborhood effect on travel mode choice. *Transportation*, 42(1), 189-209.

Key Words: Smartphone-based data collection, Inclusive travel, multiday travel survey, passive data collection

UNDERSTANDING CHANGES IN COMMUTING TO CAMPUS AMID AND AFTER COVID-19: INSIGHTS FROM THE 2019 THROUGH 2021 UC DAVIS CAMPUS TRAVEL SURVEY

Abstract ID: 1935

Poster

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As the pandemic phase of COVID-19 continues to recede in North America, researchers are beginning to better understand the pandemic's long-term effects on travel behavior and associated impacts on transportation networks. Less well understood is how pandemic-driven changes in travel mode and frequency affect employer-based efforts at transportation demand management aimed at reducing VMT and meeting climate goals. The transportation management department of our university funds an annual survey of staff, faculty, and students who regularly commute to the main campus in order to better understand transportation demand and influence its transportation demand management including parking policies, transit subsidies, and provision of bicycling infrastructure. This survey, conducted annually for over ten years, now includes rich information on travel for 2019, 2020, and 2021, spanning the timeframe before, during, and after the shift to remote campus operations amid the pandemic. Taken together, these datasets offer a rich understanding at how the pandemic influenced rates of driving, cycling, and public transit utilization in one of the most cycling-friendly locations in the United States.

Emerging survey data (Buehler & Pucher, 2021; Schaefer et al., 2021) shows that the COVID-19 pandemic had led to increases in rates of both cycling and single-occupant car commuting, and decreases in public transit use. Pre-pandemic commuting patterns at other universities has found a tendency toward car commuting even in locations with robust transit and non-motorized travel opportunities (Eluru et al., 2012). Our survey data allows for an understanding of how COVID-related changes in travel are mirrored (or not) in the context of a large university employer. Preliminary findings show that while the rate of car commuting to our campus increased dramatically during the 2020 schoolyear, rates of cycling remained high even as public transportation use cratered. More recent data from the 2021 schoolyear indicate that while public transportation use has recovered somewhat, rates of car commuting remain far above their pre-pandemic levels.

If campuses around the world hope to meet their ambitious carbon pollution reduction goals, the cumulative effects of staff, faculty, and students travelling to campus cannot be ignored. While the rapid adoption of remote work has presented an opportunity to reduce commute frequency for some, the sustained rise in the share of commute trips made by car is concerning for our post-pandemic future. Through analysis of the travel behavior of our campus community before, during, and after COVID-related shutdowns, we hope to provide insight for managing transportation demand at other large campuses and employers who can affect policies that support cycling, transit, and non-motorized commute choices.

Citations

- Buehler, R., & Pucher, J. (2021). COVID-19 Impacts on Cycling, 2019–2020. *Transport Reviews*, 41(4), 393–400. <https://doi.org/10.1080/01441647.2021.1914900>
- Eluru, N., Chakour, V., & El-Geneidy, A. M. (2012). Travel mode choice and transit route choice behavior in Montreal: Insights from McGill University members commute patterns. *Public Transport*, 4(2), 129–149. <https://doi.org/10.1007/s12469-012-0056-2>
- Schaefer, K. J., Tuitjer, L., & Levin-Keitel, M. (2021). Transport disrupted – Substituting public transport by bike or car under Covid 19. *Transportation Research Part A: Policy and Practice*, 153, 202–217. <https://doi.org/10.1016/j.tra.2021.09.002>

Key Words: pandemic, demand, survey, commute, cycling

IMPACTS OF DEMAND RESPONSIVE TRANSPORT (DRT) SERVICES ON TRAFFIC CRASHES – A CASE STUDY OF AUSTIN, TX

Abstract ID: 1946

Poster

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Demand responsive transport (DRT) services use real-time data to provide ridesharing options to their users, who share their trips with similar origins and destinations and improve their trip reliability by reducing travel time and costs. DRT services are widely popular in the United States and many other countries around the world. Due to the advancement in technology, especially the increasing access to the internet, DRT services rapidly grew in the past and are projected to continue the uptrend in the near future. These services offer a large number of affordable trips to their riders on a daily basis and thus make a sizable share of traffic on the roads. The impacts of ridesharing services on travel patterns, congestion, and the environment have been extensively analyzed in empirical studies. However, their effect on traffic crashes has gained little attention, if not none. The existing literature on the safety impacts of various transportation services mainly focused on the impacts of availability of a service such as the ridesharing services in an area; however, we argue that the existence of a ridesharing service may not guarantee either a positive or a negative impact on traffic crashes. Rather it is the actual rate of usage of a service that has the potential to make a significant difference.

This study intends to investigate the impacts of ridesharing services on traffic crashes and injuries. We use data from RideAustin, a ridesharing service operated in Austin, TX, as our case study. We use the difference-in-difference approach to examine how the rates of ridership for RideAustin affect traffic crashes in the city at the Census block group level while controlling for sociodemographic and built-environment characteristics. In this study, we obtained data from two main sources, (1) trip level data from RideAustin, which contains the details of about 1.5 million trips from 2016 to 2017, (2) traffic crash and injury data from the Texas Department of Transportation (TXDOT)'s Crash Record Information System (CRIS) database in the period of 2012-2020 with about 373,000 crashes.

The results of our difference-in-difference models show that there is no statistically significant difference in the number of traffic crashes in the block groups with very low ridership of RideAustin, while significant and negative impacts of the service on traffic crashes are found in the block groups with high ridership rates. These findings will help to achieve a better understanding of the safety impacts of DRT services, thus enabling transportation planners and stakeholders to make appropriate policies and decisions to reduce the number of crashes in urban areas.

Citations

- Barreto, Y., R. da M. Silveira Neto, and L. Carazza. 2021. "Uber and traffic safety: Evidence from Brazilian cities." *J. Urban Econ.*, 123: 103347. Academic Press. <https://doi.org/10.1016/J.JUE.2021.103347>
- Barrios, J. M., Y. V. Hochberg, and H. (Livia) Yi. 2019. *The Cost of Convenience: Ridesharing and Traffic Fatalities*. SSRN Scholarly Paper. Rochester, NY: Social Science Research Network
- Brazil, N., and D. S. Kirk. 2016. "Uber and metropolitan traffic fatalities in the United States." *Am. J. Epidemiol.*, 184 (3): 192–198. Oxford University Press.
- Morrison, C. N., S. F. Jacoby, B. Dong, M. K. Delgado, and D. J. Wiebe. 2018. "Ridesharing and motor vehicle crashes in 4 US cities: An interrupted time-series analysis." *Am. J. Epidemiol.*, 187 (2): 224–232. <https://doi.org/10.1093/aje/kwx233>

Key Words: Traffic Crashes, Traffic Injuries, Difference-in-Difference analysis, Traffic Safety, Demand Responsive Transport

Track 15 - Urban Design

Track 15 Pre-Organized Session Summaries and Abstracts for the Sessions

URBAN DESIGN IN THE STREET: AN EXPLORATION OF STREET DESIGN AND ENGAGING THE STREET AS A PUBLIC SPACE

Pre-Organized Session 13 - Summary

Session Includes 1339, 1340, 1341, 1342, 1343

GREGG, Kelly [University at Buffalo, SUNY] kgregg@buffalo.edu, organizer

In 2005 Michael Hebbert highlighted the need for urban design practice and scholarship to critically challenge street design and engage what has historically been the territory of engineering. While there have been noteworthy gains in street design since, the last few years have been exceptionally productive. This is especially true with the coronavirus pandemic upending our understandings and uses of streets and the processes behind implementation (Gregg, Hess, Brody & James, 2022; Mehta, 2020). This session brings together research that engages street and parking design from an urban design and public space perspective. Counter to the traffic engineering approach that typically prioritizes the efficiency of automobile movement and parking, street design from an urban design approach recognizes and promotes a broader spectrum of goals and opportunities for the use of the public street right-of-way. This perspective prioritizes the use of automobile oriented space for pedestrians, cyclists, and social engagement. Each paper in this session highlights the overlapping ideas of urban design and the exploration streets and parking areas as a public space.

Objectives:

- To engage and understand a variety of perspectives about streets as public spaces.

PARKING LOTS AS 'THIRD SPACES' – EXAMINING CULTURAL PLACEMAKING IN EMPLOYMENT LANDS IN THE GREATER TORONTO AREA

Abstract ID: 1339

Abstract within Pre-Organized Session 13

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Large swaths of suburban lands in the Greater Toronto Area (GTA) consist of banal low-rise office buildings, warehouses, and strip malls surrounded by expansive parking lots. These lands are zoned for light-industrial and commercial uses – colloquially termed 'employment lands.' Upon a closer look, these seemingly dull spaces are home to some of the most vibrant ethno-cultural spaces within the GTA. Due to the lack of formal public spaces within urban cores that support and accommodate immigrant cultural practices, and the increasing unaffordability of land coupled with zoning regulations, 'ethnic entrepreneurs' have set up businesses in these employment lands which are now home to clusters of parking lots surrounded by ethnic restaurants, attire shops, faith-based spaces, and event spaces – all important places of gathering, shopping, and celebration for immigrant communities (Basu & Fiedler, 2017; Zhuang, 2019). With arterials streets devoted to fast-moving traffic, these parking lots become sites of extended 'third spaces' that might take place on the streets and sidewalks of more central, urban districts, especially for immigrant communities. They promote interaction and contribute to a sense of 'belonging', provide opportunities for leisure and joy, facilitate individual and collective expression, and point to a form of everyday resistance to the expectations of assimilation into the local dominant culture through the claiming of space (Main & Sandoval, 2015; Rishbeth & Powell, 2013; Yuen & Johnson, 2017; Zhuang, 2019).

Despite these sites being integral to the cultural lives of immigrant communities, they are either unacknowledged or unwelcomed as important parts of employment areas by planners. They also remain under-researched. This paper focuses on identifying the critical role that these parking lots play as public spaces that support the socio-cultural lives of immigrant communities. It asks: How do immigrant communities participate in formal and informal place-making practices in employment lands in the GTA, and how do these practices differ from the formal conceptions of these spaces by urban planners? We address these questions through a series of mixed methods, including: 1) semi-structured interviews with business owners in employment lands to understand the barriers and benefits of locating their businesses in these areas and how they use parking lot spaces for various spillover activities, 2) interviews with

urban planners involved in the creation and revision of zoning policies affecting employment lands to understand their conception of these spaces, 3) site-observations of these spaces during various festivals to observe place-making practices, and 4) discourse analysis of planning regulations affecting these parking lots to understand any formal restrictions on the uses of these lots. Initial findings indicate that during festivals and other celebrations, the parking lots serve as sites for spillover activities – they are places where restaurants set up tents to sell sweets, where visitors mingle, shop, and eat, and where the processional elements of festivals leading up to faith-based spaces take place. However, planning regulations do not yet identify these places as important sites for cultural place-making – per zoning regulations, these sites purely serve the commercial and light-industrial needs of urban populations. Through focusing on acts of place-making by immigrant communities, this paper aims to recognize and learn from community-based place-making knowledge and thus, produce inspiration for postcolonial, formal spatial planning and design practices. By exploring how ethnic businesses and communities informally adapt parking lot spaces during celebrations, this paper aims to contribute to the scholarly literature on ethnic place-making and multicultural planning by decentering the colonial narratives around cultural heritage and planning and providing recommendations that focus on designing and planning for cultural activities of minority ethno-cultural groups within the GTA.

Citations

- Basu, R., & Fiedler, R. S. (2017). Integrative multiplicity through suburban realities: Exploring diversity through public spaces in Scarborough. *Urban Geography*, 38(1), 25–46. <https://doi.org/10.1080/02723638.2016.1139864>
- Main, K., & Sandoval, G. F. (2015). Placemaking in a translocal receiving community: The relevance of place to identity and agency. *Urban Studies*, 52(1), 71–86. <https://doi.org/10.1177/0042098014522720>
- Rishbeth, C., & Powell, M. (2013). Place Attachment and Memory: Landscapes of Belonging as Experienced Post-migration. *Landscape Research*, 38(2), 160–178. <https://doi.org/10.1080/01426397.2011.642344>
- Yuen, F., & Johnson, A. J. (2017). Leisure Spaces, Community, and Third Places. *Leisure Sciences*, 39(3), 295–303. <https://doi.org/10.1080/01490400.2016.1165638>
- Zhuang, Z. C. (2019). Ethnic Entrepreneurship and Placemaking in Toronto's Ethnic Retail Neighbourhoods. *Tijdschrift Voor Economische En Sociale Geografie*, 110(5), 520–537. <https://doi.org/10.1111/tesg.12383>

Key Words: public space, parking lots, suburbs, cultural place-making, immigrant communities

STREET TRANSFORMATION AND THE CHALLENGE OF PUBLICNESS

Abstract ID: 1340

Abstract within Pre-Organized Session 13

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The transformation of public space, because of the pandemic, is glaringly visible in cities. There is perhaps no better place to experience this transformation than on public streets, especially main streets and others with adjoining commercial uses. During the pandemic, several cities transformed their streets to become more pedestrian-friendly by embracing numerous approaches, such as slow streets, shared streets, play streets, and the like (Mehta, 2021). Many are continuing to keep the makeshift modifications or make them permanent. These transformations of streets have been done by altering the many different parts of the street. Most notable are on-street parking spaces or space on sidewalks converted to streateries or other sitting space, widening of sidewalks, slowing streets with raised crosswalks, speedbumps and other means, and in some cases closing the street to all motorized vehicles. Transformations also include new or additional bike lanes, bike parking, and other bike infrastructure. Viewed collectively, these changes can be understood as favoring the street to the pedestrian public, bicyclists, and people using non-motorized modes. However, when examined in detail these changes can reveal if the transformations favor certain publics over others. In this paper, we closely examine the transformation of all the streets in Over-The-Rhine neighborhood in Cincinnati, OH to assess the changes in publicness from the time before the pandemic to the present.

The substantive transformation within a short time provides researchers with unique opportunities for a longitudinal study. To document the changes to the publicness of the streets we created a detailed taxonomy. We documented all the non-residential streets in Over-The-Rhine before the pandemic and twice during the pandemic – summer 2020 when temporary changes were made, and finally in the summer and fall of 2021 when most of the changes were made permanent. We conducted systematic walk-throughs to document the physical conditions and the modifications made over these three times. We recorded the modifications using Google Maps and by taking photographs of each instance of modification.

A total of 63 different modifications were made to the streets of Over-The-Rhine. We systematically categorized these into the following based on the changing publicness of the street.

- Limited public space to more public space (e.g. street changed to slow street)
- Limited public space to more public space (e.g. vehicular lane to bike lane)
- Ticketed public space to public space (e.g. parking spot/s to parklet or linear park)
- Public space to ticketed public space (e.g. sidewalk space to restaurant seating)
- Ticketed public space to ticketed public space (e.g. parking spot/s to restaurant seating)
- Limited public space to ticketed public space (e.g. vehicular street changed to full street for restaurant seating)

We found that except for the raised crosswalks, four widened sidewalks with public benches and four pedestrian-only streets, all other locations cater to an aesthetic, expect a certain decorum, and require the purchase of food, a majority of which falls under high-end dining often requiring reservations. Our detailed findings suggest that although the streets of Over-The-Rhine have been transformed to become pedestrian-friendly and lively, there is a distinct loss of publicness. Although the pre-pandemic streets were not as friendly to pedestrians the public realm was more public (Madanipour, 1996) and open to people of all socio-economic status and outlooks.

Streets are the last remaining open public spaces where a diversity of people, actions, and identities—what Davis (1990, 231) calls “democratic admixture”—are represented. The pandemic transformations are collectively altering the public realm, particularly in neighborhoods where changes are concentrated. Planners, policy makers and urban designers must be innovative in making these changes such that public space continues to belong to the multiple publics within the city.

Citations

- Davis, M. (1990). *City of Quartz: Excavating the Future in Los Angeles*. London: Verso.
- Madanipour, A. 1996. *Design of Urban Space*. New York: Wiley.
- Mehta, V. (2021). Public Space and COVID-19: Contraction, Expansion, and Adaptation. *Journal of Public Space*, 5(3), 15-22.

Key Words: public space, street, COVID-19 pandemic, inclusive, publicness

THE FUTURE OF COVID-19-INTIATED STREET TRANSFORMATIONS: THE DESIGN, EQUITY, AND PUBLIC SPACE IMPLICATIONS OF STREET CAFÉ PROGRAMS

Abstract ID: 1341

Abstract within Pre-Organized Session 13

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Using case studies in five North American cities, this paper examines street café programs implemented during COVID-19 that reallocate street space from parking and vehicle use into restaurant zones. The paper explores: the design of interventions; the institutional processes and goals of programs and how they are evolving; the debates for their continuance or permanence; and the kinds of social equity concerns they raise including the urban social geography of where they occur and the publicness of the streets on which they are located.

Street cafés implemented during the COVID-19 pandemic represent an acceleration of the types of public street transformations reallocating space for motor vehicles into new spaces for use by pedestrians and cyclists that have been taking place in North American cities across at least two decades (Hess, Gregg, and Whitney, 2019). These strategies were quickly adapted, extended, and expanded with the pandemic as an emergency response to the need for physical distancing, and they potentially have far reaching impacts on public space (Honey-Rosés et al., n.d.). In some ways, COVID-related transformations reversed conventional understandings of public space as fostering social gathering (Gregg, et al., in-press). Instead, program goals were to allow essential workers to avoid transit, to create opportunities for socially distanced outdoor recreation, and to support the economic activity of restaurants. Implementation, however, has been very rapid and without the planning, public engagement, and permitting processes that were conventional before the pandemic. Now, two years since the beginning of the pandemic, cities have been reassessing these street interventions. Some cities are no longer pursuing them (Schmidt, 2022), and others are moving towards making what had been largely ad hoc, emergency installations into permanent ones.

This paper focuses on street cafés as one of the most profound pandemic-related transformations of urban public streets, with some cities allowing thousands of cafés where they would not have previously been allowed. These cafés have been popular but have also generated controversy in terms of their impacts on parking, street use, and surrounding neighborhood quality of life. To explore their implications, the research develops case studies in five cities chosen for their different geographic and institutional contexts: Seattle, Los Angeles, Chicago, Toronto, and New York. All have robust street café programs that have either been made permanent or are in the process of being so.

Methods include a policy review, key informant interviews with elected officials, municipal planners, local business

groups, and design and consulting firms. Where possible, local neighborhood associations are also being consulted. Initial findings include that the cities first used different approaches that are now converging. Toronto, for example, rapidly developed a program using controlled, tactical implementations, creating seasonal cafés with light materials, but New York's program was far less codified and controlled, creating substantial, year-round, enclosed "COVID-sheds." As the programs move toward permanence, Toronto is requiring up-graded designs and materials, and New York is requiring much more controlled, open-air cafés more like Toronto's. Equity issues vary substantially across cities. For example, Los Angeles engaged community organizations to promote installations in more marginalized areas, but Seattle worked through business improvement associations, creating large differentials in capacity. While initially a response to economically support restaurants and their workers, the longer-term goals and purposes of the programs are not fully articulated, and whether they may represent a new kind of privatization of public streets has received little discussion. Although representing a substantial change to public street design and the use of public space, these ongoing issues are linked to how programs were initiated as part of an emergency response and were not part of a considered planning process.

Citations

- Hess, P., Gregg, K., & Whitney, R. (2019). Modernism, Pedestrians, and Public Space. In T. Banerjee & A. Loukaitou-Sideris (Eds.), *Modernism, Pedestrians, and Public Space* (pp. 612–623). Routledge Handbooks Online. <https://doi.org/10.4324/9780203731932-61>
- Honey-Rosés, J., Anguelovski, I., Chireh, V. K., Daher, C., Konijnendijk van den Bosch, C., Litt, J. S., Mawani, V., McCall, M. K., Orellana, A., Oscilowicz, E., Sánchez, U., Senbel, M., Tan, X., Villagomez, E., Zapata, O., & Nieuwenhuijsen, M. J. (2020). The impact of COVID-19 on public space: An early review of the emerging questions - design, perceptions and inequities. *Cities & Health*, ahead-of-print, 1–17. <https://doi.org/10.1080/23748834.2020.1780074>
- Gregg, K.; Hess, P.; Brody, J.; and James, A. (in-press) North American Street Design for the Coronavirus Pandemic: a typology of emerging interventions. *Journal of Urbanism*.
- Stephan Schmidt. (2022). "What the Pandemic's 'Open Streets' Really Revealed." Bloomberg City Lab. Jan. 3. <https://www.bloomberg.com/news/articles/2022-01-03/the-unequal-geography-of-covid-s-open-streets>

Key Words: Street Design, Public Space, Street Cafes, COVID-19 impacts, Tactical Planning

FRESNO'S FULTON STREET – FROM A PEDESTRIAN MALL TO A COMPLETE STREET: A CRITICAL ANALYSIS OF HOW FEDERAL FUNDING DRIVES STREET DESIGN AND URBAN DESIGN DECISIONS

Abstract ID: 1342

Abstract within Pre-Organized Session 13

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Fresno's Fulton Street Pedestrian Mall, like many post-war pedestrian malls from the twentieth century, struggled to maintain a lively retail environment. The pedestrian mall was plagued with high ground floor vacancy rates long before the street was redesigned. In the fall of 2017, the street redesign was completed and the long standing and originally award-winning pedestrian mall was reopened to automobile traffic. The plans for redesigning the street conceptually aligned with a complete streets strategy and the implementation was funded by a federal US Department of Transportation TIGER Grant. Broadly aligning with the complete streets concept of safely accommodating all modes and users of the street right-of-way, the TIGER Grant mandated that the street redesign also include automobile traffic (Sheehan, 2016). The city and downtown boosters touted that the street redesign as the cornerstone for the renaissance of downtown Fresno (Rodriguez-Delgado, 2017). This celebration and heightened expectation was not unlike the original opening of the pedestrian mall in 1964 (Wall, 2005). Just as federal urban renewal dollars favored building pedestrian mall projects in the post-war (Gruen, 1966), the federal TIGER grant used to renovate Fulton Street favored a complete street design concept. However, just as the pedestrian mall did not fully deliver the revitalized retail environment that was hoped for in the 1960s, the contemporary complete street redesign, at-least initially, has not realized impacts that were expected for the Fulton Street redesign.

Using Fresno's Fulton Street as a case study, this research critically questions the role of federal funding in shaping and driving street and urban design decisions in the US and the limitations of this funding to fully address the needs. These projects are multi-dimensional and complex however, we question the influence and impacts of federal funding in driving planning and design decisions. These findings can be applicable to other cities that are exploring the use of federal funds for project development. Our initial expert interviews, archival research, and policy analysis suggests the expectations of the street redesign were much more than what has been currently realized with the complete street redesign. There has also been a misalignment with the funding and the needs as there have been ongoing challenges with attracting ground floor tenants specifically on Fulton Street and with reinvestment by the building owners. This leads to questions about the impact and efficacy of the street design and if it can meet the intended

outcomes.

Citations

- Associates, Victor Gruen (Writer). (1966). Fresno: A City Reborn. In V. G. Associates (Producer).
- Pérez, D. (2018). Fresno, California's new downtown: Visualizing policy through anthropology. *Harvard Journal of Hispanic Policy*, 30, 17-20.
- Rodriguez-Delgado, Cresencio. (2017, October 22). Reopening of Fulton Street draws crowd to downtown, *Fresno Bee*, p. A1.
- Sheehan, Tim. (2016, October 18). Fresno on verge of new plans to guide downtown development, *Fresno Bee*, p. 1.
- Wall, Alex. (2005) Victor Gruen?: from Urban Shop to New City. Actar.

Key Words: pedestrian malls, complete streets, street design, pedestrian streets

'SLOW YOUR ROLL': AN EQUITY-BASED ANALYSIS OF TORONTO AND LOS ANGELES' SLOW STREET PROGRAMS

Abstract ID: 1343

Abstract within Pre-Organized Session 13

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Using Toronto and Los Angeles (LA) as case studies, this paper examines 'slow street' programs implemented during the COVID-19 pandemic ("the pandemic"), which transformed sections of streets into shared spaces for motor vehicles, pedestrians, cyclists, and all other users of the space. This paper aims to explore both cities' 'slow street' programs, including how they defined, considered, and implemented equity and ultimately, how their experiences are being incorporated into future street design and planning.

With the introduction of physical distancing measures and altered mobility during the pandemic, street design became a part of the frontline response. The lull in motor vehicle traffic presented an increased demand for active transportation (Federation of Canadian Municipalities, 2020) with cities realizing that the pandemic could permanently change street design and provide the foundation for recovery for several years (NACTO, 2020). As a result, partial street closures (including 'slow streets') that supported walking and cycling accounted for 11% of policies and programs that responded to this altered mobility (Combs & Pardo, 2021). However, as slow streets were implemented rapidly and bypassed traditional community engagement consultation processes, concerns emerged as to whether they negatively impacted community trust and mimicked racist urban planning practices of the past (Thomas, 2020). Equity concerns were thus at the forefront of 'slow street' programs as marginalized communities often felt ignored as cities carried out these programs. As the pandemic has shifted perceptions about streets, it has presented a critical chance to evaluate 'slow streets' and observe how equity can be further embedded into street design.

Methods used in this paper include a literature review of previous street design initiatives pre- and post-COVID-19, a document analysis of city-published documents, key informant interviews with municipal planners, and mapping slow street implementations against neighbourhood social data using GIS. The initial findings paint a picture of a street design initiative that struggled to find its footing. 'Slow streets' in the two cities drew upon similar, existing street design concepts (e.g., shared spaces, woonerfs, traffic calming, and complete streets), but Toronto and LA's 'slow street' programs had different goals, geared towards creating mobility and access and creating recreational space, respectively. They were truly a pandemic initiative but do present lessons about street design in the face of emergency or piloting. Toronto's 'slow street' program has since ended but lives on in the form of active transportation, complete street, and traffic calming programs; LA's program is moving into a second phase but has since been viewed as a primer to test traffic calming countermeasures.

While both cities used very similar equity indicators (identified as access to green space, population density, and median household income), racial equity – which can be a large source of tension – was ignored. Additionally, 'slow streets' were typically pushed towards local streets rather than arterial streets, raising the question of whether these programs reached their intended purpose and targeted population. The experiences of these programs demonstrated that community engagement plays a large role in ensuring equity and while 'slow streets' were pandemic initiatives, the experience points toward the need to build relationships on the ground to build resiliency based on community need.

Citations

- Federation of Canadian Municipalities. (2020). COVID-19 Street Rebalancing Guide. Resource document. <https://data.fcm.ca/documents/COVID-19/COVID-19-Street-Rebalancing-Guide-EN.pdf>.
- NACTO. (2020). Streets for Pandemic Response and Recovery. Resource document. https://nacto.org/wp-content/uploads/2020/09/Streets_for_Pandemic_Response_Recovery_Full_20-09-24.pdf.
- Combs, T.S., Pardo, C.F., 2021. Shifting streets COVID-19 mobility data: findings from a global dataset and a research agenda for transport planning and policy. *Transport. Res. Interdisciplinary Perspect.* 9, 100322. <https://doi.org/10.1016/j.trip.2021.100322>.
- Thomas, D. (2020, June 8). 'Safe Streets' Are Not Safe for Black Lives. Bloomberg CityLab. <https://www.bloomberg.com/news/articles/2020-06-08/-safe-streets-are-not-safe-for-black-lives>.

Key Words: Street Design, Slow Streets, COVID-19 Impacts, Equity, Community Engagement

Track 15 Individual Paper Submissions

TRANSCENDING PUBLIC-PRIVATE BOUNDARIES: THE DUALITY OF DISCRETIONARY DESIGN REVIEW

Abstract ID: 1053

Individual Paper Submission

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National planning policy in Scotland increasingly embraces the potential of urban design for shaping wider environmental, health, social, and economic outcomes. However, delivering design aspirations has proven challenging for local planning authorities within an austerity-hit and increasingly privatised discretionary planning system. West Dunbartonshire Council, a small local authority within a post-industrial area bordering Glasgow, has responded with a strategic investment in its 'design governance' capacity. This includes establishing a discretionary design review panel, called the Place and Design Panel, which advises on early development and policy proposals. The Place and Design Panel's voluntary membership is drawn from public and private actors working across the built environment professions, and the Panel particularly mobilises market-oriented skills and networks to influence design proposals. It therefore utilises the blurred public-private boundaries that characterise the field of urban design, where private consultants routinely work for planning authorities and private developers simultaneously. While the Place and Design Panel enhances West Dunbartonshire Council's capacity to influence urban design outcomes, an increasing reliance on private actors raises critical questions over the balance of power within local 'design governance'. This paper therefore addresses two research questions: 1) How can Scottish local planning authorities influence the urban design quality of new development? 2) How are the relationships between public and private actors shaping the local delivery of urban design?

This paper presents research from a collaborative ESRC doctoral studentship, based on a case study of 'design governance' in West Dunbartonshire. Data collection was conducted firstly through 42 semi-structured interviews, with stakeholders including public and private sector planners, volunteer members of the Place and Design Panel, developers, private consultants, and local politicians. Interviews were fully transcribed and coded, and a thematic analysis was carried out. This was supplemented with archival work using documents including planning records and committee reports, and local and national policy.

Drawing on Lipsky's conceptualisation of 'street-level bureaucracy', this paper argues that voluntary members of West Dunbartonshire Council's Place and Design Panel are novel stakeholders with significant discretion over the delivery of local authority urban design services. The Panellists often hold private motivations which transcend public-private distinctions, and their growing influence reflects a broader valorisation of private sector expertise within planning in the UK. This increasingly blurred public-private boundary is reshaping interpretations of key planning values, including notions of 'good design' and how it may serve the 'public interest', in line with the viability-driven priorities of private developers. However, the paper also identifies that West Dunbartonshire Council has harnessed market-oriented skills and networks to its advantage through the soft power exercised by its Place and Design Panel, demonstrating an inherent duality within discretionary design review practices.

This paper's findings reveal the significance of market networks to the negotiation of urban design within Scotland's discretionary planning system, where micro-level relationships between local authority planners and private consultants are deepening. Greater understanding is needed of how key planning and design values are being renegotiated alongside a growing emphasis on private sector capacity, particularly as private consultants work for local authorities and private developers simultaneously. As the role of the state within 'design governance' in the UK continues to evolve under forces of neoliberalisation and privatisation, interest in entrepreneurial governance

practices such as discretionary design review panels is likely to grow. Their informality compared to conventional subcontracting practices means further research should focus on how they influence design decisions, and whose interests are served. The duality that characterises discretionary design review panels means that while they are attractive to resource-starved local authorities, their impact on the long-term balance of power between actors within the planning system may be significant.

Citations

- Linovski, O. (2016). Politics of expertise: Constructing professional design knowledge in the public and private sectors. *Journal of Planning Education and Research*, 36, 451–464.
- Carmona, M. (2016). Design governance: theorizing an urban design sub-field. *Journal of Urban Design*, 21, 6, 705–730.
- Parker, G., Street, E., Wargent, M., (2018). The rise of the private sector in fragmentary planning in England. *Planning Theory and Practice*, 19, 734–750.
- Linovski, O. (2019). Shifting agendas: Private consultants and public planning policy. *Urban Affairs Review*, 55, 1666–1701.
- Richardson, R., and White, J. T. (2021). Design Governance, Austerity and the Public Interest: Planning and the Delivery of ‘Well-Designed Places’ in West Dunbartonshire, Scotland. *Planning Theory and Practice*, 22, 4, 572–594.

Key Words: Urban design, Design governance, Consultants, Privatisation, Neoliberalisation

THE JUST PARK: PROGRAMMING PUBLIC SPACES FOR HEALING AND RECUPERATION

Abstract ID: 1091

Individual Paper Submission

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The early days of the pandemic highlighted the historical and enduring roles of parks and public spaces within urban landscapes (Honey-Rosés et al., 2020; Yerena & Casas, 2021). Likewise, parks have also played a vital role in the creation and maintenance of democratic societies (Rosenfield 1989). Separate strands of interdisciplinary scholarship (i.e., sociology, planning, urban design, landscape architecture, anthropology, rhetoric, public health) have borne these assertions out. In this project, we seek to bring these strands together in arguing that, as we move further into the 21st century, well-designed and intentionally programmed parks can be more effectively leveraged to promote a comprehensive urban sustainability.

Parks that promote a comprehensive urban sustainability are parks that offer sites of recreation and which promote health and wellbeing—and which also show up as sites for connection, inclusion, and social healing. Per Cranz (1989), “each historical model [for parks] is intended to solve a specific social problem...as societal problems evolve, the purpose of parks will evolve, and their design will be adjusted.” For Cranz, we are at the cusp of introducing a sixth model following the “sustainable park.”

Here we attempt to articulate and propose a sixth model for urban parks, one which goes beyond promoting sustainability in the face of climate change to one that fosters healing and recuperation among individuals and communities who have borne the brunt of injustice in its multiple forms. The sixth model centers environmental justice and equity in recognition that parks are and always have been social and political constructs that reflect and shape social values. Thus, the social problems cities face now can be partly solved through better designed parks that are continuously programmed to promote social change. We argue that existing and proposed urban parks in the U.S. have a vital role to play in the remedies cities are seeking as they continue to face complex and interrelated challenges related to public health, the ongoing legacies of racism, and the destructive impacts of neoliberalization.

Our arguments premise research conducted in Tacoma, Washington, in 2020–2021. Tacoma residents are meant to enjoy nearly three acres of public land set aside as parks—69 of them. Focusing on residents in Tacoma’s Central District (TCD), we conducted 45 site-based site surveys of seven parks (located within TCD) between November of 2020 and March of 2021 and 350 online surveys of TCD neighbors to understand if, when, and how residents used their neighborhood parks. From this research, we created a matrix that points to five potential functions that modern parks could play in the urban landscape; the design qualities they must prioritize; functions they will serve; and the kinds of activities they will support. This park description, the sixth model of parks, is what we term the just park.

Parks designed to meet these functions will satisfy the social, recuperative, and recreational needs of residents for whom city and urban life is isolating and marked by various exclusions.

Citations

- Cranz, G. (1989). *The politics of park design: A history of urban parks in America*. Cambridge, Mass: MIT Press.
- Honey-Rosés, J., Anguelovski, I., Chireh, V. K. S., Daher, C., Konijnendijk van den Bosch, C., Litt, J. S., Mawani, V., McCall, M.K., Orellana, A., Oscilowicz, E., Sánchez, U., Senbel, M., Tan, X., Villagomez, E., Zapata, O. & Nieuwenhuijsen, M.J. (2020) The impact of COVID-19 on public space: an early review of the emerging questions – design, perceptions and inequities, *Cities & Health*, DOI: 10.1080/23748834.2020.1780074
- Loukaitou-Sideris, A., Levy-Storms, L., Chen, L. & Brozen, K. (2016) Parks for an Aging Population: Needs and Preferences of Low-Income Seniors in Los Angeles, *Journal of the American Planning Association*, 82:3, 236-251, DOI: 10.1080/01944363.2016.1163238
- Rosenfield, L. W. (1989). Central Park and the Celebration of Civic Virtue. In T. W. Benson (Ed.), *American Rhetoric: Context and Criticism* (pp. 221-266). Carbondale, IL: Southern Illinois University Press.
- Veal, A.J. (2006) The Use of Urban Parks, *Annals of Leisure Research*, 9:3-4, 245-276, DOI: 10.1080/11745398.2006.10816433

Key Words: Parks, sustainability, urban design, public space, equity

CREATIVE SOCIAL ENGAGEMENT DURING THE COVID PANDEMIC: THE RELATIONSHIP BETWEEN THE NEIGHBORHOOD BUILT ENVIRONMENT, SOCIAL CONTEXT, AND RESIDENT CREATIVE PRACTICES IN PHOENIX, AZ

Abstract ID: 1105

Individual Paper Submission

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The COVID-19 pandemic's stay-at-home orders and school/business shutdowns constricted people's behaviors and social interactions, elevating the role of the neighborhood in social life (Mehta, 2020). Neighborhood transportation infrastructure, including streets, sidewalks, and driveways, provided opportunities for new forms of social and creative engagement (Braus & Morton, 2020; Russell & Stenning, 2020). Adults and children used these spaces to cope with the pandemic and its disruptions through chalk drawings, messages, yards signs, and rock art. There are links between neighborhood built environment and creative social engagement. Existing literature suggests that some neighborhood built environments may better cultivate conditions needed for residents' creative expression of concerns, interests, and experiences. Little is known, however, about the variation in creative social engagement across diverse demographic, geographic, and built environment contexts.

Our research helps to fill this gap by examining how the neighborhood built environment and social context influence people's engagement in formal and informal creative expression prior to and during the COVID-19 pandemic. In particular, we use thematic, spatial, and multivariate regression analyses to explore (1) how the use of the neighborhood public realm for creative social engagement differed among three neighborhoods in the city of Phoenix with distinct demographic, housing market, and transportation conditions, (2) how the contextual differences of these neighborhoods shaped the presence, extent, and kinds of creative social engagement across the pre-pandemic and pandemic periods, and (3) the implications of these trends for residents' wellbeing and planning practice.

We expect that the design of neighborhood transportation infrastructure may shape creative social engagement. Some potentially influential factors include the presence, size, and connectivity of streets, sidewalks, and driveways. For instance, large sidewalks and/or driveways and less connective streets designs (e.g., cul de sac) may provide opportunities for engagement and encourage creative expression. Neighborhoods' social context may also shape residents' creative social engagement. Demographics and cultural conditions may result in differences in sense of control and ownership of transportation infrastructure, levels of activism, and objective and perceived vulnerabilities associated with creative social engagement. In addition, neighborhood institutions may shape creative social engagement as they may dictate the design and management of neighborhood public spaces, including streets, sidewalks, and driveways. These built and social dimensions of neighborhoods may interact to shape neighborhood cohesiveness and identity and thus help residents stay connected and engaged, especially during a period of crisis.

Overall, this research helps expand existing theories on the relationships between the neighborhood built environment and social context and creative social engagement during a global pandemic. Our findings offer insights to planners and decision makers on how to cultivate opportunities for creative expression, social cohesiveness, and identity formation across diverse neighborhoods.

Citations

- Braus, M., & Morton, B. (2020). Art therapy in the time of COVID-19. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(S1), S267.
- Mehta, V. (2020). The new proxemics: COVID-19, social distancing, and sociable space. *Journal of urban design*, 25(6), 669-674.
- Russell, W., & Stenning, A. (2020). Beyond active travel: children, play and community on streets during and after the coronavirus lockdown. *Cities & health*, 1-4.

Key Words: COVID-19, Neighborhoods, Built Environment, Creative Social Engagement

THE IMPACT OF THE BUILT ENVIRONMENT ON HUMAN MOBILITY PATTERNS DURING COVID-19: A STUDY OF NEW YORK CITY'S OPEN STREETS PROGRAM

Abstract ID: 1207

Individual Paper Submission

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Planners, policy-makers and traffic engineers have long attempted to fashion the built environment to facilitate specific modes of transportation. In the early 20th century this meant reshaping the built environment to accommodate automobiles and other motorized transportation. More recently, as the pitfalls of an auto-centric built environment have become apparent, there has been a shift towards creating and fostering other modes of transportation, including walking. Walking does not create traffic congestion, contributes little to one's carbon footprint, and can contribute to an active and more healthful lifestyle.

For the aforementioned reasons, planners have explored shaping and reshaping the built environment to make it less auto-centric. Many cities have added bike lanes, built traffic-calming infrastructure, and worked to promote active travel as a way of mitigating the harms associated with an auto-centric built environment. Neo-traditional design, New Urbanism, and other initiatives are but a few of the efforts that evidence this shift. Encouraging walking can be done through a variety of means including public education campaigns, disincentives to driving, and building or retrofitting the built environment to be more pedestrian-friendly. This last course of action assumes that walking is contingent upon characteristics of the built environment. Thus, the question is to what extent does the built environment influence walking or more specifically, within the range of possible or plausible built environments, how much variability in walking is likely to occur?

In 2020, the Covid-19 pandemic that swept across the world has left detrimental effects on humanity. In response, cities around the world were forced into lockdowns, adapted to remote work, and enforced social distancing policies to curb the spread of the pandemic. In the wake of this global health crisis, the role of the built environment becomes increasingly important to facilitate these response measures. In New York City, policies such as the Open Streets Program (OSP) were adopted to provide space for safe social distancing practice and promote outdoor activities. Although the OSP has been largely supported by receiving communities, majority of the participating streets have stopped operating by October 2021.

This paper examines the relationship between the built environment – in particular, having more public spaces that support walking and outdoor activity – and foot-traffic mobility patterns in the case of New York City. It is guided by the research question: How do features of the built environment affect human mobility patterns during Covid-19? How effective are planning initiatives such as the Open Streets Program in New York City that are aimed at creating more space for active travel? A limitation in past research on walkability has been the issue of self-selection of residents into neighborhoods. To answer these research questions, we present an innovative use of instrumental variable design to isolate the exogenous effect of the built environment. In the first stage of the 2SLS, the listed streets are used to predict the treatment variable, which are active streets that have put up barricades to close the streets for pedestrian use. We then estimate a difference-in-differences model that compares the change in foot traffic to public points-of-interests (POI) in neighborhoods that are part of the Open Streets Program with those that are not “before and after” the start of the city-wide program.

This research can make a meaningful contribution by informing urban design practices through empirical evidence and providing actionable policy suggestions for urban design in building more resilient, sustainable, and inclusive cities. It also builds on previous work to use fine-grained location-based mobile data to analyze the effects of physical space on human behavior and health in the context of built environment design discussions for a post-Covid world.

Citations

- Cervero, R., & Duncan, M. (2003). Walking, bicycling, and urban landscapes: evidence from the San Francisco Bay Area. *American journal of public health*, 93(9), 1478-1483.

- Ewing, R., Handy, S., Brownson, R. C., Clemente, O., & Winston, E. (2006). Identifying and measuring urban design qualities related to walkability. *Journal of Physical Activity and Health*, 3(s1), S223-S240.
- Freeman, L., Neckerman, K., Schwartz-Soicher, O., Quinn, J., Richards, C., Bader, M. D., ... & Rundle, A. G. (2013). Neighborhood walkability and active travel (walking and cycling) in New York City. *Journal of Urban Health*, 90(4), 575-585.

Key Words: Walkability, Urban Design, Health

RE-DESIGNING SUBURBIA WITH NATURE: EVALUATING GREEN SPACE CHANGES IN SPRAWL RETROFITTING PROJECTS IN THE U.S.

Abstract ID: 1230

Individual Paper Submission

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Literature shows that urban sprawl causes negative outcomes for public health, society, the economy, and the environment. Recent efforts to fix those problems, often labelled as sprawl retrofitting, focus on increasing density, adding different land uses and diverse housing options, and improving walkability and environmental amenity. Preserving the natural environment and providing more green spaces are integral for sprawl retrofitting projects to achieve their goals. Nature in suburbia can provide environmental (e.g., biodiversity, air purification, water and climate regulation), socioeconomic (e.g., community events, place of cultural heritage, property value premiums) and physical and mental health benefits. But lacking in the literature is empirical evidence about if the recent projects have achieved their “regreening” goals. Some studies even show a significant loss of green space during suburban densification.

This quasi-experimental study evaluates green space changes in 68 sprawl retrofitting projects in the U.S. completed between 2001 and 2016. We compiled the project lists from two websites—Traditional Neighborhood Development and Congress of New Urbanism—and relevant literature. The difference-in-differences analysis compares multiple green space measures, including changes in total green space, green space by types, percentage of impervious area, and park area, to those in nearby neighbourhoods. We collect green space data from NLCD (30-meter resolution), NAIP (1-meter resolution), and ParkServe® (park shapefiles). Control groups are adjacent areas within 0.5-mile of the project boundary. A regression model explains the relationships between green space changes and project and neighbourhood characteristics, including project size, previous uses (e.g., residential, retail, business/industrial, public), location, years since completion, and sociodemographic attributes. The secondary data is being collected, and we plan to finish the data analysis in the summer of 2022.

We expect to find more decrease (or less increase) in green space and impervious areas and more increase in park areas in sprawl retrofitting sites compared with adjacent areas. We also expect that green space increased more in larger projects, more affluent and advantaged neighbourhoods, and areas that are further from CBD.

As a result, we share the typology and design principles of re-designing suburbia with nature. Key principles include: 1) Ensure the quality and quality of urban nature after development, 2) Focus on walkability, 3) Enhance place attachment and attractiveness, 4) Provide inclusive public spaces, 5) Increase local and regional connectivity of green space, 6) Promote environmental performance, and 7) Apply ecological design principles for biodiversity. This study evaluates the efficacy of the regreening strategies in sprawl retrofitting. Our findings call for more dedicated and coordinated efforts to provide socially and ecologically functioning green spaces when retrofitting suburbia.

Citations

- Dunham-Jones, E., & Williamson, J. (2008). *Retrofitting suburbia: urban design solutions for redesigning suburbs*. John Wiley & Sons.
- Marique, A.-F., & Reiter, S. (2014). Retrofitting the suburbs: Insulation, density, urban form and location. *Environmental Management and Sustainable Development*, 3(2), 138–153.
- Tachieva, G. (2010). *Sprawl repair manual*. Island Press.
- Talen, E. (2011). Sprawl retrofit: Sustainable urban form in unsustainable places. *Environment and Planning B: Planning and Design*, 38(6), 952–978.
- Vall-Casas, P., Koschinsky, J., & Mendoza, C. (2011). Retrofitting suburbia through pre-urban patterns: Introducing a European perspective. *Urban Design International*, 16(3), 171–187.

Key Words: urban sprawl, urban nature, quasi-experimental, parks and forests, new urbanism

THE ROLE OF GREEN INFRASTRUCTURE IN ENHANCING MICROCLIMATE CONDITIONS: A CASE STUDY OF A LOW-RISE NEIGHBORHOOD IN ABU DHABI

Abstract ID: 1239

Individual Paper Submission

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This study focuses on the assessment and utilization of using local nature-based solutions (NbS) to enhance microclimate in neighborhood streets and the public realm in desert areas, taking Abu Dhabi, United Arab Emirates as a case study. Despite the numerous studies supporting the importance of urban landscaping using NbS, a clear design approach to demonstrate how a landscape can lessen ambient air temperature is yet to be established. Additionally, there is still a need to specify which type of tree or which design intervention is necessary to improve the urban thermal environment. Studies that have considered vegetation have highlighted the need of studying different tree species planted in streets and public open spaces and on the importance of considering tree density and their proximity, surface materials, pavements, streets, and buildings in microclimate calculations (De Abreu-Harbich et al., 2015; Aboelata & Sodoudi, 2020; Taleb & Abu-Hijleh, 2013). In this study, two methods are used, namely an on-site measurement using citizen science (volunteers who collect and/or process data in a scientific enquiry), and a numerical simulation model in the ENVI-met software. As part of a collaboration between Earthwatch (an Environmental Nonprofit Organization), HSBC and Khalifa University, a group of sixty employees from HSBC were selected as citizen scientists to collect meteorological and site data in Zaafranah, a low-density residential neighborhood with an area of 0.7 km² located in Abu Dhabi Island. Citizen scientists were first trained in a series of workshops on climate issues and data collection. The data includes the physical characteristics of trees such as tree height, crown width (crown spread/diameter), trunk height, and air temperature around trees. Data collection was carried out using photography, the Fulcrum mobile application (for geolocating and recording data of existing trees), Nikon Forestry pro Laser Rangefinder (for measuring dimensions of trees), and Testo-410 (for measuring temperature/humidity/windspeed). Data sets were then employed in ENVI-met; a three-dimensional non-hydrostatic model that simulates microscale interactions between urban surfaces, vegetation, and the atmosphere. It allows analysis of the effects of small-scale changes in urban design (e.g., trees, backyard greening, new building configurations) on microclimate under different mesoscale conditions. Three models/components are incorporated within the ENVI-met to carry out numerical simulations, namely atmospheric model, vegetation model and soil model. The data collected with citizen science had a positive impact on the input quality of the models. This was achieved by the citizen science contribution in gathering a larger dataset of air temperature and tree dimensions/locations which allowed the achievement of reliable input data by preserving consistent data values and using them in the models while eliminating the less accurate values. Moreover, this research utilizes a design-based approach focused on urban trees as NbS to propose landscaping types and layouts in low-rise residential urban areas. The research has three main aims: first, identify among the three locally available trees (Poinciana, Ghaf, and Temple trees) the species that provide the best outdoor air temperature reductions in a low-rise residential neighborhood. Second, identify the vegetation density represented by the minimum distance between trees to achieve the largest outdoor air temperature reductions. ANOVA analysis is carried out to examine the statistical significance between the trees regarding their air temperature reductions. Additionally, third, to prove the feasibility and improve the research by combining empirical data collection using citizen science with desk-based microclimate modeling. It also provides additional insights to the existing literature by considering three aspects of landscaping design: (i) size and types of trees, (ii) spacing between trees, and (iii) local landscaping regulations. Although this research contemplated particular settings, its findings are applicable to a diversity of nations, particularly those with comparable environmental and social conditions to the UAE.

Citations

- Abaas, Z.R. Impact of development on Baghdad's urban microclimate and human thermal comfort. *Alex. Eng. J.* 2020, 59, 275–290
- Aboelata, A.; Sodoudi, S. Evaluating the effect of trees on UHI mitigation and reduction of energy usage in different built up areas in Cairo. *Build. Environ.* 2020, 168, 106490.
- De Abreu-Harbich, L.V.; Labaki, L.C.; Matzarakis, A. Effect of tree planting design and tree species on human thermal comfort in the tropics. *Landsc. Urban Plann.* 2015, 138, 99–109.
- Taleb, D.; Abu-Hijleh, B. Urban heat islands: Potential effect of organic and structured urban configurations on temperature variations in Dubai, UAE. *Renew. Energy* 2013, 50, 747–762.

Key Words: Urban Heat Island, Nature-based Solutions (NbS), ENVI-met, Hot-arid zones, Landscape design

DO URBAN FORM CHARACTERISTICS PERPETUATE DISPARITIES IN POI-BASED MOBILITY CHANGES DURING COVID-19? A STUDY IN FULTON COUNTY, UNITED STATES

Abstract ID: 1305

Individual Paper Submission

Urban form has long been identified as a key factor in shaping how we travel (Mouratidis et al., 2019). During COVID-19, nearly all neighborhoods in the United States showed a sharp decrease in urban traffic of all kinds (Gao et al., 2020; Google, 2020). As existing literature primarily investigated the socio-economic inequality in neighborhood's resilience to mobility change (Chang et al., 2021), the impact of the built environment is often understudied. Thus, in this paper, we seek to fill this gap by exploring the associations between urban morphological characteristics of the built environment and changes in the population's mobility pattern incurred by COVID-19 after controlling for socio-economic and demographic variables. More importantly, by providing quantitative evidence on whether and how urban form is related to such disparity, a protective effect of urban form on population mobility during a public health crisis can be argued and further interpreted.

Mobility data was obtained from SafeGraph's (2022) raw sampled cellular data of nearly 1.9M home-to-POI trips from 2019-2021 in Fulton County, Georgia. We further extracted mobility pattern metrics of each census tract by constructing aggregated statistics such as weighted average travel distance and total trips per person. Descriptive statistics indicate a 49.8% decline in annual total trips per person across the county. Due to measures taken to contain the spread, trips to specific destinations show an even larger decline, such as green space and restaurants. Although the overall average travel distance did not change much, geographic disparities show that urban tracts made longer trips to more destinations further away while their suburban counterparts cut down the travel distance instead.

Then, using Fulton Government's tax parcel, Microsoft building footprint, and Georgia DOT's Street network data, we proposed a multi-dimensional framework to quantify and assess urban form characteristics in areas of Density, Connectivity, Diversity, and Centering. The selection of variables is based on existing literature (Clifton et al., 2008; Song et al., 2013) and expert consensus. Further we performed factor analysis to reduce fifteen variables to 4 factors, each of which represents one field of urban form metrics and in total explains 75.1% of the total variance. Density and connectivity variables are highly correlated, and thus are integrated into a single factor.

Finally, we deployed OLS and spatial lag regression models to predict mobility pattern statistics by urban form factors, socio-economic status, and COVID trend variables. Spatial models are used primarily for mitigating the spatial autocorrelation effect, detected with Moran's I statistics on multiple dependent variables. With an overall R^2 around 0.4-0.6, results of the regression models show that greater density, connectivity, and diversity factors are highly associated with a fewer decline in total trips and a larger increase in average travel distance. Although it is debatable whether a longer average distance essentially represents higher capability of travelling, evidence clearly shows that living in more compact built environment leads to fewer constraints on population-level mobility during COVID-19, compared to the widespread, single land-use suburb. Potential interpretations on areas of the impact include more exposure to walking/biking infrastructure, access to public transit, and proximity to destinations. We expected a higher prediction accuracy if the short-term temporal dynamics can be better modelled with the availability of longitudinal census-tract-level COVID data such as cases or hospitality. Nevertheless, intended to be catalytic, these findings will further inspire future studies into the causality structure of urban form's behavioral impact on travel during uncertain times, and can be used by urban designers and planners to target specific areas of urban development to promote a more resilient and equitable mobility network.

Citations

- Hamidi, S., Ewing, R., Preuss, I., & Dodds, A. (2015). Measuring Sprawl and Its Impacts: An Update. *Journal of Planning Education and Research*, 35(1), 35–50. <https://doi.org/10.1177/0739456X14565247>
- Kelly Clifton, Reid Ewing, Gerrit-Jan Knaap & Yan Song (2008) Quantitative analysis of urban form: a multidisciplinary review, *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 1:1, 17-45, DOI: 10.1080/17549170801903496
- Song, Y., Shao, G., Song, X., Liu, Y., Pan, L., & Ye, H. (2017). The Relationships between Urban Form and Urban Commuting: An Empirical Study in China. *Sustainability*, 9(7), 1150. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/su9071150>

Key Words: mobility pattern, urban form, COVID-19, human foot traffic

STRATEGIC PRINCIPLES FOR URBAN MICRO-REGENERATION: A MULTIPLE CASE STUDY ANALYSIS OF URBAN ACUPUNCTURE PRACTICES

Abstract ID: 1310

Individual Paper Submission

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In recent years, compared with the large-scale, capital-intensive urban regeneration models, a small-scale, incremental micro-regeneration (urban acupuncture), has shown its potential in fostering urban resilience and inclusiveness in the face of environmental, socioeconomic, and political uncertainty. However, recent studies reveal a deep-rooted division on micro-regeneration, which surfaces as a set of dichotomies that question whether urban micro-regeneration should be based on: (1) technology-led or culture-led strategy; (2) top-down or bottom-up approach; (3) mono-dimensional or integrated intervention logic ; (4) strategic planning or tactical action. These dichotomies generate a critical knowledge gap because they suggest divergent hypotheses on what principles need to be considered when implementing strategies for enabling urban micro-regeneration development. This paper starts filling such a gap by reporting on the findings of a multiple case study analysis which is conducted on Shanghai's best urban acupuncture practices from 2018 to 2022. In meeting the aim, This paper builds on previous research by proposing a theoretical framework that combines urban resilience agenda, micro-urbanism theory, and famous urban acupuncture cases from different regions of the world. Then, to test the validity of the hypotheses emerging from each dichotomy, it analyzes 14 urban acupuncture projects which have been awarded best practices by Shanghai Municipal Government.

This paper address, first, to advance this burgeoning field, more empirical case study is needed. Especially we need to focus on how urban micro-regeneration treats "urban" as an economic and social network that drives the key process of innovation, and how urban design can act as an efficient tool for promoting endogenous development by establishing proper connections between different networks and nodes in the city. Secondly, This paper formulates a set of strategic principles that cities should take into consideration to successfully design and implement urban micro-regeneration strategies: (1) take holistic strategy: Combine with smart city development, urban micro-regeneration should build an open collaboration network to accommodate as many actors as possible from governments, communities, markets, and professional institutions; (2) combine top-down (government-ed) and bottom-up (community-driven); (3) adopt an integrated intervention logic by setting local office and neighborhood planners as agents of the state; (4) build an activism strategic framework to integrate independent and decentralized acupuncture projects.

The results of this empirical analysis offer a series of critical insights into what strategic principles drive micro-regeneration development in China and generate scientific knowledge which helps to overcome the dichotomous nature of urban acupuncture research. And This paper also concludes with a discussion of how the urban micro-regeneration might serve as a boundary object, and also point out that the lack of a quantitative index system to measure the effectiveness of urban acupuncture projects may hinder micro-regeneration from playing a more stable guiding role in urban regeneration public policy.

Citations

- Jacobs J. The economy of cities[M]. Vintage, 2016.
- Lerner J. Urban acupuncture[M]. Washington, DC: Island Press, 2014.
- Beaudry C, Schiffrerova A. Who's right, Marshall or Jacobs? The localization versus urbanization debate[J]. Research policy, 2009, 38(2): 318-337.
- Sardar Z. Welcome to postnormal times[J]. Futures, 2010, 42(5): 435-444.
- Castells M. The rise of the network society[M]. John Wiley & sons, 2011.

Key Words: urban micro-regeneration, Urban Acupuncture, Pragmatism, Urban Resilience, Urban design

PLANNING FOR THE POST-COVID WATERFRONT RETAIL DEVELOPMENT: A TYPOMORPHOLOGY OF GLOBAL WATERFRONT SHOPPING CENTRES

Abstract ID: 1320

Individual Paper Submission

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Shopping centre development has acted as a key force stimulating waterfront regeneration in cities worldwide since the late 20th century, attracting investment, facilitating nearby real estate development, and fostering vivid walking space and urban experience. The ongoing Covid-19 pandemic rendered enclosed city space vulnerable to the spread of the disease while highlighting the value of open urban space such as the waterfront (Florida et al., 2021). In this way, waterfront shopping centre development would likely see a rise in the post-Covid era.

Existing studies investigated the type, planning, finance, and socioeconomic impact of waterfront regeneration (Dovey, 2005; Gordon, 1997; Hoyle, 2000), with a focus on the Global North practice from the late 1980s to 2000s. Recent studies have examined the types and urban capacities of emerging shopping morphologies (Rao & Dovey, 2021). However, no systematic research of the morphological typology, genealogy, and urbanity of contemporary waterfront shopping centres has been conducted. Therefore, Our research goals are threefold: to identify the key

morphological types of current waterfront shopping centres, to explore the evolution of these key retail types, and to interrogate the degree to which emerging waterfront shopping centres enhance or reduce urban public life.

We applied a typomorphology of waterfront shopping centres around the globe. Our examples embody 27 shopping centres in 21 cities with a broad global spread, and the number of examples is expanding. Typomorphology conceives the type as a 'diagram' or 'pattern' that shows how some places work in general without suppressing their difference, instead of an 'archetype' or 'prototype'. We mapped shopping centres by extracting anchor or general 'shops', vehicular or pedestrian traffic 'flows', and car, pedestrian, and green 'space' from satellite images centred on shopping morphologies at the walkable scale of one-by-one square kilometre. We identified the morphological types of shopping centres, using the latest retail typomorphology by Rao and Dovey (2021).

The preliminary analysis reveals three basic spatial relations of the shopping centre to the waterfront: parallel to the waterfront (e.g., Brookfield Place in New York City), perpendicular to the waterfront (e.g., Harbour City in Hong Kong), and occupying the waterway (e.g., Canary Wharf in London). Many examples of shopping centres embody mixed shopping-water spatial relations, being more geared to the main street morphology than those with a single shopping-water relation. This said, mall-becoming-street mutants are the dominant source of the street/urban experience in the examples of waterfront shopping centres. Shopping centres occupying the waterway pose a greater challenge to the public control of shopping space compared to the other two shopping-water relations. More results and discussion would arise from further mapping and analysis. The findings could inspire a range of spatial strategies for the Post-Covid waterfront retail development, with particular implications for retail planning to tackle more sophisticated privatisation of waterfront.

Citations

- Dovey, K. (2005). *Fluid city: transforming Melbourne's urban waterfront*. University of New South Wales Press Ltd.
- Florida, R., Rodríguez-Pose, A., & Storper, M. (2021). Cities in a post-COVID world. *Urban Studies*, Online First.
- Gordon, D. L. A. (1997). Financing Urban Waterfront Redevelopment. *Journal of the American Planning Association*, 63(2), 244-265.
- Hoyle, B. (2000). Global and Local Change on the Port-City Waterfront. *Geographical Review*, 90(3), 395-417.
- Rao, F., & Dovey, K. (2021). Shopping and Urbanity: Emerging Assemblages of Main Street, Mall, and Power Centre. *Planning Theory & Practice*, 22(5), 747-764.

Key Words: Waterfront, Shopping Centre, Retail Development, Typomorphology, Post-Covid

INCLUSIVENESS, THE URBAN NIGHT AND URBAN DESIGN PROPOSALS IN FOUR ENGLISH TOWNS

Abstract ID: 1357

Individual Paper Submission

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This paper reports selected findings from a research project that brings insights from studies of the urban night into contemporary urban design theory and practice. The objective is to explore inclusion and exclusion in contemporary urban design proposals for small and medium sized towns in England through the prism of research on the urban night. Night studies has emerged as a topic as scholars, practitioners and politicians have responded to the growth of nightlife, combined with a recognition of the significance of the night-time economy (Nofre and Eldridge 2018). Interest has expanded to include other aspects of place and movement in the hours of darkness, such as ecology, lighting and night working (Shaw 2018).

Night studies scholarship reports that the night (defined in the UK as from 6pm to 6 am) occupies a substantially different time/space to the hours of daylight. Changes may occur in land-uses, activities, atmosphere and intensity, perceptions of built form, patterns of movement and in connectivity for pedestrians, cyclists and public transport users. By contrast, a literature review of urban design sources found that national design guidance makes little reference to the night as a different time/space and where it does, relies on a restricted range of stereotypes. Illustrations typically show urban scenes in bright sunlight.

The project takes four case study towns in England, Middlesbrough, Stockport, Harlow and Bicester, where the UK government is sponsoring new development. The research questions are: how does an urban design analysis of the town at night differ from the daytime? Have 'visions' for the urban night been incorporated into the proposals for new development, either through regeneration or substantial urban extensions? How inclusive are these proposals and do they respond to the diversity of the projected inhabitants and visitors and their needs?

The case study investigations have been carried out with mixed methods combining primary and secondary sources. The urban design analysis has been carried out with maps, diagrams and direct observation and the policy scrutiny includes interviews with officials and stakeholders to supplement examination of policy documents, web sources, 'grey literature' and other information.

At local level, the case study towns are expanding the night-time economy 'offer' in their centres. Each town differs with regard to their specific historical circumstances and objectives but has to operate within a common national policy framework that requires an increase in housing. The pandemic has accelerated a decline in retailing, opening opportunities to substitute leisure, entertainment, hospitality and cultural uses. The studied proposals vary from being bold and experimental aiming to attract and support a wide range of activities and diverse communities to more cautious and restrictive propositions targeted at a white, middle-income demographic. A comparison of centres is presented with regard to their relative inclusiveness.

Beyond nightlife, significant numbers of people work at night, in a diverse range of occupations (Kolioulis et al 2021). There is also a social infrastructure that is non-commercial. The urban design analysis extends beyond the town centre to capture a more holistic view of place and movement at night, presenting constraints and opportunities for residents and workers.

These findings provide further substance to Dovey's (2016) theoretical approach that unsettles static concepts of place. They extend the literature on planning the night-time city (Publica 2020). Highlighting omissions in design guidance is relevant to policy makers. An example of good practice in creating an inclusive proposition for the night-time economy is identified. The final argument is that expanding the design process to take a holistic approach to place and movement after dark across an entire town opens up more possibilities for sustainable and inclusive planning and urban design.

Citations

- Nofre, J. and A. Eldridge. Eds. 2018. Exploring Nightlife, Space, Society and Governance. London: Rowman & Littlefield.
- Dovey, K. 2016. Urban Design Thinking. London: Bloomsbury Academic
- Shaw, R. 2018. The Nocturnal City. London: Routledge.
- Publica. 2020. Developing a Night Time Strategy. Guidance for Local Authorities. Part 2. London: Greater London Authority.
- Kolioulis, A., J. Siravo, P. Apostolidis, L. Matheou and C. Campani. 2021. Working Nights: municipal strategies for nocturnal workers. Hampshire: Autonomy.

Key Words: Night, Inclusiveness, Place, Movement, Design

“WALK YOUR WHEELS IN THE DISMOUNT ZONE”: COMPARING HOSTILE PUBLIC SPACE DESIGNS AGAINST AND JUST PUBLIC SPACE PROPOSITIONS FOR SKATEBOARDERS ON UNIVERSITY CAMPUSES IN THE UNITED STATES, UNITED KINGDOM, AND AUSTRALIA

Abstract ID: 1411

Individual Paper Submission

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When a college student who skateboards approaches the entrance of the University of California, Los Angeles (UCLA), a sign greets them: “Walk your wheels in the dismount zone.” As the student pedestrianizes their trip through UCLA's public spaces, they notice hostile architectural objects like skate stoppers or planters that eliminate their ability to transport themselves and recreate. Hostile designs are processes, practices, and outcomes that exclude certain user groups and their activities in the public realm through regulatory and architectural strategies (Rosenberger, 2020). Both understudied and undertheorized in planning scholarship, we assess how exclusionary designs in publicly funded and managed places affect their social, political, and architectural qualities as well as a person's right to the city (Lefebvre, 1991). Urban design processes, practices, and outcomes that implicitly or explicitly target groups for exclusion produce socio-spatial injustices that should be addressed to reimagine public spaces as sites of social and political inclusivity (Mitchell, 2003). We have two research questions. First, what do hostile designs look like at each campus and how do they function to target skateboarders socially and spatially? Second, why do universities contain hostile architecture and how do college skateboarders contend with it? We answer our research questions through an interdisciplinary approach that employs photographic cataloging of hostile designs and semi-structured conversations with college skateboarders. We compare their experiences with and contestations of exclusionary designs at UCLA in Los Angeles, California, USA, the University of Exeter in Exeter, England, UK, and Griffith University in South East

Queensland, Australia. Our approach borrows from UCLA's Urban Humanities Initiative, which fuses cultural readings of space with critiques of how places are designed. Our qualitative study is collaborative, exploratory, and iterative. Due to our positionalities as skateboarding academics who work and skate on our respective campuses, we include our personal experiences and observations to supplement photographic and conversational data. We structure our comparative analysis using Setha Low and Kurt Iveson's (2016) evaluative framework of five propositions for more just urban public spaces. These propositions include distributive justice (i.e., how material affordances are distributed), recognitional justice (i.e., how different cultural identities and practices are accepted), interactional justice (i.e., how skateboarders are welcomed in the production and consumption of built form), procedural justice (i.e., how skateboarders are represented in decision-making processes that influence public space design), and ethic of care (i.e., how skateboarders steward public space to coexist with others). Through thick descriptions of photographs, conversations with college skateboarders, and our experiential observations, we find that universities arbitrarily criminalize skateboarding and rely on nearby public spaces like plazas and skateparks to provide more inclusionary landscapes for play. Examples of hostile designs are similar across campus contexts and include restrictive signage, objects like metal brackets on handrails and benches, and campus security. In all three contexts, the way that skateboarders are targeted for exclusion violates all propositions in our just public space design framework. Despite regulatory and architectural hostility, skaters identify spatial and temporal gaps that allow them to skate on campus during weekends. Our findings reveal that publicly-funded universities mirror privately-owned public spaces through regulatory and architectural exclusion. We argue that academic institutions should include skateboarders into their urban design processes and practices to produce more just public space outcomes. We recommend the creation of on-campus skate clubs to destigmatize the activity, collaborative programming to permit skateboarding during non-school hours, and architectural interventions like angle iron on concrete ledges to curb minor property damage. We advocate for more grounded research on hostile designs so that cities can provide public spaces that are socially and spatially just.

Citations

- Lefebvre, H. (1991). *The Production of Space* (D. Nicholson-Smith, Trans.). Basil Blackwell Ltd.
- Low, S., & Iveson, K. (2016). Propositions for more just urban public spaces. *City*, 20(1), 10–31.
- Mitchell, D. (2003). *The Right to the City: Social Justice and the Fight for Public Space*. The Guilford Press.
- Rosenberger, R. (2020). On hostile design: Theoretical and empirical prospects. *Urban Studies*, 57(8), 883–893.

Key Words: hostile architecture, urban design, public space, skateboarding, justice

FROM TACTICAL URBANISM TO COMMUNICATION BY DOING: STREET VENDING AND INFORMAL PLACEMAKING DURING THE COVID-19 PANDEMIC IN QUEENS, NEW YORK CITY

Abstract ID: 1452

Individual Paper Submission

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Tactical urbanism is a planning approach that values direct, reversible, tactical interventions into public space as a way to start conversations over use and form (Lydon and Garcia, 2015). It asks planners to test physical interventions directly through processes of “creating”, “probing” and “exploring” (Wohl 2018). This paper argues that, although tactical urbanism represents a welcome turn toward more community engaged placemaking processes, it still centers the planner as initial actant, as the subject of verbs like “probing” and “exploring” and “creating”. Using the example of public plazas repurposed into vending markets during the COVID-19 pandemic in New York, this paper will make a case for a more radical tactical urbanism, one that views informal actions of marginalized groups as a first, legitimate word in an ongoing conversation about the use of public space. By seeing informal actions of marginalized groups as a form of communication by doing, planners can facilitate the opening of “invented spaces of citizenship” (Miraftab 2009).

During the COVID-19 pandemic many people in New York lost their jobs. A number of them, particularly undocumented immigrants ineligible for federal relief, turned to street vending to make ends meet. City officials reduced enforcement of vending regulations at the height of the pandemic, allowing vendors to congregate in plazas in immigrant neighborhoods across the city. During the pandemic conceptual and literal space was opened for experiments in public space management, as city officials largely left it to vendors to design, organize and manage the new informal vendor markets. Through interviews with vendors, city officials, and neighborhood residents, this paper will seek to understand how vendors devised and executed informal public space management strategies and will ask what can be learned from their bottom-up planning and design experiments. As the pandemic begins to recede, the city has moved to enforce regulations again, and windows for creative placemaking are beginning to close. Through in-depth discussions with management officials, this paper will also seek to draw lessons about the key challenges to flexible, tactical placemaking. Initial findings point towards a new approach to planning, one where planners, designers, and public space managers work to set frameworks and loose parameters within which actors can innovate

and create public space themselves. This has the potential to enable forms of insurgent citizenship (Holston 2008), as otherwise excluded groups show, through practice, what they need the city to be and to become.

Citations

- Lydon, Mike and Garcia, Anthony (2015) *Tactical Urbanism: Short-Term Action for Long-Term Change*. Washington, DC: Island Press.
- Wohl, Sharon (2018) "Tactical Urbanism as a Means of Testing Relational Processes in Space: A Complex Systems Perspective." *Planning Theory* Vol. 17(4): 472-493.
- Miraftab, Faranak (2009) "Insurgent Planning: Situating Radical Planning in the Global South." *Planning Theory* Vol. 8(1): 32-50.
- Holston, James (2008) *Insurgent Citizenship: Disjunctions and Democracy and Modernity in Brazil*. Princeton, NJ: Princeton University Press.

Key Words: Tactical Urbanism, Informality, Placemaking, COVID-19, Immigrant Urbanism

CHILDREN'S SENSE OF LOCAL BELONGING AND PERCEPTIONS OF SAFETY IN A MULTICULTURAL APARTMENT NEIGHBOURHOOD: THE CASE OF THORNCLIFFE PARK, TORONTO

Abstract ID: 1461

Individual Paper Submission

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People occupy a space, use it in a certain way, add meanings and values to that space, and make it a "place" for them. This is a process known as "placemaking", which is closely tied to the creation of a "sense of belonging" (Den Besten, 2010). These are well-studied concepts in many fields of study including urban design and planning. However, when it comes to placemaking and creating a sense of belonging within the urban public realm, a significant portion of the body of the literature focuses on adults and fails to address how children perceive and attach meanings to their local environment. This may partly be related to the common, and mostly North American, misbelief of "children do not 'belong' to urban spaces" (Horschelmann & Van Blerk, 2012).

A significant portion of children's placemaking opportunities relates to their outdoor play experiences. Previous research demonstrates that children's play experiences are not limited to what happens in the playgrounds; they play everywhere and under any circumstances (Hanssen, 2019). On the one hand, there is growing attention towards the importance of active free play in child-friendly planning research and practices. On the other hand, concerns around children's safety within the urban public realm remain a preventive factor in their active presence outdoors (Horschelmann & Van Blerk, 2012). It is apparent that if children are allowed and feel safe appearing in the urban public realm, their chances of placemaking increase, and so does their sense of local belonging.

Drawing on a case study neighbourhood in the city of Toronto, the main question of this research is "what are the correlations between the physiographic space (i.e., neighbourhood layout), chances of placemaking and levels of belonging, and children's overall perceptions of safety?" The answer to this question will inform future planning and design projects aiming for the creation of child-friendly spaces in dense urban neighbourhoods. Although minimum design standards are required, the child-friendliness of a neighbourhood should also be assessed by how effectively the neighbourhood environment is being used and loved by children. It is particularly crucial to understand children's processes of placemaking when it comes to dense urban areas with limited playspaces.

This article explores levels of local belonging and safety perceptions for children residing in Thorncliffe Park, a multicultural, high-density neighbourhood in the inner suburbs of Toronto. Thorncliffe Park has the highest population of children under 14 (27%) as compared to the city-wide percentage (15%) (Agrawal & Rutgers, 2014). In this study, the entire neighbourhood and its immediate surrounding are considered as children's realm of outdoor activities. Using systematic observations, questionnaires, and one-on-one interviews, an average day in the lives of children ages 5 – 13 (approximately) is carefully studied and popular public spaces are identified. The questions regarding safety and sense of belonging are either directly asked through questionnaires or investigated through observations and discussions with children during the interviews.

Collected data reveals that greater play opportunities and walkability of everyday destinations result in higher chances of placemaking and having a stronger sense of belonging to the local community among children. Moreover, a stronger sense of belonging to the local community improves children's perceptions of safety and the overall quality of their social presence in their neighbourhood. Therefore, a dynamic cycle exists between feelings of safety and belonging that is closely related to the frequency and quality of children's presence in the urban public realm.

Citations

- Agrawal, S., & Rutgers, J. (2014). Welcoming Communities Initiative: a test in Toronto's Thorncliffe Park'. *Immigrant Integration: Research Implications for Future Policy*, 119.
- Den Besten, O. (2010). Local belonging and 'geographies of emotions': Immigrant children's experience of their neighbourhoods in Paris and Berlin. *Childhood*, 17(2), 181-195.
- Hanssen, G. S. (2019). The social sustainable city: how to involve children in designing and planning for urban childhoods?. *Urban Planning*, 4(1), 53-66.
- Horschelmann, K., & Van Blerk, L. (2012). *Children, youth and the city: critical introductions to urbanism and the city*. London, UK: Routledge.

Key Words: child-friendly planning, sense of belonging, safety perceptions, neighbourhood layout, urban public realm

THE POST-PANDEMIC "DONUT EFFECT": PLANNING OPPORTUNITIES AND CHALLENGES

Abstract ID: 1586

Individual Paper Submission

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The traditional '9 to 5' office-based work clustered in downtowns and commercial business districts is evolving into distributed arrangements such as hybrid (a combination of office-based and off-site) and remote (fully off-site) work conducted at variable times of day and night and from diverse settings such as homes, co-working spaces, third places (e.g. coffee shops, parks, and public spaces), and spaces of movement (e.g., trains, buses, etc.). Distributed working, slowly but steadily growing since the 1980s, has intensified in the wake of the lockdowns and social distancing measures implemented to contain the COVID-19 pandemic. Before the pandemic, approximately 5% of US employees worked from home, and during the nationwide lockdown at the peak of the pandemic, about 50% of U.S. employees worked fully remotely. In the post-pandemic future, it is estimated that roughly 20 to 25 percent of the U.S. workforce engaged in office-based information and knowledge work will work away from the office up to two days a week.

This paper examines the planning and policymaking opportunities and challenges of the "donut effect", the flight of hybrid and remote workers to the suburbs and the hollowing out of major city centers by the intensification of distributed working (Ramani and Bloom, 2021). Distributed working marked by people working from home, in a coworking location, a café, on the train, or in a public park heralds the post-functionalist city where work-life boundaries have blurred, different functions co-exist in the same space, and unprecedented functions are subjectively and contingently ascribed to settings. This mingling of work and other activities has unsettled contemporary urban environments structured around a fixed time and place for work, regular journey-to-work patterns, and the segregation of land use. Residential suburbs are experiencing a demand for work, service, and recreational amenities previously found in commercial business districts. Conversely retail and small businesses are dwindling amidst vacant offices in city centers. Cities such as New York and London are considering converting vacant offices and hotels into housing for creating post-functional, mixed-use, live-work-play city centers. Might this open the path to similar urbanist practices and potentially advance sustainable development goals? This paper explores the outlook for post-functional planning in three parts.

Part 1 is a historic examination of North American and global planning practices for managing the built form and land use and mobility patterns of post-functional neighborhoods, cities, and metropolitan regions to identify the key topics and issues associated with implementing post-functional planning practices such as form-based code, live/work zoning, neighborhood amenities for home-based working, and building codes permitting co-working spaces within apartments and designated workspaces in homes. Part 2 uses data from the U.S. Census and Bureau of Labor Statistics and corporate and housing real estate market analysis to identify the U.S. regions that are experiencing the donut effect and most likely to benefit from post-functional planning at the metropolitan, city, and neighborhood levels. The final Part 3 presents a case study of the New York metropolitan region that examines the metropolitan, city, and neighborhood-level measures underway to alleviate the donut effect, assesses the outlook for post-functional live-work communities in the region, documents the lessons learned, and outlines directions for future research.

Citations

- Batty, M. (2018). *Inventing Future Cities*. The MIT Press. <https://mitpress.mit.edu/books/inventing-future-cities>
- Couclelis, H. (2004). Pizza over the Internet: E-commerce, the fragmentation of activity and the tyranny of the region. *Entrepreneurship & Regional Development*, 16(1), 41-54. <https://doi.org/10.1080/0898562042000205027>
- Di Marino, M., & Lapintie, K. (2017). Emerging Workplaces in Post-Functionalist Cities. *Journal of Urban Technology*, 24(3), 5-25. <https://doi.org/10.1080/10630732.2017.1297520>

- Katsikakis, D., Rodriguez, M., Smith, D. C., Leinberger, C., Rockey, R., & Bitner, D. (2020). Workplace Ecosystems of the Future. Cushman & Wakefield; Center for Real Estate and Urban Analysis, The George Washington University
- Ramani, A., & Bloom, N. (2021). The donut effect: How COVID-19 shapes real estate (p. 8). Stanford Institute for Economic Policy Research (SIEPR).

Key Words: Post-functional cities, mobile technology-built environment interactions, hybrid working, live-work neighborhoods

INFORMAL PUBLIC SPACES: A SPATIAL ETHNOGRAPHY OF URBAN INFORMALITY IN CENTRAL KOLKATA, INDIA

Abstract ID: 1603

Individual Paper Submission

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Urban informality, characterized by unregulated informal activities and the production of space, symbolizes the urbanization patterns of contemporary urban India. The rising number of migrant populations in Indian cities leads to informal modes of income, like hawking, vending, or begging, and dwelling on the streets, sidewalks, and other public plazas and squares, increasing contestation over the use of public spaces. While such informal spaces, populations, and activities coexist with the rest of the society in tacit ways, very little is known about the production and reproduction of informal spaces. This study explores such spatial practices of urban informality by investigating how informal public spaces are produced, used, and managed through spatial ethnography in central Kolkata, India. This study encompasses two major research questions – i) what are the spatial practices of urban informality? And ii) what are the meanings and values of the informal public spaces to the informal populations? Although informal public spaces are used both for earning livelihood or dwelling, the focus of the study is the informal practices that occur in public spaces, such as streets, sidewalks, and public squares, excluding larger informal settlements such as slums. The impetus for this study is to promote the symbiotic coexistence of the formal and informal worlds for better planning, design, management, and policy implications of public spaces in India.

Kolkata is one of the most populated cities in India, which suffers greatly from public space contestations due to a huge percentage of migrant populations, powerful and vocal hawkers' unions, and decreasing open public space. This in-depth spatial ethnography of urban informality uses the Environment Behavior Study methods, including spatial surveys, direct observations, and interviews, to illustrate life in informal public spaces. The study yields three things – i) a taxonomy of informal public spaces – classification based on type, use, and location through systematic spatial surveys and walkthroughs of major informal public spaces in central Kolkata; ii) spatial mapping of urban informality and its spatial practices – illustrations of the design, plan, and spatial and temporal activities through maps, photos, and sketches of identified types of informal public spaces, and iii) oral histories – verbal and illustrative stories of contestations and challenges faced by the informal populations.

Discourse on urban informality is increasingly focusing on its spatial aspects. This study on urban informality contributes to the literature by providing spatial perspectives on the coexistence of the formal and the informal in terms of activities, legitimacy, regulation, institutionalization, and production of space; and the interaction between the formal and the informal through everyday resistance, survival strategy, conflict and resolution, and contesting rights over public space. Both coexistence and interaction have spatial implications resulting from contacts and overlaps of the formal and the informal. However, “by viewing informality as the ‘other’ and through the lens of the formal, we cannot fathom and appreciate these processes and the benefits they entail” (Mehta 2019, 239). Thus, this study perceives urban informality as the standard and new lens of understanding public space and social life in megacities, like Kolkata, in the Global South.

Citations

- Bayat, Asef. 2000. From ‘Dangerous Classes’ to ‘Quiet Rebels’: Politics of the Urban Subaltern in the Global South. *International Sociology* 15(3): 533-557.
- Dell, Christopher, and Patrick S. L. Ghose. 2009. *Tacit Urbanism: Hawkers and The Production of Space in Everyday Kolkata*. Rotterdam: Post Editions.
- Mehta, Vikas. 2019. Space, Time, and Agency on the Indian Street. In *The Palgrave Book of Bottom-Up Urbanism*. Edited by Mahyar Arefi and Conrad Kickert. Cham: Palgrave Macmillan. doi:10.1007/978-3-319-90131-2
- Roy, Ananya and Nezar AlSayyad. 2004. *Urban Informality: Transnational Perspectives from the Middle East, Latin American and South Asia*. New York: Lexington Books.

Key Words: Urban Informality, Informal Public Spaces, Spatial Ethnography, Kolkata, India

SOCIAL AND PHYSICAL PLAY AFFORDANCES IN NEIGHBORHOODS OF KOLKATA, INDIA

Abstract ID: 1619

Individual Paper Submission

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In the Global South, the outdoor spaces for children play have been severely restricted due to rapid urbanization and densification of urban areas. The increasing degree of urbanization has negative impacts on the independent mobility of children (Kytta 2004). With the lack of urban policies for children, the contemporary children's outdoor play spaces have been limited to private gardens, front yards, public spaces, and small patches of land in the urban context that are constantly being contested. However, very few studies focus on children's play behavior, especially in the countries of the Global South. India possesses unique socio-cultural issues of the multifaceted segmented society, the emerging middle-class of consumer citizenship, and the nuclear families directing all their resources and ambitions towards the upper social mobility of their children. The paper answers the research question of how the perceived, actualized, and shaped affordances vary with changing urban setting in Kolkata, India. As of Census 2011 the city of Kolkata had a population of 4.5 million, with a density of 24,306 person per square kilometer, and only 5% of open space.

Through behavioral observations of ten play sites and interviews with 30 children (aged 7 – 13), this paper finds insight into the state of play in Kolkata. A morphological analysis of three neighborhoods (in older and newer parts of the city) and an analysis of the play behavior yields empirical knowledge about how children utilize the informal streets, temporary shops, wide-sidewalks, construction sites, and festive-structures to enhance their play in otherwise limited open spaces of a metropolitan area. In terms of play typologies, a number of formal, informal, adventurous, and imaginative forms of play were observed. Analyzing the neighborhoods in light of Gibson's (1979) theory of affordances (social and physical attributes that support play typologies), natural elements, as well as installed equipment, were found to offer opportunities for shaped affordances. A number of shaped affordances were observed based on the design of boundary walls or fences of the play spaces. The incline surfaces on the ground, sloped roofs of semi-permanent shops, and slides were found to provide shaped affordances for playing alone, climbing, and creative, competitive games. Swings or benches were also found to support multiple play type opportunities, as well as spaces of social interaction among children and teenagers. However, affordances of hiding were found to be very limited both through observations and interviews unless there were temporary festive structures present in or near the play spaces. Dynamic elements like loose bricks or stones, leaves, and inedible fruits lying on the ground were utilized by children in different ways to create new imaginative play typologies or to support other forms of traditional play. Though traffic, in general, was found to be an issue for independent children's mobility, in narrow traditional streets without sidewalks, street play was observed in abundance.

Negative affordances were found both in elements of urban design as well as in the socio-cultural context of the city. Interviews revealed the unwritten play restrictions in the neighborhood, power dynamics among various gender groups, arbitrary laws imposed by the adults of the society for their benefit, and the lack of awareness among parents about the importance of play in a child's life. The study also outlines the challenges of observations and interviews in a developing country where parents are overprotective about their children. The findings of the study will inform the urban planners and designers in India about incorporating policy guidelines for raising awareness about the importance of play in children, and will help in formulating design guidelines for neighborhoods and their play spaces to create a more children-friendly environment.

Citations

- Kytta, M. 2002. "Affordances of Children's Environments in the Context of Cities, Small Towns, Suburbs and Rural Villages in Finland and Belarus." *Journal of Environmental Psychology* 22 (1–2): 109–123. doi:10.1006/jevp.2001.0249.
- Hart, R. 2002. "Containing Children: Some Lessons on Planning for Play from New York City." *Environment & Urbanization* 14 (2): 135–48.
- Gibson, J. J. 1979/1986 *The Ecological Approach to Visual Perception*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Inc. (Original work published 1979).
- Aziz, N.F. and I. Said. 2015. "Outdoor Environments as Children's Play Spaces: Playground Affordances." In *Play, Recreation, Health and Well Being, Geographies of Children and Young People* 9, edited by B. Evans and J. Horton, 1–22. Singapore: Springer Science.

Key Words: Children Play, Neighborhood Play Affordances, Informal Play Spaces

A NEW URBAN DESIGN FRAMEWORK OF INFORMAL DEVELOPMENT STAGES IDS: EXPLORING SELF-BUILD AND GROWTH IN INFORMAL SETTLEMENTS

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A recurrent framework for defining informal settlements (IS) is in the singular goal of reaching formality. As such, development agencies define "Slums" as areas that "lack" expected features of the formal city (access to potable, water, sewer, land titles). Forcing the lack of (formality) framework overlooks the processes that make these urban forms and communities who live there different from traditional western perspectives of city-making and urban design. Informal settlements are the most common form of urbanization on the planet, accounting for one-third of the total urban form. By the mid-twenty-first century, up to three billion people will live in informal urban environments. However, we lack a consistent mapping method to pinpoint where that informality is located or how it expands. Despite a reported decrease in the relative proportion of the population living in informal settlements, "the absolute number of urban residents who live in slums continued to grow" The current scale of poverty on the planet has overwhelmed the capacity of the formal market to incorporate the masses of impoverished settlers arriving at urban centers all over the world.

The informal settlements' most salient morphological features are communities' self-build processes and the areas' constant growth. These features then permit the identification, mapping, and creation of geometrical models that ultimately help scholars predict informal settlements' growth. Part of the challenge of an accurate definition of informal settlements is limiting our understanding to a set of fixed characteristics regarding an urban form, which in reality is in constant flux. In this approach to understanding informal settlements, a key outcome is modeling and predicting "growth and consolidation" as a linear process. Understanding the linearity of the growth process in informal settlements is crucial to forecasting settlements' future. This predictability is critical to set up procedures and policies to design better outcomes.

New mapping tools and techniques offer insight into the second feature, which is the creation of predictive models to simulate the housing pattern of informal settlements' growth. Scholars found that informal settlements present robust configurational patterns. Urban patterns identification makes it possible to create descriptive geometric models for informal settlements and map slum geometry regarding how urban growth changes in shape and size over time. The further development of these models will permit the creation of predictions of how an informal settlement will change. Current literature on informal settlements mainly supports the idea that informal development follows a prescriptive series of stages.

Beyond recognizing stages of growth, these earlier studies tell us little about each step's particular defining characteristics. We applied Retroactive Mapping (RM) to understand these morphological changes for this research. The creation of these RM permits identifying inflection points in the evolving nature of that neighborhood. RM allows building a much more detailed picture of each of these stages. This research applies this process to settlements in Medellin, Colombia, and studies the morphological changes using RM and the lives of informal settlement dwellers over the entire timeframe through personal interviews. By merging both, a more detailed picture emerges, three stages of development as thresholds of densification that determine patterns of urban form. Furthermore, the underlying assumption is that urban form changes affect how the social networks inside these spaces respond to such variations. The Informal Development Stages (IDS) are (A) Foundation, (B) Infill, and (C) Consolidation. This framework understands urban growth as a relationship between population growth and building growth that can be separated into three unique linear stages: Foundation, Infill, and Consolidation. Each stage's characteristics set up opportunities for research and urban design in these urban forms.

Citations

- Augustijn-Beckers, E.-W., Flacke, J., & Retsios, B. (2011). Simulating informal settlement growth in Dar es Salaam, Tanzania: An agent-based housing model. *Computers, Environment and Urban Systems*, 35(2), 93–103.
- Barros, J., & Sobreira, F. (2002). City of slums: Self-organisation across scales.
- Baud, I., Kuffer, M., Pfeffer, K., Sliuzas, R., & Karuppannan, S. (2010). Understanding heterogeneity in metropolitan India: The added value of remote sensing data for analyzing sub-standard residential areas. *International Journal of Applied Earth Observation and Geoinformation*, 12(5), 359–374.
- Hillier, Greene, Desyllas, & Correspondence. (2000). Self-generated Neighbourhoods: The role of urban form in the consolidation of informal settlements. *Urban Design International*, 5(2), 61–96. /z-wcorg/.
- Taubenböck, H., Kraff, N. J., & Wurm, M. (2018). The morphology of the Arrival City-A global categorization based on literature surveys and remotely sensed data. *Applied Geography*, 92, 150–167.

Key Words: Informal Settlements, Slums, Urban configuration, Density, Urban patterns

URBAN SOUND DESIGN: A REVIEW AND ANALYSIS OF CURRENT NOISE REDUCTION TECHNOLOGIES USING LANDSCAPE MATERIALS.

Abstract ID: 1888

Individual Paper Submission

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This study explores the acoustical properties of landscape elements and their potential utility in noise reduction and soundscape enhancement in outdoor environments. Traditionally, environmental sound is often managed in terms of noise pollution. Common sources of noise pollution in urban environments include road traffic, railway, aircraft, construction, and animals, among others. The adverse impacts of noise pollution to human health have been well researched and documented. In 2011, it was estimated by the World Health Organization that “one million healthy lives were lost due to the burden of disease from traffic noise pollution alone in Western Europe” (World Health Organization, 2011). This measure is likely to be an underestimate if additional environmental noise sources are included (Hammer, et al., 2018). However, approaches to noise mitigation have been relatively limited in comparison to other environmental pollutants. In recent years, the concept of soundscape, which focuses on creating pleasant acoustical environments, is gaining attention. In addition to reducing noise, soundscape also recognizes the positive aspects of different sounds that exist in our environment that contributes to improved quality of life and urban experiences (Cerwén, 2016).

Landscape elements and green infrastructure are necessary ingredients in building healthy and sustainable environments. If properly designed, landscapes not only provide aesthetic value, they also contribute to minimizing environmental problems such as urban heat island effect, stormwater runoff, soil degradation, air and water pollution. However, the use of landscape elements in association with sound has not been fully explored.

This research explores and evaluates innovative strategies of integrating landscape elements in reducing noise and creating pleasant soundscapes that can be applied to both urban and rural environments (Bengtsson, Klaeboe, & Nilsson, 2015). Findings from the analysis recommend integration of emerging technologies in urban sound design and planning, beyond the use of traditional noise barrier.

Citations

- Bengtsson, J., Klaeboe, R., & Nilsson, M. (Eds.). (2015). *Environmental Methods for Transport Noise Reduction*. Boca Raton, FL: Taylor & Francis Group.
- Cerwén, G. (2016). Urban soundscapes: a quasi-experiment in landscape architecture. *Landscape Research*, 41(5), 481-494.
- World Health Organization (Ed.). (2011). *Burden of disease from environmental noise: Quantification of healthy life years lost in Europe*. World Health Organization, Regional Office for Europe.
- Hammer, M. S., Fan, Y., Hammer, S. S., Swinburn, T. K., Weber, M., Weinhold, D., & Neitzel, R. L. (2018). Applying a novel environmental health framework theory (I-ACT) to noise pollution policies in the United States, United Kingdom, and the Netherlands. *Journal of Environmental Planning and Management*, 61(12), 2111-2132.

Key Words: Noise Mitigation, Soundscape, Urban Design

JOURNEY INTO NIGHT: URBAN DESIGN, METROPOLITAN GOVERNANCE AND THE NOCTURNALIZATION OF WORK

Abstract ID: 1921

Individual Paper Submission

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Today, cities are no longer constrained by local time zones. For millions of people in the Philippines, the work day now happens at night, due to changing patterns of labor caused by globalization. What are the local, design and planning-based implications of this nocturnalization of work?

In recent years, the urban night has received renewed attention in planning scholarship. This includes explorations of night mayors as a new form of urban governance (Seijas & Gelders, 2021), the temporal expansion of urban life under conditions of late capitalism and ‘planetary urbanization’ (Shaw, 2018), and the supposed conflicts between the ‘twenty-four hour city’ and urban social order (Roberts & Eldridge, 2009). Much of this work builds off of previous scholarship on earlier historical moments which coincided with the expansion of the nighttime economy due to changing economic conditions and technological innovations (Melbin, 1978). This paper builds off of this growing body of scholarship to look specifically at increased nighttime employment in ‘white-collar’ industries located primarily in central business districts.

I focus in particular on the expansion of the Business Process Outsourcing (BPO) industry in the Philippines. BPO refers to the subcontracting of different aspects of business operations to a third party. This includes accounting, advertising, animation, health insurance claims processing, human resources, and, in particular, customer service contact centers or “call centers.” Over the previous decade, the Philippines has emerged as a global hub for the BPO sector. Today, the industry is estimated to directly employ over 1.3 million people across the country, the vast majority of whom work throughout the evening to service clients located in Europe and North America. In business districts throughout the Philippines, the socio-temporal, spatial and regulatory climate of the night have been altered to accommodate the needs of American corporations and consumers. In Metropolitan Manila in particular, entire urban districts function primarily on an American time zone, due to the clustering of the BPO industry.

The paper draws on over one year of field research conducted in the Philippines. I focus in particular on the Philippines’ largest metropolitan area, Manila, in addition to two mid-sized cities, Bacolod and Iloilo. I adopt a mixed methods approach, which includes spatial analysis, observational analysis, industry analysis and semi-structured interviews with business leaders, politicians, urban planners and night-time office workers. Through this analysis, I draw attention to how the nocturnalization of work has led to unique planning challenges, ranging from increased petty crime to the challenge of providing affordable and reliable public transportation during the evening and early morning hours. I also show how the expansion of nighttime employment in ‘white-collar’ industries is driving a new type of urban agglomeration, one in which issues of time – and the specific time zone(s) served – shape the organization of physical space, and influence urban design and planning practices. The paper concludes with a more generalizable discussion on the nocturnalization of work and its sociospatial implications.

Citations

- Seijas A, Gelders MM. Governing the night-time city: The rise of night mayors as a new form of urban governance after dark. *Urban Studies*. 2021;58(2):316-334. doi:10.1177/0042098019895224
- Roberts, M., & Eldridge, A. (2009). *Planning the Night-time City* (1st ed.). Routledge. <https://doi.org/10.4324/9780203609064>
- *The Nocturnal City*, Robert Shaw, 2018, Routledge
- *Night as Frontier: Colonizing the World After Dark*, Murray Melbin, Free Press, 1987

Key Words: Urban Nighttime Design, Technology, Infrastructure and Development, International and Comparative Planning, Economic Clusters

NEIGHBORHOOD WALKING DURING COVID LOCKDOWN - UNDERSTAND THE INTERACTING EFFECTS OF ENVIRONMENTAL AND ATTITUDINAL FACTORS

Abstract ID: 1972

Individual Paper Submission

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Maintaining an appropriate level of physical activities is essential to human health. Americans’ physical activities come from several behavioral domains, including household responsibilities, work tasks, transport-related movements, and leisure-time activities. Correspondingly, those physical activities are realized in different settings, including one’s residence, place of work, free public space and facilities, and paid sites and facilities (Kajosaari and Laatikainen, 2020). The goal to increase Americans’ physical activities thus requires a two-pronged approach – 1. integrating physical activities in the various behavior domains and 2. enhancing the supportive properties of those behavior settings. The former relies on boosting individual’s willingness to undertake physical activities while the latter addresses environmental determinants underlying people’s behaviors. Effective intervention strategies need to be based on a good understanding of both internal (cognitive/psychological) and external (environmental) factors’ behavioral impacts. Unfortunately, comprehensive research is still limited on these factors’ effects on physical activities in different settings. A bias toward an environment-oriented approach is apparent in the healthy-place-by-design strategies currently pursued in urban planning and urban design fields (Wang et al., 2016).

Walking is the most popular way for US adults to achieve the suggested level of aerobic physical activities (CDC, 2012). Neighborhood, a loosely defined area surrounding a residential unit, provides a setting accessible to a wide range of demographic groups and for both utilitarian and leisure purposes. Neighborhoods became an even more important setting for physical activities during the 2020 COVID-19 lockdown period because of the reduced availability of many physical activity settings (e.g., gyms and parks) and the restriction imposed on people’s physical movement. Studies have shown that the COVID-19 lockdown had differential impacts on walking for utilitarian purposes versus for leisure, with the former witnessing a significant decline while the latter much less of a drop or even an increase. These differential impacts were further compounded by neighborhood sociodemographic and

environmental characteristics (Hunter et al., 2021).

The significant behavioral disruption induced by the COVID-19 lockdown presents an opportunity to study the combined effects of environmental and cognitive/psychological factors on people's walking behavior in a particular setting, the neighborhood. This paper presents a study of neighborhood walking behavior of residents in Eugene-Springfield Metropolitan Region (OR) during the 2020 COVID lockdown period. It uses data from a community survey and interviews to examine factors affecting neighborhood walking patterns based on a comprehensive social-ecological framework and via structural equation model (SEM)-based path analysis. This study also explores new environment-behavior relationships arising from the lockdown context due to changes in people's perceptions and attitudes. Preliminary results show that several built environment characteristics (e.g., density, access to retail stores, and presence of parks) typically associated with neighborhood walkability exhibited atypical effects on lockdown-period neighborhood walking behavior and those effects seem dependent on individuals' awareness of their neighborhood conditions and their attitude toward walking. Overall, COVID-19 lockdown allowed people to gain a greater level of appreciation of walking in one's neighborhood and that positive attitudinal change had increased people's willingness to overcome some environmental barriers to walking.

Knowledge and insights gained from this project will contribute to our ability to design more effective strategies for healthy-place-by-design through policies and programs involving interventions in both environmental and psychological dimensions.

Citations

- Kajosaari, A., & Laatikainen, T. E. (2020). Adults' leisure-time physical activity and the neighborhood built environment: A contextual perspective. *International Journal of Health Geographics*, 19(1), 35. <https://doi.org/10.1186/s12942-020-00227-z>
- Hunter, R. F., Garcia, L., de Sa, T. H., Zapata-Diomed, B., Millett, C., Woodcock, J., Pentland, A. 'Sandy', & Moro, E. (2021). Effect of COVID-19 response policies on walking behavior in US cities. *Nature Communications*, 12(1), 3652. <https://doi.org/10.1038/s41467-021-23937-9>
- CDC. (2013, August 6). CDC VitalSigns—More People Walk to Better Health. Centers for Disease Control and Prevention. <https://www.cdc.gov/vitalsigns/walking/index.html>
- Wang, Y., Chau, C. K., Ng, W. Y., & Leung, T. M. (2016). A review on the effects of physical built environment attributes on enhancing walking and cycling activity levels within residential neighborhoods. *Cities*, 50, 1–15. <https://doi.org/10.1016/j.cities.2015.08.004>

Key Words: Neighborhood walking, healthy place by design, COVID-19 lockdown, physical activities

NOCTURNAL URBAN HEAT ISLAND, OUTDOOR THERMAL COMFORT, AND URBAN STREET DESIGN: A BIG DATA APPROACH USING URBAN IOT WEATHER SENSOR

Abstract ID: 2050

Individual Paper Submission

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Due to global warming and rapid urbanization, the frequency and intensity of extreme heat events have caused significant thermal discomfort to residents. Particularly for pedestrians, excessive heat stress has been reported as a critical barrier to walking activity. To improve outdoor thermal comfort, the daytime cooling effects of urban street design have been a major concern. Street-scale factors have been explored in terms of geometry, greenery, and building materials (Andreou, 2013; Kong et al., 2017; Kim et al., 2021), and the impact of urban morphology, layout, and the ground surface has been examined at the block-scale (Jamei et al. 2016; Lin et al. 2017). Despite their key role in mitigating urban heat conditions, only a few studies addressed the impact of urban street design on nighttime urban heat island and its association with outdoor thermal comfort.

This study explores the relationship between nighttime urban heat island and street thermal comfort. The 24-hour spatial-temporal patterns of street thermal comfort are evaluated using the COMFA model at the city scale. Urban street design that determines the difference in street thermal comfort between the daytime and nighttime is investigated. Particular attention is given to comparing the day and nighttime cooling effects of microscale street morphological and vegetated features: SVFs, HW ratio, width, direction, elevation, greenery, and block density. In addition, we explore what design features and how they affect the intensity and duration of the nighttime urban heat island. Lastly, the combined effects of design features with proximity to water bodies (i.e., river) and large green patches (i.e., mountain) are further analyzed to identify their synergies and mitigations in cooling the nighttime urban heat island.

A spatial panel regression model is adopted to estimate the street design impact on nighttime thermal comfort. Seoul, South Korea is selected considering the availability of big data on city-wide microclimate measurement and the severity of tropical night phenomena causing public health issues. Microclimate conditions at the pedestrian level are acquired from Seoul Metropolitan City, which has been collected by over 2,000 urban Internet of Things (IoT) sensors for 24-hours. MODIS and Sentinel 2 remote sensing images are collected to measure the nighttime urban heat island (land surface temperature, LST) and street greenery density (normalized vegetation index, NDVI), respectively. Street's geometrical features are measured using geospatial datasets obtained from The Korea Ministry of Land, Infrastructure, and Transport of South Korea. The nighttime COMFA energy budget model is applied to estimate human outdoor thermal comfort using microclimate variables and Sky View Factor (SVF). The SVF is an urban morphological indicator of solar access reaching to the ground and quantified using the numerical simulation tool of Urban Multi-scale Environmental Predictor (UMEP).

The pilot study results indicated that urban street geometry and greenery significantly affect the nighttime outdoor thermal comfort. We found that, for both day and nighttime, the degree of cooling effects largely depended on the size of vegetated patches. Its cooling effect on outdoor thermal comfort was boosted when its proximity to the Han River and mountains increased but was limited to within 500 meters. In terms of the street geometry, the higher SVFs and lower H/W ratio urban streets had, the higher thermal stress pedestrian had during the daytime. Meanwhile, during the nighttime, higher block densities and wider street width had larger cooling effects with improved outdoor thermal comfort. Our study findings would provide guidelines and implications on the microclimatic urban street design of how to maximize the cooling effects during the nighttime.

Citations

- Y. Kim, R. Brown, A multilevel approach for assessing the effects of microclimatic urban design on pedestrian thermal comfort: The High Line in New York, (2021) Building and Environment, Volume 205, <https://doi.org/10.1016/j.buildenv.2021.108244>.
- E. Andreou, Thermal comfort in outdoor spaces and urban canyon microclimate, Renew. Energy 55 (2013) 182–188.
- E. Jamei, P. Rajagopalan, M. Seyedmahmoudian, Y. Jamei, Review on the impact of urban geometry and pedestrian level greening on outdoor thermal comfort, Renew. Sustain. Energy Rev. 54 (2016) 1002–1017.
- K. Kong, K.K.-L. Lau, C. Yuan, Y. Chen, Y. Xuc, C. Ren, E. Ng, Regulation of outdoor thermal comfort by trees in Hong Kong, Sustain. Cities Soc. 31 (2017) 12–25
- P. Lin, S.S.Y. Lau, H. Qin, Z. Gou, Effects of urban planning indicators on urban heat island: a case study of pocket parks in high-rise high-density environment, Landsc. Urban Plann. 168 (2017) 48–60.

Key Words: Nocturnal urban heat island, Outdoor thermal comfort, Urban Street Design, Big data, IoT

Track 15 Posters

A STUDY ON KOREAN AGE-FRIENDLY LIVING ENVIRONMENT FEATURES THROUGH A SURVEY OF KOREAN SENIORS' PERCEPTION AND SATISFACTION WITH HOUSING AND COMMUNITY FACILITIES

Abstract ID: 1474

Poster

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In Korea, the share of the elderly population out of the total population is expected to rise from 13.8% in 2017 to 20.3% in 2025, and 46.5% in 2067. This means that the elderly aged over 65 will be the major residents of cities. Hence, it is necessary to transform local facilities and housing into age-friendly architecture so that the elderly can lead a daily life without inconveniences. In particular, as housing is the most fundamental space in our daily life, it is important to build a space reflecting the characteristics of the aged. However, there is a lack of evidence showing specifically which parts of the current architecture are not age-friendly. This research investigated elements in homes and community facilities that give the elderly troubles in order to identify features of Korean age-friendly housing and facilities. Based on research results, this poster suggested ways of institutional improvement to create age-friendly architectural space.

To collect data, a face-to-face survey was conducted from June to July 2021 for 1,500 Koreans aged 55 to 85. Samples were organized by considering the number of senior residents and sex ratio in 16 cities/provinces.

This research derived four characteristics of age-friendly architecture. First, a bathroom in a home was found to be the most inconvenient space for the elderly where a fall occurs often. A fall was, in many cases, associated with slippery surfaces, steep slopes, and dim lighting. Second, it was found that Korean seniors (25.2%) tolerate discomfort as they do not know the costs and methods of improving housing. Third, local community facilities often used by the elderly (98.5%) were small commercial facilities. The differing use of community facilities by age group was most prominent in cultural facilities. The younger seniors prefer movie theaters while the older people favored cultural centers mostly. Fourth, about 70% of respondents desired to continue to reside in present dwellings. 50% said that even when they cannot move well, they wanted to live in their current homes with visiting care. That is, they preferred “aging in place” to keep familiar space and existing social networks.

This research derived institutional improvements in three areas to convert Korean housing and community facilities to age-friendly spaces and environments. First, it is necessary to consider changes in the promotion and eligibility of housing renovation support projects currently underway at national and local government levels. Most of the survey respondents said that they did not remodel homes to install handrails and threshold ramps either because they did not feel they are significantly inconvenient or due to financial burden. Therefore, education and promotion are advisable to allow the elderly to recognize the necessity and importance of preventing safety incidents inside residences. In addition, eligibility for government support needs to be expanded to address the level of inconvenience instead of the income level of project beneficiaries. Second, although there is a regulation regarding buildings with mandatory barrier-free designs, the scope of the regulation is limited. Thus, extending the range of buildings subject to regulation needs to be considered. The elderly found steps, sloped roads, and entrance thresholds before main entrances of commercial, medical and sports facilities the most inconvenient. Third, it is advisable to upgrade this study’s investigation to a state-led one. This poster suggests that before policies for the elderly are implemented, it is important to continue finding problems by identifying and preventing difficulties of the aged in daily lives so that they can enjoy aging in place.

Citations

- AARP. (2020). Home Fit Guide. American Association of Retired Persons.
- WHO. (2007). Global Age-friendly Cities: A Guide. Geneva: World Health Organization.
- WHO. (2007). Checklist of Essential Features of Age-friendly Cities. Geneva: World Health Organization.
- Ministry of Health and Welfare. (2020). 2020 Korean National Survey of the elderly. Sejong: Ministry of Health and Welfare.
- Statics Korea. (2019). Population Projections (2017 ~ 2067) for the whole country and 17 cities & provinces on the basis of the results from the 2017 Register-based Population Census. Sejong: Statics Korea.

Key Words: Age-friendly Architecture, Age-friendly Housing, Aging in Place, Age-friendliness Survey

STREETSCAPES AS A PART OF SERVICESCAPES: HOW CAN WALKABLE STREETSCAPES MAKE LOCAL BUSINESS MORE ATTRACTIVE?

Abstract ID: 1512

Poster

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Background: Walkable streetscapes and attractive local businesses have a reciprocal relationship. On the one hand, attractive local businesses can make cities more walkable by providing destinations to walk to. On the other hand, past studies characterized walkability by operationalizing accessibility (i.e., proximity and connectivity to various destinations) and argued that accessibility can support local businesses by attracting more customers.

What is much less discussed in the literature is how walkable streetscapes in microscale (i.e., the urban design characteristics, pedestrian infrastructures, and their quality in each street segment) may contribute to local business. Walkable streetscapes can contribute to the quality of walking experience by providing crime safety, traffic safety, and pleasurable aesthetics. Some argue that various components of walkable streetscapes can collectively contribute to place-making and be conceived as a part of the retail habitat, which then positively influences the consumers’ experience. In other words, walkable streetscapes can be part of Servicescapes – physical settings and environments that affect customers’ inference of the service quality and overall satisfaction. There is a plethora of research on the cognitive and behavioral impacts of indoor servicescapes, which can be controlled by the service organizations. The surrounding street environment, however, has been far less discussed yet is also of great import in the creation of the place-identity.

Objective: This study attempts to fill this gap by examining the relationship between customer satisfaction from Yelp

and walkable streetscapes measured from street view images, adjusting for store-specific characteristics, neighborhood-specific socioeconomic characteristics, and accessibility aspects of walkability.

Methods: Yelp rating scores for cafes, restaurants, and bars (1 being the worst; 5 being the best; 0.5 increments) were collected through API as the proxy of customer satisfaction (dependent variables). The accessibility aspect of walkability was characterized by Walk Score, distance from the city center, and population and employment density. The quality of streetscapes was measured using computer vision and Google Street View images, including traffic safety features on sidewalks (sidewalk buffers, maintenance quality of sidewalks, and bike lanes), traffic safety features at intersections (walk signals, curb ramps, and crosswalks), and crime safety (graffiti, streetlights, rundown buildings), and pleurability (building-to-street ratio, greenness, seating). The proportion of the minority population and median household income were collected as controls. Multiple linear regression models were employed to examine the correlates of Yelp rating scores.

Results: The model showed that Walk Score and population and employment density showed negative associations with Yelp rating. Distance from the city center was the only accessibility measure that showed a positive association with customer satisfaction. After adjusting for covariates, traffic safety features on sidewalks (i.e., traffic safety on sidewalks) and building-to-street ratio and greenness (pleurability) were positively associated with consumer satisfaction.

Findings: This study shows walkable streetscapes can support local businesses by providing a favorable environment that can add to customer satisfaction, even after controlling for the commonly used walkability measures. This study adds to the literature by demonstrating that walkable streetscapes in microscale can provide economic benefits that are distinct from those of accessibility-based walkable measures.

Citations

- Koo, B. W., Guhathakurta, S., & Botchwey, N. (2022). How are neighborhood and street-level walkability factors associated with walking behaviors? a big data approach using street view images. *Environment and Behavior*, 54(1), 211-241.
- Bitner, M. J. (1992). Servicescapes: The impact of physical surroundings on customers and employees. *Journal of marketing*, 56(2), 57-71.
- Koo, B. W., Guhathakurta, S., & Botchwey, N. (2022). Development and validation of automated microscale walkability audit method. *Health & place*, 73, 102733.
- Pivo, G., & Fisher, J. D. (2011). The walkability premium in commercial real estate investments. *Real Estate Economics*, 39(2), 185-219.
- Alfonzo, M. A. (2005). To walk or not to walk? The hierarchy of walking needs. *Environment and behavior*, 37(6), 808-836.

Key Words: Walkability, Computer Vision, Streetscape, Servicescape, Customer Satisfaction

A STUDY ON KOREAN AGE-FRIENDLY URBAN ENVIRONMENT FEATURES THROUGH A SURVEY OF KOREAN SENIORS' PERCEPTION AND SATISFACTION WITH OUTDOOR SPACES AND FACILITIES

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Poster

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Korea is expected to reach a higher level of aging than Japan or Western advanced countries in the early 2040s. In comparison to the rapid aging in Korea, there is a lack of response to creating age-friendly urban environments for Korean seniors. The first task to prepare Korean age-friendly cities must start with understanding the current state of responding to the super-aged society in Korea. Even though the National Survey of Senior Citizens in Korea has been conducted, the National Survey neglects actual usage and satisfaction of the elderly in the daily living facilities and places.

The purpose of this study is, therefore, to figure out how Korean urban environments prepare for the super-aged society through a survey on the perception and satisfaction of the elderly in the urban environment. The questionnaire items were drawn from the WHO Age-Friendly Cities Guide (WHO, 2007) and organized the final questionnaire items after collecting opinions from experts and practitioners. The final 76 questions related to the urban environment for Korean seniors were classified into external space and facilities, public transportation and facilities, and residential environment. The subjects of this survey were Korean seniors aged 55-84 years who have lived in the survey area (16 cities/provinces) for more than 3 years. This survey was conducted from July 23 to August 30, 2020, and a total of 1,604 elderly people responded to the survey.

The main findings are as follows. First, it was found that the pedestrian road is the most inconvenient and also the most possible place to experience a fall for Korean seniors (22.6%). It was also found that many Korean seniors (30.6%) had to go down the vehicle road instead of the pedestrian path due to illegally occupied objects such as signboards and cars. It is necessary to create a safe walking environment for Korean seniors by improving the quality of the pedestrian road, separating the walking area, and removing obstacles in the walking area. Second, it was found that there were not enough facilities and places for the elderly (25.9%) to take a break while walking. Because it is difficult for the elderly to walk long distances, it is necessary to expand resting facilities around the pedestrian road. Along with the quantitative expansion of resting facilities, the armrests and backrests need to be installed to reflect the physical characteristics of the elderly. Third, this study found that securing the crossing time was necessary to consider the walking speed of the elderly for safe walking and crossing. The elderly (13.6%) felt uncomfortable because they did not have enough time to crosswalk, and the extension of the traffic light time as an improvement point for the crosswalk showed the highest response rate. Fourth, the facilities that Korean seniors need the most within walking distance were found to be high in the order of sports facilities (29.8%), welfare facilities (24.3%), and medical facilities (18.3%). Finally, as a result of the survey on the intention to continue living in the current community, it was found that the intention to continue living in the same community was very high overall (90.0%), although there were differences by region. This suggests that efforts should be made to create an age-friendly urban environment in which the elderly can live for a long time without difficulties in the area where they have lived.

This survey study is meaningful in that it suggested a direction for improving accessibility, safety, and convenience for elderly people through major facilities and places to construct an age-friendly urban environment, such as pedestrian paths, parks, crosswalks, public toilets, rest/convenience facilities, and public transportation facilities.

Citations

- AARP. (2018). 2018 AARP Home and Community Preferences Survey. AARP.
- WHO. (2007). Checklist of essential features of age-friendly cities. Geneva: World Health Organization.
- WHO. (2007). Global Age-friendly Cities: A Guide. Geneva: World Health Organization.
- WHO. (2015). Measuring the Age-Friendliness of Cities. Japan: World Health Organization.

Key Words: Age-friendly City and Community, Age-friendly Urban Environment, Age-friendliness Survey, Aging in Place/Community

SEEING STREETSCAPE AS SOCIAL INFRASTRUCTURE: A PARADIGMATIC CASE STUDY OF HORNSBERGS STRAND, STOCKHOLM

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Poster

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Streets are an integral component of neighborhoods where people spend time every day (Mehta, 2013). Streetscapes refer to the design and conditions of roadways that impact street users and local residents. "Streetscapes are an important component of the public realm (public spaces where people interact), which help defines a community's aesthetic quality, identity, economic activity, health, social cohesion and opportunity, not just its mobility" (Victoria Transport Policy Institute, 2018). The physical and visual experience of the streetscapes influences the interactions and activities people can and do have in public space (De Vries, 2013). Robert Putman argues that social capital is a geographic concept since the relationships of people are shaped by the places in which they live. This conception lends support to an environmental argument from which Klinenberg's (2018) construct of social infrastructure stems. He argues that social infrastructure determines social capital. Although there is extensive literature on the socio-economic value of social capital, as well as its impact on health and well-being (eg. Spokane, et al. 2007), the linkage between urban design and planning and social infrastructure that builds social capital is under-explained. The present study addresses this gap by exploring how urban design enables streetscapes as social infrastructure.

The overall aim of the study is to investigate attractive urban neighborhoods undergoing densification to explore how urban design can enable streetscapes to deliver social and health benefits. More specifically, the study aims to improve understanding of how the design, management and use of streetscapes can impact the probability of social interactions and social support. The study employs a paradigmatic case study placing a case alongside a phenomenon and charting the elements of that case to elucidate the phenomenon to which it belongs. The chosen case study is the street Hornsbergs Strand, located at the waterfront in a relatively newly built dense neighborhood Hornsberg in Stockholm's inner city area. It was selected for its seemingly controversial qualities – "attractive" and "overcrowding". A mixed-methods, including literature review, document analysis, participatory observations and semi-structured expert interviews were conducted, incorporating spatial and temporal aspects. Thematic analysis was performed to analyze the data. The findings highlight the potential of urban design and planning to unlock streetscapes' potential to serve as social infrastructure, considering of both spatial and temporal aspects, to deliver social and health benefits by

facilitating more social interactions and greater social support. The implications for public policy, urban development and investment in social infrastructure employing place strategies and design interventions are discussed.

Citations

- De Vries, S., Van Dillen, S.M., Groenewegen, P.P. and Spreeuwenberg, P., 2013. Streetscape greenery and health: stress, social cohesion and physical activity as mediators. *Social science & medicine*, 94, pp.26-33.
- Klinenberg, E., 2018. *Palaces for the people: How social infrastructure can help fight inequality, polarization, and the decline of civic life*. Broadway Books.
- Mehta, V., 2013. *The street: a quintessential social public space*. Routledge.
- Spokane, A. R., Lombard, J. L., Martinez, F., Mason, C. A., Gorman-Smith, D., Plater-Zyberk, E., ... & Szapocznik, J. (2007). Identifying streetscape features significant to well-being. *Architectural Science Review*, 50(3), 234-245.
- Victoria Transport Policy Institute. (2018). *Streetscape improvements – Enhancing urban roadway design*. TDM Encyclopedia.

Key Words: streetscape, public space, wellbeing, urban design, temporary design intervention

USING WALK AUDIT AS A TOOL OF CITIZEN ENGAGEMENT AND COMMUNITY-BASED SERVICE LEARNING: A CASE STUDY OF LOCAL GRASSROOTS INITIATIVE IN ARLINGTON, TX

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Poster

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From citizen participation to citizen empowerment (Arnstein, 1967; Rocha, 1997), planning theory recognizes the importance of public engagement in urban planning practice and education, and calls for creating the capacity of engaging in the process (Nussbaum, 2013). This is especially important while the planning paradigm shifts from the rational technician to the communicative action and interactive practice in planning (Innes, 1995). More than ever, planning practice is witnessing the impact of citizen-empowered participation as well the outcome of citizen capacity building through community development projects.

This research poster provides a case study of how a student-led grassroots organization has successfully embedded citizen engagement and service learning into the local urban planning agenda through walk audit activities. A walk audit is an activity in which a team, or an individual, intentionally observes the surrounding environment in a participatory way and evaluates the condition of the walkability of the examined area. In this case, the walk audit project was a result of collaborative planning activity between the local grassroots organization, Walkable Arlington, the neighborhood association (Heart of Arlington Neighborhood Association, HANA), city council members, as well as the urban planning classroom at the University of Texas at Arlington.

In this study, we examine the initiation, process, outcome, implementation, and implication of the walk audit projects conducted from Summer 2021 to Spring 2022. Using the ArcGIS survey tool ("Survey123") and field notes, different groups of citizens and students were led by the walk audit guide to walk around multiple neighborhoods in Arlington, TX. The goal of these walk audit projects is to observe the pedestrian and walkability-related built environment and to document the observational outcome. Based on the mini-ethnography studies in the walk audit, the organization then led the citizens and students to create a final Walk Audit Report to share with the Arlington City Council and the University of Texas at Arlington. The reports present the findings upon environmental assessments and generate actionable items for the agencies, including actions requested for the short term, mid-term, and long term. As an outcome of the walk audit projects, the City of Arlington has added multiple walkability enhancement plans in response to the advocacy of the walk audit projects by the end of March 2022, including the 2022 Nathan Lowe & Downtown Sidewalk Improvements project which provides \$900,000 funding support for the sidewalk replacement and construction projects in Downtown Arlington.

Citations

- Arnstein, S. R. (1967). A Ladder of Citizen Participation. *Journal of the American Planning Association*, 35(1), 24–34. <https://doi.org/10.1080/01944363.2018.1559388>
- Nussbaum, M. (2013). *Creating Capabilities: The Human Development Approach*. Belknap Press. <https://www.hup.harvard.edu/catalog.php?isbn=9780674072350>

- Rocha, E. M. (1997). A Ladder of Empowerment. *Journal of Planning Education and Research*, 17(1), 31–44.
<https://doi.org/10.1177/0739456X9701700104>

Key Words: citizen participation, walk audit, planning process, community development

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- Afful, Adwoa (afful.adwoa@gmail.com) ... 1407
- Agrawal, Sandeep (sagrawal@ualberta.ca) ... 1221, 1254, 1255, 1434, 1763, 1877, 1958
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- Aidoo, Fallon Samuels (faidoo@uno.edu) ... 1424
- Aiken, Claudia (claudf@design.upenn.edu) ... 1974
- Airgood-Obrycki, Whitney (whitney_airgood-obrycki@harvard.edu) ... 1155, 1306
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- Andrews, Bi'Anncha (andrews1@terpmail.umd.edu) ... 1948
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- Anjum, Khadija (khadija.anjum@yahoo.com) ... 2045
- Appleyard, Bruce (bappleyard@sdsu.edu) ... 1676
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- Baek, So-Ra (sbaek@cpp.edu) ... 1236
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- Basile, Patricia (pdetoled@iu.edu) ... 1116, 1137, 1979
- Basu, Rounaq (rounaq@mit.edu) ... 1430, 1751
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- Batra, Divij (divij.bat@tamu.edu) ... 1855
- Beard, Victoria (vab57@cornell.edu) ... 1510
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- Begwani, Charuvi (charuvibegwani@gsd.harvard.edu) ... 1157
- Behar, David (dbehar@swater.org) ... 1831
- Bejleri, Ilir (ilir@ufl.edu) ... 2014
- Belkadi, Meryem (meryem.belkadi@alumni.ubc.ca) ... 1141, 1954
- Belloy, Patricio (patricio.belloy001@umb.edu) ... 1675
- Benaroya, Anne (anne.benaroya@ryerson.ca) ... 1667
- BenDor, Todd (bendor@unc.edu) ... 1506, 2042
- Benjamin, Andrea (andrea.benjamin@ou.edu) ... 1090
- Ben-Joseph, Eran (ebj@mit.edu) ... 1435
- Benkraouda, Ouafa (ouafab2@illinois.edu) ... 1955
- Benson, Jenna (jenna.benson@utah.edu) ... 1598
- Berglund, Lisa (lisa.berglund@dal.ca) ... 1109
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- Berke, Timothy (tberke@umich.edu) ... 1370
- Bernal, Declan (dabernal@scu.edu) ... 1379
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 Conville, Megan (megan.conville@gatech.edu) ... 1950
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 Session 25, Session 55
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 1346
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 9
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 1979
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 1351, 1903
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 1758
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 ... 1927
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 1845, 1974
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1870
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 Encarnacion, Angeliz (angeliz.encarnacion@upr.edu) ... 1928
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 Farah, Irene (irenef@berkeley.edu) ... 1905
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 Fitch, Dillon (dtfitch@ucdavis.edu) ... 1861, 1900
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 Foster, Nicole (nfoster@northland.edu) ... 2046
 Fox-Dichter, Sophia (sophiafox-dichter@wustl.edu) ... 1965
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 Jiao, Junfeng (jjiao@austin.utexas.edu) ... 1191, 1347, 1359, 1369, 1917
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 1605
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 1709
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 Lee, Narae (narael@uci.edu) ... 1924
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 1047
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 Li, Ning (ningli@ewu.edu) ... 1975
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