



6th International Research Symposium in Service Management, IRSSM-6 2015, 11-15 August
2015, UiTM Sarawak, Kuching, Malaysia

Sustainable Public Transit Service Value Network for Building Living Cities in Emerging Economies: Multiple Case Studies from Public Transit Services

Samuel Petros Sebhatu^{a,*}, Bo Enquist^b

^{a, b} SAMOT - Service and Market Oriented Transport Research, Karlstad University, Karlstad, Sweden

Abstract

The main aim of this paper is to assess and analyse how sustainable public transit (SPT) services contribute to building living cities in emerging economies through value network and resource integration/value co-creation, which is embedded on societal and environmental perspectives. The main theoretical and empirical challenges are how to understand public transport as dynamic and transformative values based service eco-system for living city regions to develop and implement a feasible and proactive tool for changing the mind-set, which is embedded on societal and environmental perspectives. The objective is to look deeper on how these emergent and fast growing cities are put together STP for building cities for people by focusing on societal and environmental issues, which value network of SPT are integrated and value is co-created within the service system. The paper has an explorative nature. It is built around three concepts - (i) SPT and value network (ii), resilient living cities in emerging economies and (iii) Societal and environmental perspectives. The paper illustrates these concepts with four different cases from Cape Town - South Africa, Buenos Aires – Argentina; Singapore - Singapore, and Jakarta - Indonesia. The study has identified the challenges of transforming emergent and fast urbanized cities, and understanding the role of public transport services from the cities perspective in an international context by embedding social and environmental perspectives. The challenges of transforming today's cities have created many new opportunities for prosperity through new ways of living and working in urban areas. The paper makes a contribution to the study of public transit services by explicitly linking the adoption of SPT value network in emerging economies based on sustainability, and resource integration/value co-creation for building resilient living cities.

© 2016 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license
(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the Universiti Teknologi MARA Sarawak

Keywords: value network; services; living city; public transit system; social and environmental embedded-ness; transformative services; emerging economies

* Corresponding author. Tel.: +4-654-700-2163.

E-mail address: samuel.sebhatu@kau.se

1. Introduction

Public Transport as a dynamic and transformative (Anderson, 2013) values-based service eco-system (Enquist and Sebhata, forthcoming) is fundamentally embedded on the role of governmental agencies and other stakeholders in the network (Enquist & Johnson, 2013). Public Transport, today, is built upon transforming proactive city regions by developing sustainable and living cities (Kallidaikurichi & Yuen, 2010), especially in the emerging economies. The transformation has demanded an incremental progress towards transformational action (Ostrom, 2014) for shaping an inclusive and sustainable business (Williams, 2014) for living cities. These cities are in transition for a transformative change (Grin et. al., 2010), which is built upon dynamic city networks and open to learn and innovate (Campbell, 2012) a resilient infrastructure (Newman, 2010). Living cities have to be resilient to last and respond on crisis for change and build upon consensus around cooperation and partnership (Newman et al., 2009). The opposite is cities built upon fear which make decisions based on short-term responses and the only driving force is competition (ibid.) However, the main challenge is lies on breaking the norm of using cars in the city (Hajer et al., 2012; Gärling et al., 2013) and to find an alternative discourse for a sustainable living city.

The main theoretical and empirical challenges in this paper are how to understand public transport as a dynamic and transformative values based service eco-system for living city regions to develop and implement a feasible and proactive tool for changing the mind-set, which is embedded on societal and environmental perspectives. The objective is to look deeper on how these emergent and fast growing cities are put together as sustainable public transit (SPT) for building cities for people by focusing on societal and environmental issues in which value network of SPT are integrated and value is co-created within the service system. The paper discusses the challenges of transforming emergent and fast urbanized cities, and understanding the role of public transport services from the cities perspective in an international context by embedding social and environmental perspectives. The challenges of transforming today's cities, which has created many new opportunities for prosperity through new ways of living and working in urban areas (Florida, 2010).

In this paper, we illustrate and discuss three concepts - (i) SPT value network (ii), resilient living cities in emerging economies and (iii) Societal and environmental perspectives in the theoretical framework section. In the next section, the paper presents the methodological part of the thesis and the four different SPT cases from Cape Town-South Africa, Buenos Aires - Argentina; Singapore - Singapore, and Jakarta -Indonesia. In the discussion part the focus is on describing the challenges of transforming cities in these emerging countries, and understanding the role of public transport services from the cities perspective in an international context by embedding social and environmental perspectives. This aims at describing the challenges of transforming cities, and understanding the role of public transport services from the cities perspective in an international context by embedding social and environmental perspectives. Future research in this area should focus on generalizing the present findings by studying the development and integration of SPT value network thinking in other empirical settings and conceptualization, for instance resilient living cities.

2. Theoretical framework

In today's limited available urban space, operating a complex traffic system and allowing public transport to prevail over most of the traffic is challenging. Public Transport as a dynamic system is vital to the role of cities, governmental agencies and other stakeholders in the network towards creating a transformational action for shaping inclusive and resilient living cities. These ideas also are argued by Enrique Peñalosa (former mayor of Bogota) , (2014).

“In Bogotá, our goal was to make a city for all the children. The measure of a good city is one where a child on a tricycle or bicycle can safely go anywhere. If a city is good for children, it will be good for everybody else. Over the last 80 years we have been making cities much more for cars' mobility than for children's happiness.”

He believes that one day these cities offer us lessons about providing everyone with equal accesses to happiness. Resilient Cities are needed to last and respond on crisis for change and build upon consensus around cooperation

and partnership (Newman et al., 2009). The opposite is city built upon fear, which make decisions based on short-term responses and the only driving force is competition (ibid.) The challenge is to breaking the norm of using cars in the city (Hajer et al., 2012; Gärling et al., 2013) and to find an alternative discourse for a resilient living city. There, we also address Jan Gehl's thoughts on "cities for people" in which public transport, cycling and walking are key for a sustainable and vibrant city. He indicates that "The compact city – with development grouped around public transport, walking and cycling - is built around public transport, walking and cycling - is the only environmentally sustainable form of city. However, for population densities to increase and widespread walking and cycling, a city must increase quantity and quality of well-planned beautiful urban spaces that are human in scale, sustainable, healthy, safe and lively certainly alive (Gehl, 2010). In this paper, we see public transport as a service eco-system (Lusch & Vargo, 2014) used as a tool for proactive developing of city regions for living cities (Kallidaikurichi & Yuen, 2010). These cities are in transition for a transformative change (Grin et al., 2010): dynamic city networks, which learn and innovate (Campbell, 2012), resilient infrastructure cities (Newman, 2010) and cities as a world of mobile lives (Elliott & Urry, 2010).

2.1. Sustainable public transit and value network

Developing a resilient and living city has a counter effect on sustainable development. The emergence of greening, especially "climate change" is one of the lead way developments in transport sector, which provides the input to deal with the transformation process of integrating sustainability into new infrastructural changes. The transport sector consumes 2,200 million tons of oil equivalent (mtoe) constituting about 19% of global energy supplies. Driven by increases in all travel modes, some sources expect the energy consumption of the transport sector to increase by between 80% and 130% above today's level (World Energy Council, 2011). The transport sector also has the second biggest greenhouse gas emissions (GHG) in the EU, which is responsible for 24, 3% of the GHG. Greenhouse gas emissions in other sectors decreased 15% between 1990 and 2007, but emissions from transport increased 36% during the same period. Despite this trend of continuous reduction between 2006 and 2012 the transport emissions were in 2012 still 20.5 % above 1990 levels and would need to fall by 67 % by 2050 (EU Action, 2015). Thus, it is of vital importance to assess how transportation and development can be made more sustainable, especially in rapidly growing cities; the role of regional development toward a sustainable development and a sustainable public transport (SPT) system. Public transport challenges take a sustainable way of thinking into account, based on environmental "Eco-Efficiency" and social sustainability with inclusion of all stakeholders, to provide better service, and efficiency. A sustainable way of thinking is important to create a value network by engaging local stakeholders (Hart, 2007). Friedman (2008) argues that we do not regulate us out of the environmental crisis, we only innovate us out of it. An unsustainable society affects climate and bio-diversity by over-consuming finite resources (ibid). The society and humanity stands for big challenges regarding climate and environmental crisis. SPT, in other words, has a harmonizing role to the economic, social, and environmental needs of the communities they serve, based on sustainable systems and thinking towards building a resilient living city. There is no universally accepted definition of sustainability, sustainable development or sustainable transport (Beatley, 1995). "Sustainable Development" in management is related to a socio-political concept, which is part of stakeholder thinking. MOST (1999), describes SPT as the goal of sustainable transportation to ensure that environment; social and economic considerations are factored into decisions affecting transportation activity. The essence of this form of development is a stable relationship between different activities and the natural world, and society. A touchstone for innovation is not a burden on bottom lines (Nidumolu et al., 2009). Sustainability driven innovations are not restricted to new products, services, and processes. It is also a way to a new view of organizations for what they are, what they do and how they relate to social environmental and political concerns in a manner previously unthinkable (Demirag et al., 2005).

3. Research methodology and empirical study

The construct of this case study is "designed with purpose" (Harrison & Freeman, 1999) to analyze and conduct an in-depth study of the role of sustainable public transport services and its effects on building living cities in

emerging economies through value network and resource integration/value co-creation. The case study method was chosen in order to assess and reveal the strength and extremity (Yin, 1994) of the organizational change for creating sustainability and value and its role on value creation. The study focuses on narrating (Pentland, 1999) the cases of Cape Town, Buenos Aires, Singapore, and Jakarta. We have been studying the different public transport cases for several years. This has involved: (i) Interviews with public transit authorities, scholars and stakeholders (Mishler, 1986) (ii) the extensive perusal of documents; the collection of narratives from the media, the Internet, books and other sources; and (iii) supervision of several masters' theses in the case of Jakarta and on related areas. This extensive research involvement has provided us with a solid basis for selecting representative empirical data for this article.

This paper is of an explorative comparative study based on the public transport value networks in four city regions – Cape Town, Buenos Aires, Singapore, and Jakarta. In this study, we see public transport as a service ecosystem used as a tool for proactive developing of resilient and living city regions. These cities are in transition for a transformative change with dynamic city networks. But, they have big transformative challenges to meet. Here are the cities based on our current research:

Cape Town: Transforming the city: Current road based public transport system need to develop based on integrated public transit (IRT) vision: through inter alia the provision of BRT services, operating service contracts, institutional reform and the transformation of the existing public transport industry. This also will include the integration of para-transit services to provide customers with wider and safer services and sustainable solutions embedded in the social context.

Buenos Aires: Micro-environmental flexibility: This raises the issue of the importance of complexity of context and understanding it from different contexts, which suggests the need to adopt micro-environmental flexibility. Micro-environmental flexibility means that even within a same city, regional differences (e.g. commercial versus residential) are vital as they involve different stakeholders. As a result diverse resource integrations take place, leading to different value co-creations, i.e., different Metrobus designs. The take away is that in order not to confuse flexibility with chaos it is essential to have a clear goal which acts as the ultimate benchmark. In the Metrobus case it was prioritizing people over cars.

Singapore: Integrated system: Singapore has a highly centralized, unitary government with a unicameral legislature. Singapore is one of the world's major commercial hubs, with the fourth-biggest financial Centre and one of the five busiest ports. Transport within Singapore is mainly land-based. Connecting people and places at the same time enhancing travel experience are the key mission for Singapore Land Transport Authority (LTA). The phrase “transforming daily journeys” is borne of the incredible work happening at LTA on all fronts: rail, bus, taxi, road, cycling, planning, IT. Excellent infrastructure and quality service are the essential building blocks of a strong land transport system. Singapore's public bus industry's move to the new “Government Contracting Model”, which will enable the Government to make public bus services more responsive to changes in ridership and commuter needs.

Jakarta: Developing policies and challenge of Implementation: Growth of car population has doubled during the year 2000-2010, and also in such period, the number of motorcycles increased 4.6-times. The rapid growth of motorcycle ownership in society could be as this mode of transport gives easiness to escape from congestion in the road and its affordable price (Yagi et al., 2013). This makes congestion in Jakarta is getting serious by the time. Losses arising as a result of bottleneck also evaluated more wasted time, fuel costs, and health costs. Strategies to overcome the congestion situation in town should be immediately taken, through the development of a sustainable transport system with the accessibility and environmental friendly.

4. Discussion

Transforming cities and understanding the role of public transport services from the cities' perspective in an international context by embedding social and environmental perspectives is becoming very challenging. In this study, we focus on emerging economies with fast growth in terms of expansion and urbanization as it influences sustainable public transit services growth. Urbanization has placed pressure upon cities that challenge their ability to promote, develop, provide and support services. These cases are facilitating by looking deeper into how these emergent and fast growing cities put together sustainable public services for building cities for people by focusing on societal and environmental issues. Public Transport as a dynamic system is vital to the role of cities, governmental agencies and other stakeholders in the network towards creating a transformational action for shaping inclusive and resilient living cities. Transformative and integrated transport system for living city regions in emerging countries also are given a due slant for societal and ecological perspective in response to the many demands especially equality, democratization, engagement and environment. On the international level, case studies help us to learn and understand the challenges and opportunities of sustainable and integrated transport system and transforming cities – beyond single systems of BRT – bus rapid transit, LRT- light rail transit and MRT- mass rapid transit. The main theoretical and empirical contributions are how to understand public transport as dynamic and transformative values based service eco-system for living city regions to develop and implement a feasible and proactive tool for changing the mindset too.

References

- Anderson L., Ostrom, A. L., Corus, C., Fisk, R. P., Gallan, A. S., Giraldó, M., Mende, M., Mulder, M., Rayburn, S. W., Rosenbaum, M. S., Shirahada, K., & Williams, J. D. (2013). Transformative service research: An agenda for the future. *Journal of Business Research*, 66(8), 1203-1210.
- Beatley, T. (1995). Planning and sustainability: the elements of a new (improved?) Paradigm. *Journal of Planning Literature*, 9(4), 383-395.
- Campbell, T. (2012). *Beyond smarter cities – how cities network, learn and innovate*. New York: Earthscan, Routledge.
- Demirag, I., Barry, J., & Khadaroo, I., (2005). Concluding remarks on emerging governance structures and practices: the state, the market and the voice of civil society; in I. Demirag (Ed.), *Corporate Social Responsibility, Accountability and Governance: Global Perspectives* (pp.351-360). Sheffield: Greenleaf Publishing.
- Elliott, A., & Urry, J. (2010). *Mobile Lives*. Abingdon: Routledge.
- Enquist, B., & Johnson, M. (2013). Styrning och navigering i regionala kollektivtrafiknätverk. Karlstad: Karlstad University Studies # 2013: 14.
- Enquist, B., & Petros Sebhata, S. (forth coming). *The Moral Dilemma of City for People: The challenges of Values-based Governance*. Presented at International Marketing Ethics and Corporate Social Responsibility: Academic Symposium in Rome April 2015 hosted by Notre Dame University, USA.
- EU-European Union-Action (2015). Reducing Emissions from Transport, Climate action. Available at http://ec.europa.eu/clima/policies/transport/index_en.htm, retrieved on May 2015.
- Florida, R. (2010). *The great reset: how new ways of living and working drive post-crash prosperity*. New York: Harper Collins.
- Friedman, T.L. (2008). *Hot, flat and crowded: why we need a green revolution – and how it can renew america*. New York, NY: Farrar, Straus & Giroux.
- Gehl, J. (2010). *Cities for people*. Washington: Island Press.
- Grin, J., Rotmans, J., & Schot, J. in collaboration with Geels, F. and Loorbah, D (2010). *Transitions to sustainable development – new directions in the study of long term transformative change*. New York: Routledge.
- Gärling, T, Ettema, D., & M. Friman (Eds.) (2013). *Handbook of sustainable travel*. Heidelberg: Springer.
- Hajer, M., Hoen, A., & Huitzing, H. (2012). *Shifting gear: Beyond classical mobility policies and urban planning in van wee, b (ed) keep moving*. Hague: Eleven International Publishing.
- Hart, S.L. (2007). *Capitalism at the crossroads aligning business, earth, and humanity*. (2nd ed.). New Jersey, Upper Saddle River USA: Wharton School Publishing.
- Harrison, J., & Freeman, E. (1999). Stakeholders, social responsibility and performance: empirical evidence and theoretical perspectives. *Academy of Management Journal*, 42(5), 479-485.
- Kallidaikurichi, S., & Yuen, B. (Eds.) (2010). *Developing living cities – from analysis to action*. Singapore: World Scientific Publishing Co. Pte. Ltd.
- Lusch, Robert F., & Vargo, Stephen L. (2014). *Service-dominant logic: premises, perspectives, possibilities*. Cambridge, UK: Cambridge University Press.
- Mishler, E.G. (1986). *Research interviewing: context and narrative*. Cambridge, MA: Harvard University Press.
- MOST (Moving on Sustainable Transportation). (1999). Transport Canada. Available at www.tc.gc.ca/envaffairs/most.

- Newman, P. (2010). *Resilient infrastructure cities in Kallidaikurichi, s. and yuen, b. (eds.) developing living cities – from analysis to action*. Singapore: World Scientific Publishing Co. Pte. Ltd.
- Newman, P., Beatley, T., & Boyer, H. (2009). *Resilient cities responding to peakoil and climate change*. Washington: Island Press.
- Nidumolu, R., Prahalad, C.K. & Rangaswami M.R. (2009). Why sustainability is now the key driver of innovation. *Harvard Business Review*, 87(9), 56-64.
- Ostrom A. L., Mathras, D., & Anderson L. (2014). Transformative service research: an emerging subfield focused on service and well-being, *Handbook of Service Marketing Research*. Cheltenham, UK: Edward Elgar Publishing Ltd.
- Peñalosa, Enrique (2014). Keynote speaker at Persontrafik 2014, Stockholm, 28th of October.
- Pentland, B. T. (1999). Building process theory with narrative: from description to explanation. *The Academy of Management Review*, 24(4), 711-24.
- World Energy Council (2011). *Global transport scenarios 2050*. London, UK: World Energy Council.
- Williams, O. (2014). *Corporate social responsibility – the role of business in sustainable development*. New York: Routledge.
- Yin, R.K. (1994). *Case study research: Design and methods* (2nd ed.). Newbury Park, CA: SAGE.