Addressing Information Infrastructure Inequality During the COVID-19 Pandemic with the Latinx Community

Abstract. This poster presents preliminary findings of a two-phase project in which we use Participatory Research to develop with members of the Latinx community an information infrastructure to address structural information inequalities. We unveil findings from the first phase showing active invisibilization and purposeful overlooking as institutional barriers. We also show civil society engaging in seamful work to address community needs. We identify infrastructure characteristics for an Alternative Sociotechnical Infrastructure and propose the following steps to engage community members in its design. This project brings a new perspective to the study of sociotechnical infrastructure and crisis by adopting the Latinx community's perspective and highlights the usefulness of a PAR approach to addressing determinants underlying infrastructure inequities.

Keywords: Alternative Sociotechnical Infrastructure, Social Justice, Latinx, Participatory Research, Crisis, Health Information.

1   Introduction

During the COVID-19 pandemic, Latinx people were disproportionately impacted with significantly higher spread rates and related morbidity (Chishti & Bolter, 2020). This phenomenon is a symptom of health inequities in Latinx communities (Mudd-Martin, 2019). However, underlying social and structural determinants are rarely addressed in efforts to reduce them (Eubanks 2012). The purpose of this study is to assess one such determinant and develop a feasible community-based approach to addressing it. This deficit negatively impacted their ability to coordinate effective COVID-19 response efforts (personal communication with the COVID-19 Latinx Community Response Coalition, September 8, 2020).

Specifically, this multidisciplinary collaborative project brings together the Latinx community, civil organizations, and the local government in a medium-size Kentucky city. To building a sociotechnical community infrastructure to foster effective dissemination of health-related information. We engaged with a Kentucky city's Latinx community, civil society organizations, and the local government as collaborators for this pilot. During phase I, we collectively identified ICT uses, gaps, needs and then built an Alternative Sociotechnical Infrastructure (ASI) prototype. During Phase II, we will engage community members to test the feasibility of the ASI and re-design it. This poster reports on preliminary findings from Phase I.

2   Theoretical Framework

Initiatives to address inequities often fail because they are designed from the top down without input from the target community (Holguin 2013). This project is guided by principles of participatory action research (PAR) (Freire, 1972; Minkler, 2005, Fals Borda, 2006) and employs a bottom-up approach. This project is further guided by the concept of "Alternative Sociotechnical Infrastructures" (ASI) (Espinoza-Vasquez, In Press), which refers to an infrastructure that integrates the existing organizations, Information Communication Technologies (ICT), data, stakeholders, and sharing practices into a parallel configuration. ASIs are autonomous seamful social and technical systems that civil society organizations create when their local institutional environment does not provide mechanisms to engage in their local political and economic life.

We do so through a mixed-method process which first identifies three levels of analysis. The macro-level conditions in which people live and navigate. In this case, the Latinx community needs to access the estate and local institutions that deal with health information. These are official provisions that either facilitate or hinder people's full participation in social life. Characterizing the macro-level allows us to understand the system's inequalities and misalignments, and it allows us to determine to what extent institutions are ready for minorities. The meso-level refers to organizational structures and practices that civil society organizations and community members engage in to address their needs and help people. The micro-level refers to the collective understandings that civil society, government, and members of the Latinx community have about their roles, positions in society, and information.

Thus, Alternative Sociotechnical Infrastructures help explain community practices under adverse institutional conditions while underlining their agency. It shows how Latinx people's expertise in their communities mediates how they manipulate organizational resources and technology to face the challenges brought on by crisis. (Espinoza Vasquez, In Press).

3   Methods

In this project, we employed Participatory Action Research (PAR) methodologies in two phases to build a digital information infrastructure that will connect the existing government, civil society, and Latinx community's information systems. During phase I, we collectively identified elements in the three levels of analysis and then built an ASI prototype. During Phase II, we will engage community members to test the feasibility of the Alternative Sociotechnical Infrastructure (ASI) and re-design it. This poster reports on preliminary findings from Phase I.

3.1   Collaborating with local stakeholders.

We engaged with our community partners to design and apply a **focus group** to unveil information and communication technologies (ICT) use, barriers, and information-

sharing strategies. Focus groups were conducted with (a) key local stakeholder organizations (b) Latinx community members in a medium-sized city in Kentucky. We established a network of collaborators with community leaders and organizations. We developed the **guide for the focus groups** with them. We purposefully and collaboratively sampled representative sectors of the Latinx community and targeted invitations to ensure representativeness. For each focus group (stakeholder and community), we invited 10 to 12 participants. We had four focus groups, which were conducted over Zoom due to the pandemic; they were recorded and transcribed.

3.2   Design infrastructure prototype using PAR techniques.

The researchers identified emerging themes at the macro, meso, and micro levels, which were presented to two participants from each focus group to validate the findings and interpretation. Informed by the findings, we developed the prototype wireframe, which we converted into an online Alternative Sociotechnical Infrastructure prototype.

4   Preliminary Findings

We collectively identified ICT uses, gaps, and needs during phase I, which informed the prototype of an alternative sociotechnical infrastructure. The focus group data suggest that that the Latinx community typically has the following pressing information needs:
- Schooling and education,
- Immigration,
- Housing regulation,
- Health information,
- Legal services,
- Civil rights,
- Professional development.

Civil society and government often work addressing those needs; however, there are barriers at macro, meso, and micro levels.

4.1   Macro-level: Systemic and institutional barriers

Official institutions exclude Latinx people in at least two ways, first, by actively invisibilizing them. Despite being the largest minority in the United States, the local government does not know how many Latinx people live in the area. Moreover, the allocated resources to provide services only allow for a few government staff members.

The second way is by purposefully overlooking the community. At the start of the pandemic, the lack of official information in Spanish became evident, so Rachel, a member of the community, offered translation services and a government official rejected it.

"They told me 'We do not want Spanish on our Facebook page, we do not want a Spanish press conference, we are afraid people are going to get upset'" (Rachel)

The local government later recognized the need and agreed to have *some* of the official information translated.

4.2   Meso-level practices: Seamful improvisations

The local civil society is organized into an extensive network, and during the pandemic, they engaged in seamful practices (Vertesi, 2014) to create a coalition to share information through bi-share information about the virus, testing, the vaccine, and other available aid. For example, they compiled and distributed a list of resources about financial aid, housing, immigration, and schooling available during the pandemic. Local civil society also improvised by adopting social media features they had not used before, like Facebook live. They also went in person to supermarkets frequented by Latinx people to distribute handouts and flyers.

However, members of civil society are aware there is a portion of the community they are not reaching. A participant said: *"I will interpret, we've done everything bilingually, try to make people feel included, but we've had very little participation."* They argue that the Latinx community relies on traditional and electronic word of mouth (e.g., WhatsApp) to share important information, yet they have been unable to successfully use these mechanisms based on strong ties and trust.

What is more, Latinx community members have their own ways of organizing informally; participants argue there are many community members supporting one another besides those who usually show up. Involving those groups will be essential for infrastructure development; therefore, it is crucial to make their organizations visible.

4.3   Micro-level: Help them belong

In terms of the Latinx community's shared understandings, participants argue that members of the Latinx community do not feel like they belong. Antonio, a participant, said: *"People don't know they are invited to the table"* Moreover, he argues it would "*be important to make it explicit that they are wanted and needed,"* particularly those who are recent immigrants.

4.4   The prototype

Using these insights, we created a Spanish language online ASI prototype. It is called Petate. A petate is a mat made of palm fabric used in Central America and Mexico to sleep, dry seeds, make toys and baskets. Petate symbolizes the fabric of the local Latinx community. We incorporated into Petate several features to address the needs raised in the focus groups.
- A forum Feature to facilitate discussion amongst stakeholders.
- A list of resources available for Latinx community members organized using a tag system. (e.g., health, education, legal services)
- A visual map of civil society and government organizations organized using a tag (See Fig. 1)

- COVID-19 live data focused on Latin America to address the need for official local data in Spanish. (See Fig. 2)
- A feature to call 911 in case of an emergency.
- Whatsapp feature that facilitates digital word-of-mouth communication.
- Calendar of events.
- Contact information for all organizations.

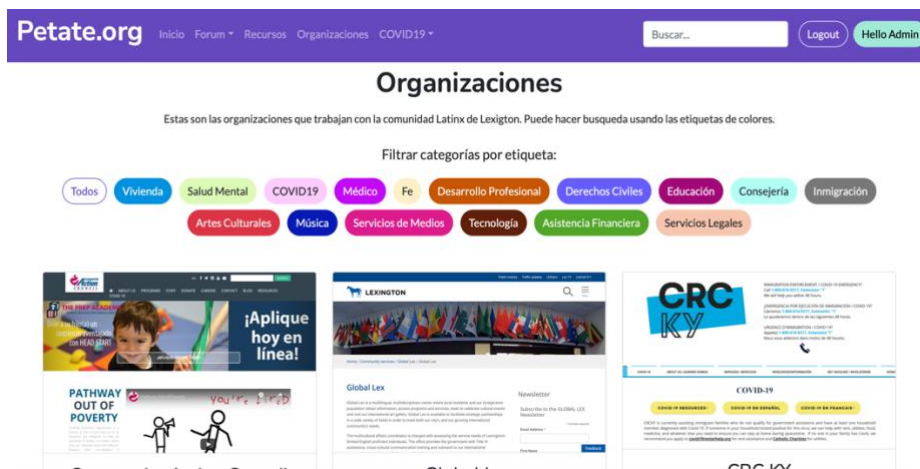This platform will be tested in Phase II of our project.

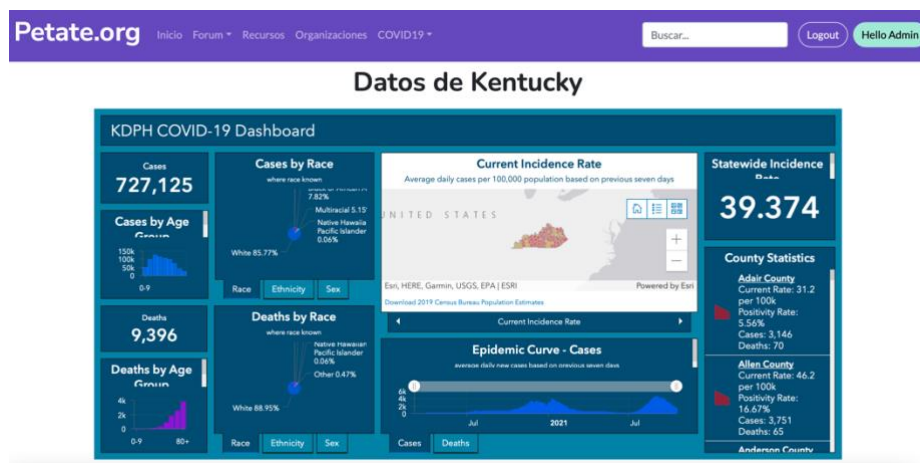Fig.1 Visual tag map of local civil society organizations

Fig 2. Live COVID-19 data

Our findings indicate that the Petate prototype should be flexible and adaptable, locally based, have a horizontal structure, incorporate local knowledge, be built democratically, favor loosely connected ties, be autonomous, and self-organizing. Thus, our next steps will consist in addressing these characteristics through participatory methodologies.

5   Next Steps

Our next steps (Phase II) will integrate Latinx stakeholders, build community, obtain input from our community collaborators on the Petate prototype, and re-design it. First, by implementing a survey to assess preferred platform features and information sharing practices. Second, through community dialogues designed to foster engagement among all stakeholders. Third, by adopting UX design methodologies to facilitate the re-design of our pilot ASI.

6   Conclusions

Underlying social and structural determinants of inequality are rarely addressed in efforts to reduce them. This poster presented preliminary findings of Phase I of our project in which we collectively identified ICT uses, gaps, needs and then built an ASI prototype.

Our findings indicate that Latinx people face structural barriers to information as they are actively invisibilized and purposefully overlooked by government institutions. Civil society addresses these barriers by engaging in seamful work, creating new organizational forms to collaborate, and improvising new ways to share information. The Latinx community needs to feel invited at the table, and the ASI should be flexible and adaptable, locally based, have a horizontal structure, incorporate local knowledge, be built democratically, favor loosely connected ties, be autonomous, and self-organizing. We designed a prototype ASI called Petate, which will be tested and modified by community members through community dialogues in Phase II.

This project brings a new perspective to the study of sociotechnical infrastructures and crises by adopting the Latinx community's perspective and highlights the PAR approach to engaging communities in addressing structural health information inequities. This project will facilitate collaboration and information sharing for the local Latinx community through a self-managing infrastructure that will reflect their situated knowledge and agency. It will also enable connecting with government institutions and partners while maintaining their autonomy.

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