

Public Space Accessibility in Vulnerable Areas in Post-Covid Times

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Abstract. Public space has become a relevant factor for cities since it increases people's quality of life. These areas help reduce physical and mental problems that may arise in society, and in addition, they increase the sense of community and improve the development that children may have. The Covid-19 virus and confinement made this type of space necessary. Although public spaces are taken more into account in the city, they do not take place on the edges of the urban area, as is the case in the community of Paso del Norte in the city of Chihuahua in Mexico. The community has two spaces that can be considered recreation areas, but the reality is that they do not have adequate infrastructure to make them safe and formal places. These make us wonder what the people of this community do in their free time, how they use these public spaces, and how they have evolved over the years. So people in the community were surveyed to solve such unknowns, revealing that these spaces have changed in the last two decades. Especially with the arrival of the Covid-19 pandemic. These green areas added value to the areas where they are, plus many adapted the spaces for recreational, educational, commercial, and productive use. Design is a great tool that can take the detected weaknesses of a community and turn them into strengths to create a good quality public space.

Keywords. public space, vulnerable community, environment

1. Introduction

The Covid-19 pandemic has undoubtedly influenced the way in which urban public spaces [1] and shared spaces [2] are experienced. Furthermore, the impact that the pandemic has had on societies around the world is certainly not the same and the most vulnerable communities have been affected more than those with better living conditions [3, 4, 5, 6]. While the architectural urban debate is increasingly moving towards the enhancement of public space as a place where sustainable practices for city living can sustainably flourish, the impacts of the pandemic on access to public space can further increase social differences and put them at risk.

The Tecnológico de Monterrey, School of Architecture, Art and Design has been working for a couple of years with the vulnerable Paso del Norte community in the city of Chihuahua (Mexico). The research project "Design for Vulnerables" [7] which has this community as its main case study, aims to understand how urban-architectural

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design practice must change to give appropriate responses to the needs of vulnerable communities in the coming decades. These complications of Covid regarding accessibility to public space oblige us to develop a reflection on the role and meaning that these spaces have assumed in vulnerable communities in recent decades and in particular in recent years, during the pandemic.

1.1. Paso del Norte, one of the urban vulnerable communities of Chihuahua capital city

Paso del Norte is a community that originated around 1950 on the slope of a hill that serves as a de facto limit within the urban area of the city of Chihuahua. The River Sacramento, which flows at the foot of the hills and which limits the city of Chihuahua, separates the Paso del Norte colony from the formal city. The community originated as families migrated from the countryside to the urban center and sought areas for new homes. These new developments were built in low-cost areas, as a result. Urban services have needed several years to reach the colony, leaving the inhabitants without basic services for a long time.

Over the years, the colony's first structures have become more and more formal, while new homes and infrastructure have been added, as the population has grown. The colony, even though it has thus enjoyed greater "formality", has always remained excluded from the formal urban processes that took place in the city. On one hand, the bridges built to cross the river have always served as a basic physical connection between city and colony but have never been able to offer a more important connection that would reduce the colony's sense of segregation. The lack of accessibility has therefore become very important and has contributed to forging that sense of exclusion that is at the root of many current problems.

Currently the Paso del Norte colony must be considered as a vulnerable colony of medium severity, in which many residents can count with a form of formal and legal employment, in which most of the houses are permanent and in which some services arrive. Despite this, various accessibility problems remain within and to the colony, with an important implication in terms of social vulnerability.

In particular, accessibility to public spaces is an aspect of vulnerability that appeared very relevant in the early stages of the research [8]. For this reason, this more in-depth study was carried out, focusing on the change in the accessibility of public spaces during the decades of life in the colony and with a particular focus during the changes that occurred during the Covid pandemic.

1.2. Covid-19 and vulnerable communities in low- and middle-income countries

While the Covid-19 pandemic affected everyone, vulnerable communities on the margin of the city were most affected. [9] Though many people had the opportunity to work from home, most individuals in the periphery community did not have this chance due to their type of employment. Therefore, they needed to continue going out to the streets to make money for their family's needs. These are people whose majority of their jobs do not have adequate facilities to achieve proper social distancing. [10]

The lockdown also brought about numerous maladies, not only physical but mental. Many children and young people presented illnesses such as anxiety and depression due to the lack of contact with other children. The lack of outdoor spaces was notorious. Now we realize that these spaces are essential for our daily lives. These spaces are required, not only because of recreational terms but in the workplace, in health, among others. [11]

1.3. Accessibility in public spaces of vulnerable communities

Accessibility to public spaces is a privilege that most people can enjoy. Unfortunately, this accessibility is not the case for many communities on the fringes of cities. [12] The infrastructure of these neighborhoods is moderately low. It's difficult to think of having good quality public spaces if houses are barely there; informality of public and private assets is a urban matter that deeply influences the levels of vulnerabilities.

There are priorities within the neighborhoods, such as housing, lighting, having primary services such as electricity, drinking water, etc. Public space is one of the last problems municipalities think about. As a result, public spaces in vulnerable communities are often informal spaces, like an unpaved open court that can be difficult to access due to lack of maintenance and inadequate facilities. In these contexts, two scenarios likely occur: (1) people stop using these public spaces, which easily become stages for illegal events, exacerbating even more the lack of appropriation or (2) people try to arrange some permanent or ephemeral intervention to promote spatial appropriation.

1.4. The changes in the use of public spaces

According to the two previous points, it seems relevant to understand how accessibility and use of public spaces in vulnerable communities changed in the last decades and during the Covid pandemic, especially in neighborhoods located on the periphery of the city. Understanding the evolution of these spaces and the way they have been used in these periods helps us to identify areas of opportunity for the improvement of accessibility in public spaces and to define the possibilities that design has to help these neighborhoods in terms of accessibility. [13]

2. Methodology

Design for Vulnerables is a research project funded by the “*Observatorio de Ciudades*” of Tecnológico de Monterrey which started in January 2021 and was composed of various initiatives and research activities that highlighted various urban aspects that are related to the different forms of vulnerabilities in this vulnerable community [7]. Among the most relevant aspects, the way in which residents access and experience public spaces emerged. For this reason, ethnographic meetings were held with some residents of the neighborhood, during some of the periodic meetings that the research group carries out in the colony.

2.1. Public spaces of Paso del Norte

In the Paso del Norte neighborhood there are essentially three public spaces that are used, in different ways, as a meeting space between residents. These three spaces are:

- Baseball Court, which is in the higher area of the community and it is occupied all the weekends, all the day long for the local baseball championship;
- Basketball Court, located in the middle of the neighborhood, is used just for some informal youth sports;

- Plaza, at the main pedestrian entrance to the community (pedestrian bridge) is used mainly by the civil organization Accionética, which works here with children and teenagers.



Figure 1. Public space (Baseball Court) of Paso del Norte (Chihuahua, Chihuahua).



Figure 2. Public space (Basketball Court) of Paso del Norte (Chihuahua, Chihuahua).



Figure 3. Public space (Plaza) of Paso del Norte (Chihuahua, Chihuahua).

2.2. Conversational semi-structured interviewing

We will collect information without pre-conceptualizing the categories of analysis. The researcher will engage the person in a conversation that engages them in hopefully most,

but not exclusively planned topics, asking carefully worded questions that invite the interviewee to feel comfortable engaging in extended talk. In a conversational interview, the person being interviewed is asked to tell stories, to describe and contextualize specific events or activities. These stories express the interviewee's interpretations of those events and their significance, what the subject imagines are their causes and possible consequences. Stories are in many ways the richest form of data the qualitative researcher can obtain.

2.3. Interviewing people - Ethnographic Encounters

To understand the evolution of the landscape and public space we need to ask and listen to the people who have lived in Paso del Norte. Knowing their perspective will help us understand how their neighborhood has changed. So, through these anecdotes, we can analyze the agents of change in architecture, public space, accessibility, and society.

Below are the methodology and the results of the ethnographic encounters with people from the neighborhood. We asked different questions regarding their childhood in the locality, the elements that have changed, and the aspects that would improve, among others.

3. Results

The neighborhood holds events every Saturday to create a sense of community. It also raises funds for future events or needs and makes activities to keep children off the streets and prevent them from doing things that harm them already. During these events, we created a relationship with the people we interviewed.

People were excited to remember and tell us what we asked, especially since they were memories of their childhood. We noticed the environmental and social changes that the community has had and the successes and failures that exist. They gave us valuable information to improve accessibility to public spaces in vulnerable communities.

3.1. Interview 1

We met Mrs. Laura, who invited us to her house to talk about the neighborhood. The conversation began with anecdotes from when she was little, - "At night it was very dark because there was no light, however, I remember a happy childhood. We would go out and try to catch fireflies..." She longed for those moments while telling us all those things that have changed in the place. - "The colony has changed, but I don't know if it's for the best," she said thoughtfully. She told us that those public spaces they have are often problematic. - "on Sundays when there is a baseball game, the players start drinking..." - "those children whose parents are absent and do not have activities in the afternoon tend to be delinquent...", she said in dismay. Although these negative things exist, there are positive things. Before the pandemic, people went out to use these spaces for good. - "Before they gave Zumba... classes used to be in a plaza below the neighborhood, but the group grew and began to use the baseball field."

Analysis: Paso del Norte used to be a place with a strong sense of community and respect for nature. The unpaved streets were the public space. People celebrated important days there and children also went out to play and have fun. People were in constant contact with nature by eating fruits of the native flora and making proper use of the bodies of water that existed before. They also had orchards in their houses. People adapted to space, not the other way around.

Over the years, families grew, and the population in the area expanded. New ways of living came along with it. Orchards were left aside and people destroyed nature due to the construction of new houses and spaces for private recreational use. Nature was no longer seen as a benefit but as an obstacle for living.

The baseball field and the basketball court cannot be used entirely by the community since they are private ownership. Some physical activities took place in these spaces. As a result of the pandemic, these activities ceased and until now they remain like that. People don't have a proper space that belongs to them to do these kinds of activities and to reactivate that sense of community that was left out years ago.

3.2. Interview 2

We also met Rodolfo and Susana who have lived in the neighborhood since they were born. Children of the founding fathers of the community. We talked about their childhood and the connection they had with nature was quite strong. - "The field used to be a stream, we would go to play and we started to fill in and level the land. This is how the baseball field was made..." said Rodolfo. "We played inside the river, the water used to be very clean, you could see different fish...". Their childhood was happy, they remember it with great nostalgia. About the existing public spaces, Susana told us they like the area in front of their home. - "Every afternoon, children go to play there. I can take care of my grandchildren from home. We like that place", "I do like the park," said Susana. They showed particular affection for the baseball field. - "People have wanted to remove the field, but we don't want them to. They want to use it to build houses...", Rodolfo told us. But those spaces that children have adopted to play and live together are not entirely safe. - "You can find the court neglected. The fence is in poor condition, it can become dangerous for children...", Susana said.

Analysis: Nature was a big part of children's play in the past. People used to play in the river as well as in unpaved streets. Although better infrastructure in the neighborhood, such as paved streets, primary services, etc., make life in the locality easier, they would prefer to stay as before. Although they had fewer things, they were happier.

People feel more attached to what they build. The baseball field used to be uneven and had a river running over it. The people of the community worked to flatten and level that land. Now some people want to build on it. The community doesn't allow it because of the memories and sentimental value the court keeps. Proving that people tend to value those things that they worked for, and treasure it more.

This court is the main space where children go out to play. However, this place runs little sometimes, when children from nearby neighborhoods go to play. This place is still dangerous due to the ravine that exists. Not only does this exist in the principal court, but in the basketball court they have. The community does not have accessible or safe spaces.

4. Discussion and Conclusions

Paso del Norte used to be a place where people connected to the natural environment. As the years passed, this practice disappeared, revealing how new infrastructure searches for something that people believe is better. The three people interviewed agreed that before, life, although it was more difficult, was more pleasant. Having contact with nature as children made them happy and created a strong sense of community. Public spaces were accessible to everyone since everything belonged to everyone. There were no private spaces. In the present day, the public spaces in the neighborhood have minor infrastructure, security, and accessibility so that everyone can enjoy them. The sense of community only occurs among children when they go out to play, but it stays in those spaces. They don't keep practicing it outside of the basketball court or the baseball field. The activities carried out before the pandemic are very important for those in the community. Giving these spaces some daily use created these community ties, which disappeared with the confinement.

Nature is an important factor: accessibility to public spaces in the childhood memories is often related with plants, bodies of water, and green landscapes. By destroying these environments for the construction of inaccessible urban areas, the connection between public spaces and nature, as well as the sense of being in contact with the environment, has been lost.

Public space infrastructure are key elements for the sustainable development of a community only if it is well done, taking into account not only issues for physical accessibility, but also issues for environmental connection. Otherwise, people may feel alienated from these spaces and do not take care of them, causing them to be dangerous and inaccessible for many. Accessibility, in essence, means everywhere, and particularly in the most vulnerable communities, as it relates to the human right to physical connection and spiritual connection with the environment. Public spaces help people feel safe by getting to know each other and creating community in the plazas through recreational activities, those that not only Activities that not only help them to relate to each other, but provide physical conditioning and improve mental health outcomes.

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