

Safe Public Spaces through Public Participation: A Case of Mexico.

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ABSTRACT

In Mexico, public spaces are widely perceived as insecure and unequal. Existing research highlights that local-level data is key for addressing challenges in public spaces regarding their quality, provision and connection within the urban extent. Furthermore, studies urged for public participation to enhance the provision of public spaces. This thesis aims to explore how to support public participation in local planning processes, to improve safety in public spaces.

In this thesis, I inquire how public participation can enable data for local authorities to produce more insights about the aspects that people think would help improve their sense of safety in their cities. Through a case study approach in Xalapa, Mexico, I proposed a participatory safety assessment to collect and integrate residents' perspectives into local planning processes to create safe and accessible urban environments. Data was collected via literature review, interviews, a focus group, and a survey. This research derives an approach to address residents' safety concerns in any street, guiding effective interventions.

The findings suggest that local knowledge can provide useful information regarding safety perception, infrastructure needs, and suggestions for improvement while considering the needs and aspirations of users. Information regarding crime attestation, public lighting provision and accessibility are some examples of the data collected that can significantly contribute to the provision of safer public spaces. Also, improved mobility and urban equipment were some common hints related with safety. The survey derived from this approach allows to acknowledge users' suggestions for improvement, promoting bottom-up decision-making. On top of that, the research helped derive an approach to assist local authorities in adopting a participatory strategy to provide safe public spaces, emphasizing the involvement of residents, academics, and civil actors in planning processes.

Key words: Public space, safety, public participation, local planning processes, Mexico.

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CHAPTER 1: INTRODUCTION

1.1 Background and Justification

Public spaces play a key role in achieving inclusive, safe, resilient and sustainable human settlements (UN-Habitat 2020a). Streets and open public spaces are also crucial to mobility and the functioning of the city (UN-Habitat, 2018). However, uncontrolled rapid urbanization generates urban patterns with dangerously low proportions of public space, even in planned new areas (UN-Habitat, 2018). Local governments should be able to include the adequate provision of public space as part of their development plans, working with inhabitants towards inclusion, gender equality, biodiversity, and increasing urban livelihoods, contributing to prosperous communities (UN-Habitat, 2018).

Local-level data is key to addressing challenges in public spaces, regarding their quality, provision and connection within the urban extent (UN-Habitat 2020a). In Latin America, the innovative use of data could derive recommendations for safer public spaces (Albanna et al., 2022). An example of this is to enable local data collection at the street level to perform a city-wide public space assessment in a cost-effective way, using the resources that local authorities have available (UN-Habitat, 2020a).

Public participation strengthens action in public space (Burnett et al., 2023). People involved in planning processes “feel more included, engaged, and valued for their delivery of knowledge”, boosting their willingness to participate in decision-making (Burnett et al., 2023, p.4). Hence, public participation is crucial for accountability, democracy, and empowerment (Burnett et al., 2023). Is essential to support local governments in developing legislation, policy and norms towards an integrated approach to the planning, design, and management of public spaces, taking the opportunity to ensure collaborative practices (UN-Habitat, 2018). Creating collaborative processes between government and other governance actors can develop better and more inclusive solutions for public spaces (Alvarado et al., 2023a).

The “SDG Indicator 11.7.1 Training Module: Public Space”, states that well-designed and maintained public spaces can contribute to improving safety (UN-Habitat, 2018). An inclusive approach to support public participation in local planning processes to improve safety in public spaces can lead to enhancing the quality of strategic choices, fostering a greater sense of community, ownership and responsibility (UN-Habitat, 2016). This can promote civic engagement toward pluralistic societies, where the needs of all inhabitants are met (UN-Habitat, 2020b). Linking the use of data collected at the local level with factors like institutional collaboration and a country’s cultural context can ensure rules and regulations that protect access to adequate quantity and good quality public spaces (UN-Habitat, 2016).

1.2 Research problem

This thesis explores some challenges to achieve SDG Target 11.7, regarding universal access to safe, inclusive, accessible and green public spaces, in particular for women, children, elders and persons with disabilities. However, in Mexico, public spaces are considered unsafe by most of its inhabitants (INEGI, 2023). Likewise, there are a few studies on the inclusion of social participation in urban planning, with a focus on public spaces in Mexican metropolis. In those studies, challenges in public participation to enhance the management of public spaces were discussed (Alvarado et al., 2022, 2024). Also, research made about challenges in Mexican urban environments stressed the need to improve the quality and significance of public spaces (Hernandez, 2012, 2013). Further research will help to explore how participatory processes can help to inform, assess, manage and improve public spaces.

Current urbanization in Mexico faces limited governance and the persistence of socio-economic inequalities (UN-Habitat, 2017). Some governance challenges include “deficient technical expertise for data gathering and analysis, insufficient mechanisms for citizen participation, and lack of political will or appreciation for the benefits of planning”, among others (Irazábal, 2021, p.162). Although there are efforts to involve inhabitants in different interventions in public space, research made regarding participatory processes

uncovered the lack of government support, the distrust from residents to government, and the lack of social visibility and reach (Alvarado et al., 2024).

Common gaps in the integration of public participation in the planning process in Latin American cities can be identified through the assessment of safety in public spaces. Throughout a case study in Xalapa, Mexico, I analyze the current situation regarding safe public space provision in a medium-sized city. Some challenges like the lack proper urban planning mechanisms, or adopting top-down approaches that disregard the demands of inhabitants, make evident the need for more effective social participation (Alvarado et al., 2023a).

This thesis focuses on the integration of public participation in the planning process through a participatory approach to collect local knowledge from diverse stakeholders. The collection of local knowledge can provide useful information for local authorities and allow recommendations to increase safety in streets, parks and gardens. This approach is intended to facilitate information for local authorities to provide safe public spaces. The research relies upon a qualitative approach and the proposed output is to convey a survey for the assessment of safety in public spaces.

1.3 Research aim and objectives

This research aims to explore how to support public participation in local planning processes, to improve safety in public spaces. To achieve this aim, the thesis will address the following objectives and research questions:

Objective 1: To explore how public participation in planning processes can improve safety in public spaces in Mexico/Latin America.

- a. What is a public space?
- b. What makes a public space safe?
- c. What is understood by public participation in planning processes?

- d. How can public participation contribute to a planning process aimed at improving safety in public spaces?

Objective 2: To propose an approach to support public participation in local planning processes through a case study.

- a. What mechanisms are available to assess public spaces regarding safety, involving public participation in planning processes?
- b. What data is needed by local authorities to improve safety in public spaces?
- c. How can public participation be facilitated to inform local planning processes?

Objective 3: To make recommendations informed by the proposed approach to improve safety in public spaces.

- a. What were the safety concerns in public spaces?
- b. Which interventions in the public space can improve safety?
- c. How can the proposed approach support public participation in planning processes concerned with improving safety in public spaces?

Figure 1 illustrates the conceptual framework for the research.

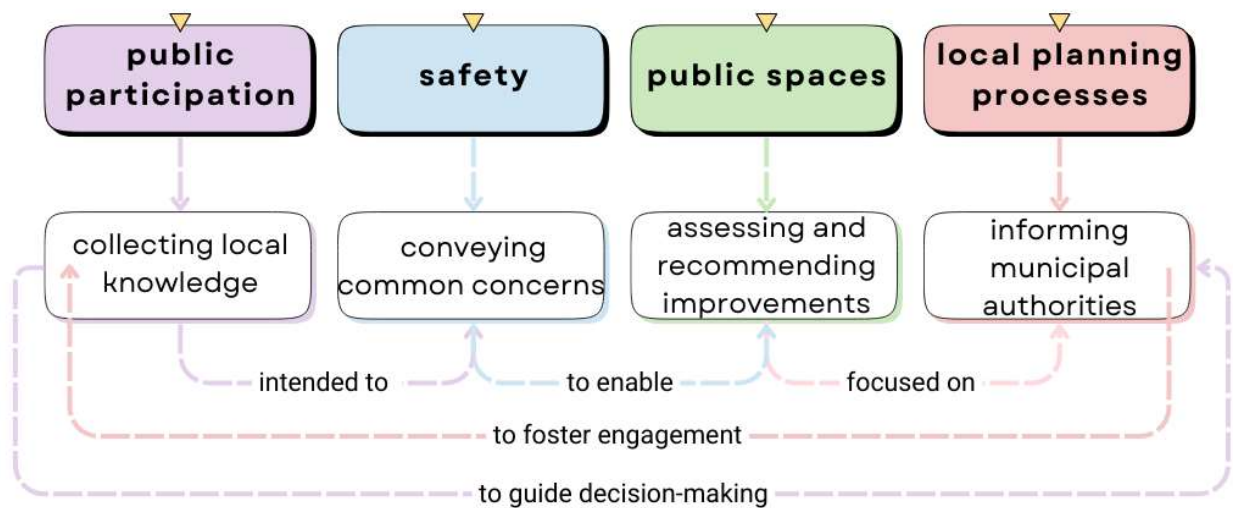


Figure 1. Conceptual framework (Own elaboration, 2024).

1.5 Thesis structure

This thesis is structured as follows. Chapter 2 presents the literature review, understanding the importance of safe public spaces provision, and exploring the state of the art regarding the role of public participation in the planning process. Chapter 3 describes the methodology designed, relying on a case study to explore challenges and suggest a participatory process approach to assess safety in public spaces. The findings are discussed in chapter 4, describing the acceptance and usefulness of the proposed approach. Also, in this chapter, I discussed the main results derived from this assessment. The discussion in chapter 5 allows an analysis of the research objectives and derives final recommendations for municipal authorities to engage public participation in urban planning for the assessment of public spaces regarding safety.

CHAPTER 2: LITERATURE REVIEW

This section focuses on the research questions in objective 1: To explore how public participation in planning processes can improve safety in public spaces, particularly in the Latin American context. Here I explore the importance of public spaces for the city landscape and its inhabitants, as well as the characteristics that make a public space safe. Furthermore, I discuss the importance of public participation in local planning, as well as suggested approaches from the United Nations Human Settlements Program (UN-Habitat), which I refer to as tools to involve participatory processes using the resources available to local authorities.

2.1 Importance of public spaces

Public spaces are multi-functional areas, publicly owned or of public use for social interaction, economic exchange, and cultural expression among a diversity of users (UN-Habitat, 2016). Public spaces are considered common goods due to their cultural and social value (Bambó et al., 2023; UN-Habitat, 2018). The main characteristics of a good public space considered by international agendas are inclusiveness, accessibility and safety (Alvarado et al., 2023b; UN-Habitat 2018). Furthermore, “promoting well-designed networks of safe, accessible, green and good quality streets and other public spaces” boosts social sustainability (UN-Habitat, 2020b, p.2).

Public open space provision has been a major demand since the 20th century in the charter of Athenas, “demanding new breathing spaces in the overcrowded and badly built cities” (Madanipour, 2015, p.789). Nowadays, the New Urban Agenda underlines the importance of “socially inclusive, integrated, connected, accessible, environmentally sustainable and safe public spaces” in particular for vulnerable groups (UN-Habitat, 2016, p.6; 2020). These spaces are elemental for neighborhoods and urbanization, affecting how people behave and socialize (Irazábal, 2021).

For this research, I will adopt the classification of public spaces stated in the Art. 115 of the Mexican Constitution, which encompasses streets, parks, gardens, and their equipment, since this document is the base for all other policies in the country. The federal law advocates providing municipalities with self-assessment tools, enabling them to formulate and execute specific actions to promote and protect public spaces in line with their legal powers (SEDATU, 2022). Within these federal regulations, municipalities in Mexico can derive improvements to their norms regarding public spaces. Xalapa's municipal development plan (Plan Municipal de Desarrollo, Xalapa 2022-2025) would be the normative considered during this research. This plan emanates from the Mexican Constitution and takes into account the regional development plan, as well as international agreements.

In Mexico, public spaces are widely perceived as insecure and unequal (Alvarado et al., 2023a). Insufficient budget, corruption and misallocation of resources hinder their development, making them scarce or inadequate (Alvarado et al., 2023a). Additional challenges include the pressure on governments to change land use from public spaces into private areas, diminishing the amount of space that is left for public use (Alvarado & Casiano, 2022). Nowadays, is important to acknowledge how to reconstruct public space in Mexican cities, overcoming privatization, social inequalities and the creation of environments of fear and abandonment (Hernández, 2012).

2.2 Safe public spaces

Good public spaces can encourage a diversity of uses and activities, enhancing safety (UN-Habitat, 2016). Physical improvements and better management of streets and open public spaces can help to improve the perception of safety and reduce the fear of crime and violence, by attracting people at all times of the day (UN-Habitat, 2016). The voluntary attendance of a diversity of users that interact with dynamism is a result of a quality public space (Mahmoud, 2022). The provision of street lighting and implementation of mixed-use areas is expected to increase usage and social interaction, positively influencing the sense of safety (UN-Habitat, 2016). Besides the enhancement of safety, an adequate

provision of quality and safe public spaces can promote orderly urban development (i.e. street grids, adequate share of open spaces, etc.) providing economic opportunities and adding cultural value to the city (UN-Habitat, 2020b).

With an adequate public space provision in terms of supply and connectivity, it is possible to move forward with urban land-use, infrastructure and sustainable development in a much more efficient way (UN-Habitat, 2016). Also, a well-connected network of public spaces can positively impact public health, environmental sustainability and support mobility through diverse modes of transportation (UN-Habitat, 2016). However, some identified constraints such as the commodification of public space that overlooks multifunctional criteria and structural connections, inefficient public spending, and lack of institutional communication can contribute to underestimating the value of public spaces as a key element for urban development (UN-Habitat, 2016).

Fear of crime and violence can deter people from using public spaces (UN-Habitat, 2016). Change of routines for fear of crime affects more than 50% of the Mexican population (INEGI, 2023). The ENSU survey regarding safety perception (INEGI, 2023) is nationally representative and focuses on urban areas. ENSU defines the perception of safety as “the trend of crime, the attestation of criminal or antisocial behavior, changing routines for fear of being a victim of crime, perception of the performance of public security authorities, conflicts and antisocial behaviors, government performance, frequency of mobility, victim households or with any member who is a victim of robbery and/or extortion, victims of corruption and victims of sexual harassment or violence” (INEGI, 2023, p.1). This survey indicates that 62.1% of the population over 18 years old feel unsafe in their cities, especially in streets and open spaces (INEGI, 2023), highlighting a persistent sphere of violence and lack of social values (Hernández, 2012).

UN-Habitat sets different parameters to assess diverse aspects of public space, including safety. For example, “Her-city project” (UN-Habitat, 2022) mentions that inclusion and accessibility are the main characteristics affecting girls’ sense of safety in public spaces. In 2019 more than 50% of female homicides occurred in public spaces in Mexico, and

violence against women, mostly sexual attacks, often occurred in streets and parks (Albanna et al., 2022). Another example for the assessment of safety is the “Global Public Space toolkit” regarding how to measure quality in public space to learn about the requirements of different groups of people and stimulate new ideas for improvements and management (UN-Habitat, 2016). Furthermore, the New Urban Agenda suggests soft measures for urban safety, such as adequate pedestrian infrastructure and non-invasive surveillance (UN-Habitat, 2020b).

Data collection at the local level to perform an evidence-based analysis can help to inform planning and management decisions, guiding the provision of safe public spaces that meet the needs of all members of society (Albanna et al., 2022). The indicators from different UN-Habitat agendas regarding “universal access to safe, inclusive, accessible, and green public spaces, in particular for women and children, older persons and persons with disabilities” (UN-Habitat, 2018, p.2) can help to convey an adequate assessment for safe public spaces that local authorities can perform cost-effectively, bearing in mind available resources (UN-Habitat, 2020b). Also, it is important to consider national indicators that are useful to complement this assessment. In this research, I considered the safety perception statistics from the ENSU report (INEGI, 2023).

A street-led approach works well for gradual development through strong participatory planning, considering city-level concerns of connectivity and mobility (UN-Habitat, 2016). Streets, avenues, pavements and passages are multi-use public spaces intensely used in our daily lives, allowing access and mobility (UN-Habitat, 2016). Strategies built on the functional and symbolic role of streets and public spaces are key to linking neighborhoods with their surroundings (UN-Habitat, 2016). In this research, the prioritization of streets through a street-led approach will safeguard strategic choices, ensuring that the streets selected for improvement can bring the best outcome concerning development opportunities, economic well-being, and land use optimization (UN-Habitat, 2016).

Current approaches for reshaping public spaces must consider the local knowledge from different actors, focusing on the needs and aspirations of users, while making better use

of the resources available (Alvarado et al., 2024). International agreements show that the involvement of public participation can help in the assessment of safety in public spaces (UN-Habitat 2016, 2020b, 2023). For this thesis, I explore how close collaboration between municipal authorities and public participation can enable data collection to produce more insights about the perception of safety in public spaces, and the aspects that people think would help to improve their sense of safety in their cities.

2.3 Contribution of public participation in local planning

A real understanding of the values and role of public space for the benefit of urban communities, following participatory and democratic processes, should lead to the improvement of our cities (Hernández, 2012). UN-Habitat recommends enhanced involvement of residents to create more inclusive cities, supporting public participation in the different stages of planning processes (UN-Habitat 2016, 2020b, 2023). Giving more opportunities to participate can improve the influence of public participation in developing public space projects. (UN-Habitat, 2016; Alvarado et al., 2024). However, lack of social cohesion and participation, as well as weak political will to involve public participation, are some of the main challenges in current planning processes (UN-Habitat, 2016).

Public participation is considered a democratic right and is understood as a way of taking part in public affairs and decision-making (Serrano, 2015). With the involvement of a diversity of people in a policy process, public participation allows considering different opinions to assess common concerns (Alvarado et al., 2023b; Serrano, 2015). Public participation encompasses social, communitarian and citizen participation. The first refers to non-governmental organizations that defend the interest of its integrands, the second refers to individuals that organize themselves to face adversity, and in the last one, the citizens involved have direct influence in public administration (Serrano, 2015).

For this research, public participation is defined as the involvement of diverse stakeholders, other than just public authorities, in planning processes. Social actors have succeeded in carving out more spaces for direct involvement through socially organized

initiatives, such as tactical urbanism or placemaking (Alvarado et al., 2023a). Public authorities must create institutional channels and regulatory frameworks to involve public participation (Serrano, 2015). Yet, in Mexico, it is not common for authorities to involve public participation in planning processes regarding, for example, the improvement of public spaces, even though the public is the final user (Alvarado et al., 2023b). The engagement of local authorities refers here to their initiative and support in involving public participation in planning processes, to evaluate safety in public spaces.

Although international agendas advocate to include social participation in planning processes (Alvarado et al., 2024), practice often fails when comes to public space projects, primarily due to a lack of planning instruments or indices (Alvarado 2023a, 2024). Residents are concerned about high-quality public spaces, and they struggle for their right to a healthier urban environment (Hernández, 2012). The promotion of a privatized city coming from private actors and local authorities, and the development of closed residential areas worsen these concerns (Hernández, 2012). In Mexican cities is common that residents from popular areas, responsible for their neighborhoods due to authorities' abandonment, struggle against government or private developers to defend their right to adequate public spaces (Hernández, 2012).

The encouragement of public participation with the support of technology can lead to higher levels of diverse stakeholders' involvement and ensure shared decision-making (Alvarado et al., 2024). The use of technical resources can facilitate processes involving public participation as a main source of information (Alvarado et al., 2023b). The information from the residents and other stakeholders concerning their experience with the context can facilitate local-level knowledge about common concerns in public spaces, supporting bottom-up decisions (Alvarado et al., 2023b). Furthermore, regarding the NUA intervention mechanisms, utilizing e-governance tools helps authorities to ensure that the data collected promotes social inclusion in the decisions made and their outcomes (UN-Habitat, 2020b).

2.3.1 Democracy diagram

It is necessary to understand how participatory processes are being developed in countries with emerging economies. With only a few studies in Mexico on how social participation has been included in planning processes, further research is needed to recognize how participatory processes can help inform, assess, manage and improve public spaces. Previous research by Alvarado et al. (2024) highlights how stakeholders are included in decision-making processes in an analytical mode. Based on Fung's Democracy Cube framework, applied to participatory community-based technology initiatives in urban planning, Alvarado's Democracy Diagram (Figure 2) can help to operationalize and analyze participatory processes in this case study.

I adopt the Democracy Diagram to understand who participates in local planning processes, how the participants communicate, and their level of impact in decision-making for public space projects in Mexico (Alvarado et al., 2024). The use of the Democracy Diagram in this case study helps to identify the diversity of stakeholders involved and understand how current planning processes are conducted, and how they can be enhanced to influence decision-making. This improves our comprehension of different actors' perspectives on social participation and allows us to examine the achieved degree of involvement (Alvarado et al., 2024). Also, it would be helpful to compare the mechanisms available in local planning with a participatory approach.



Figure 2. Democracy diagram (from Alvarado et al., 2024).

2.5 Suggested approaches to assess public spaces

Is essential to support local governments to collect solid knowledge about the condition and availability of public spaces, enhancing their quality and supply (UN-Habitat, 2018). Participatory processes intend to produce informed decisions by giving a degree of power in decision-making processes to diverse stakeholders involved in representing citizen preferences in the final project (Alvarado et al., 2024). A milestone from UN-Habitat gets consolidated in the tools developed to assess different aspects of public spaces, through the engagement of local authorities as key to feasible improvements in planning processes (UN-Habitat 2016, 2018 2020b, 2022). Moreover, collaborative and inclusive participation with government officials and other stakeholders can enhance acceptance by the intended users (Alvarado et al., 2024; UN-Habitat, 2020a).

Public space surveys and maps can mobilize interest and participation (UN-Habitat, 2016). Appraisals through questionnaires and interviews with different users are important to find out their needs and aspirations in public spaces (Hernández, 2012). One example of this is public space surveys that can cover the whole urban area concerning

the quality, supply and distribution of public spaces, to create maps identifying their location and typology (UN-Habitat 2016, 2018). To develop a public space survey, previous analysis of urban legislation and plans is needed to identify constraints (UN-Habitat, 2016).

Next, I describe four different tools created by UN-Habitat to help countries with emerging economies in the assessment of quality and adequate provision of public spaces. These tools were selected according to their relevance for this research since they are intended to support informed decision-making through the engagement of local authorities and the involvement of diverse actors in planning processes. Additionally, they assist in data collection and analysis, intended to convey useful recommendations for feasible improvements in public spaces with the available resources.

2.5.1 Global Public Space Toolkit

This tool aims to support local governments in collecting solid knowledge about the condition and availability of public spaces, enhancing their *quality* and *supply*. Drawing upon a broad consultative process, this tool highlights the importance of political commitment and the need to improve mechanisms for coordination and cooperation between government departments to support urban development. The toolkit is a practical reference for local governments to frame and implement initiatives in public space, with the added value of social involvement through participatory processes (UN-Habitat, 2016).

Governments should prepare strategies and policies to create a network of quality public spaces and prioritize resources in their development plans. Public spaces can help to support adequate *density* and *connectivity* within the city. A city-wide assessment, for example, can derive useful information regarding *distribution, connectivity and accessibility* as helpful indicators to measure public spaces. Additionally, rating *individual perceptions* about public spaces and their *equipment* would allow authorities to realize the requirements of different groups of people and stimulate ideas for *improvement and management* (UN-Habitat, 2016).

2.5.2 SDG Training Module 11.7

This tool's rationale is *monitoring* public spaces to provide necessary and timely information to make decisions towards providing universal access to safe, inclusive and accessible green public spaces. Local governments should engage the community in their *design*, management and maintenance, fostering social cohesion and building social capital. Furthermore, this tool suggests that monitoring and reporting every 5 years would promote higher accountability and coordination between different government levels (UN-Habitat, 2018).

This “training module” is intended to enable cities to collect accurate data and information, adopting a systematic approach to specific challenges, with evidence-based policy implications. It is helpful for authorities and other stakeholders to know, for example, what is the amount of land occupied by streets and public open spaces within the urban extent, to inform development plans. To ensure a well-functioning and prosperous city, UN-Habitat recommends “an average of 45 - 50% of urban land be allocated to streets and open public spaces, which includes 30 - 35% for streets and sidewalks and 15 - 20% for open public space” (UN-Habitat, 2018, p. 4).

2.5.3 City-wide public space assessment

This tool is key to achieving the New Urban Agenda and monitoring progress towards SDG 11.7., helping local governments to conduct a public space assessment. It suggests a site-based approach to convey a public space inventory and assessment regarding their *network, distribution, accessibility, quantity and quality*, supporting an evidence-based approach with results able to build policies. The intention is to guide local authorities in charge of planning, to manage and organize a city-wide assessment of public spaces as part of their development plans, in a cost-effective way.

This tool is based on a strategic-oriented approach towards long-term planning. It ensures that all users are engaged in the process, promoting social inclusion through workshops,

questionnaires and other data collection methods. Is also useful in mapping public spaces within the urban extent as one helpful way to communicate plans, develop strategies and improve development frameworks. The process described in this tool can be contextualized and adapted to meet the objectives of any city (UN-Habitat, 2020a).

2.5.4 Her-city project

Participatory processes are key for planning a city that everyone can enjoy. This tool emphasizes the importance of involving the perspectives of girls and women in these processes to make urban development more *inclusive, equal and sustainable* through long-term strategies. This tool describes a cost-efficient process based on international principles on planning, gender and youth, to guide the gathering of spatial and statistical data about the city's context and place.

After a literature review and the identification of the main challenges in the context, the next step described in this tool is the selection and engagement of targeted stakeholders to perform a city-level analysis based on the observations of girls and women prioritizing spaces to be improved. The document guides a qualitative and quantitative site-specific assessment, obtaining a *quality* scoring with a gender perspective for public spaces (UN-Habitat, 2022).

In sum, these four tools encompass different ways to undertake challenges in public spaces focused on community planning. I studied their methodologies and encompassed a simplified approach to assess safety in public spaces. The approach is intended to inform municipal authorities and guide improvements prioritizing the needs of residents and users. The tools also helped to acknowledge characteristics (*words in italics*) to be considered for this research regarding the quality and supply of public spaces in urban communities. These characteristics will be compared with the findings from the data collected in a case study regarding safety, to identify common concerns and public space challenges in a Mexican medium-sized city. Besides considering aspects like density, distribution, connectivity and accessibility, a ranking of individual perceptions and ideas for the design and improvement of public spaces will be taken into account, working

towards universal access to inclusive and sustainable urban areas. Furthermore, the gray literature consulted highlights that a proper methodology for the assessment of safe public spaces should involve a strategic-oriented approach, long-term vision in planning, and the use of the available technology to convey a cost-effective participatory process for data collection with the available resources.

CHAPTER 3: METHODOLOGY

3.1 Case study approach

This case study follows a street-led approach (UN-Habitat, 2016). A street-led approach is a simple, cost-effective and inclusive way of initiating change using the existing technical knowledge and experience (UN-Habitat, 2016). Through a case study, I explore characteristics that make public space safe prioritizing the functional role of streets towards public space upgrading. This permitted an in-depth exploration of common concerns in public spaces, identifying which interventions can improve safety and what data can local authorities use to provide safer streets, parks and gardens. This can help to safeguard strategic choices ensuring that the streets selected for improvement can bring the best outcome

The case study was located in Xalapa (Figure 3), a Mexican medium-sized city. For this research, Mexican medium-sized cities encompass those classified as intermediate and medium cities with a population between 100,000 and 1 million inhabitants, and they shelter almost 30% of the country's population (UN-Habitat, 2017; INEGI, 2020). Some of the fastest-growing urban agglomerations are medium-sized cities and close to half of the world's urban dwellers reside in much smaller settlements with fewer than 500,000 inhabitants (UN-DESA, 2018). In Latin America, medium-sized cities have high poverty rates, limited governance and scarce financial resources (UN-FCCC, n.d.).

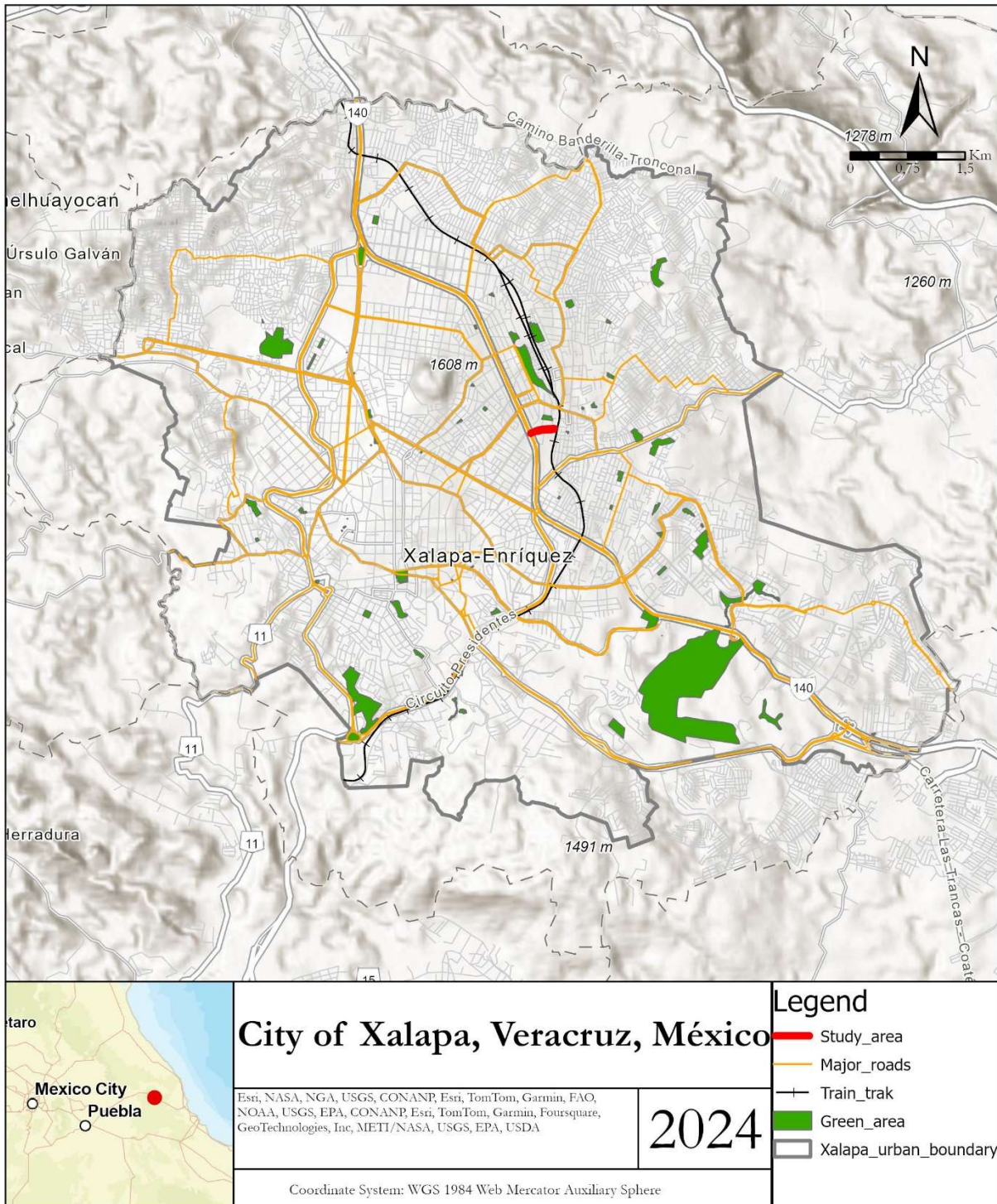


Figure 3. Map of the city of Xalapa, identifying Encanto Street as the study area (own elaboration, 2024).

3.2 Study area selection

Xalapa fosters almost 500,000 inhabitants and a 789,157 total population, 52.9% women (INEGI, 2020). The population between 15 to 29 years old represents almost 25% of the total (INEGI, 2020). According to the last safety survey, women and youth are the most vulnerable to crime and violence in México, especially in public spaces. Moreover, Xalapa is considered an unsafe city by 56% of its population (INEGI, 2023). As well, the project “Friendly public spaces for women” coordinated by the University Urban Observatory, indicates that the recovery of public spaces must be addressed as a security measure (Rubio, 2022). Although its Development Plan advocates otherwise, In Xalapa, there is no local regulation regarding the assessment of public spaces and the mandatory involvement of public participation in municipal planning.

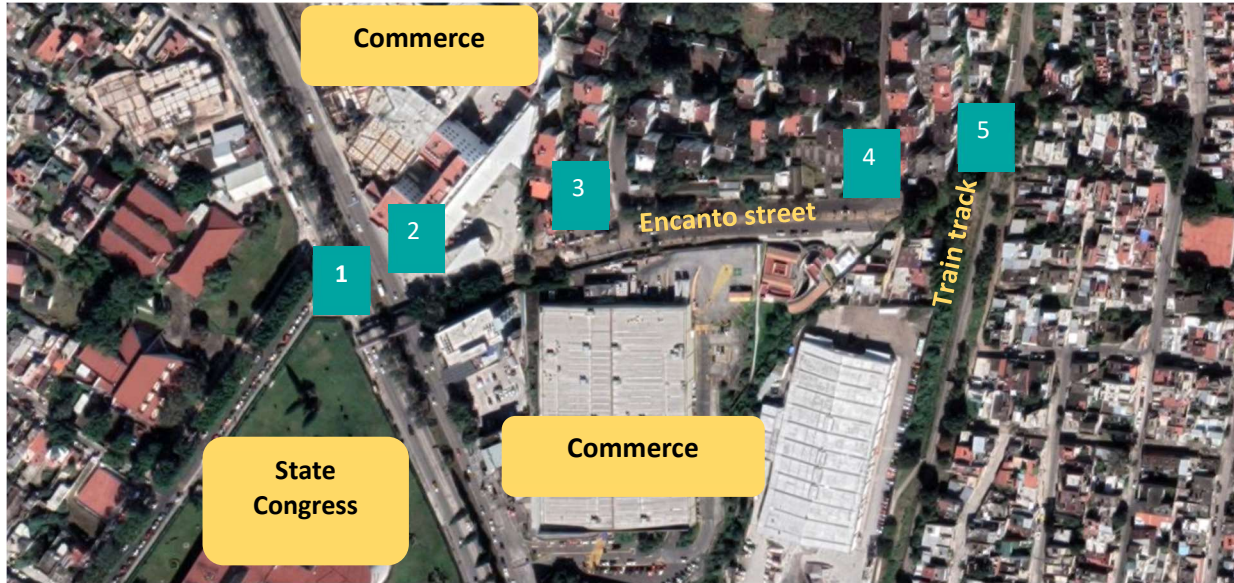
Xalapa is the capital city of Veracruz and its municipal boundary adjoins nine other small municipalities that form the metropolitan area. The city has shown an unordered urban development in the last six decades (Lemoine-Rodríguez et al., 2019). The urban landscape reveals evident challenges arising from an inadequate planning system, such as limited connectivity, high rates of traffic accidents and frequent traffic congestion, neglecting pedestrians and alternative modes of transport (García, 2018). The city has grown with limited urban planning strategies, and at the expense of surrounding agricultural and natural land (Lemoine-Rodríguez et al., 2019). Despite being embedded in a cloud forest region, the green areas have decreased through the last decades due to the urbanization process (Merlín-Urbe et al., 2013), emphasizing the demand for sufficient and adequate open public space provision.

For this research, a single street was selected to develop the case study. The study area is Encanto Street, presented in Figures 4 and 5. The area was selected for diverse characteristics of location, uses and demography, being relevant within the city landscape. The street is delimited by the train railway at the east and a high-velocity road at the west, being both areas usually perceived as unsafe (INEGI, 2023). A kinder school and elders' facility are located on Encanto Street. Also, the street is surrounded by an

important commercial area and government offices, examples of gated developments, and they are embedded in popular housing. Additionally, the area is an important connection point in the geographical center of the city, highly used by pedestrians who make use of public transport, since an important bus stop is located there.



Figure 4. Map of the study area (own elaboration, 2023).



1 High-velocity road



2 Bus stop



3 Passage



4 Dead end



5 Train track crossing



Figure 5. Google images of the selected street and the targeted points within the study area, numbered 1 to 5 (Google Maps, 2023).

3.3 Overview of research methodology

This research relies upon an exploratory qualitative approach to explore how to support public participation in local planning processes. I reviewed different documents from UN-Habitat focused on the assessment of public spaces with the involvement of public participation. Also, national statistics and regulatory frameworks were considered. The findings of this literature review were summarized to convey an approach to assess safety in public spaces and derive recommendations for improvement. This is aimed at supporting municipal authorities with local-level data collection and analysis, being an adaptable, scalable and cost-effective process. Figure 6 shows the methodology framework.

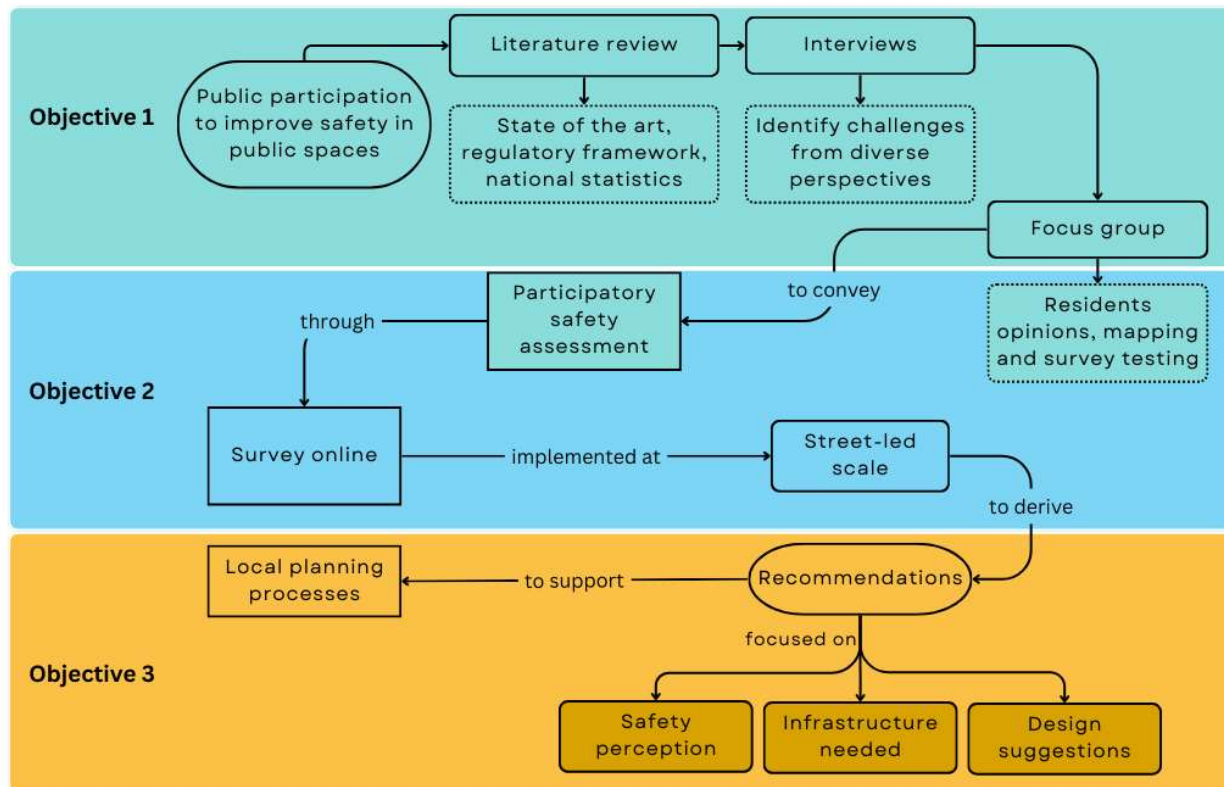


Figure 6. Methodology framework in relation with the research objectives (source: author)

3.4 Data collection and analysis

The methodology suggested in this chapter was intended to create a participatory process where the assessment of public spaces can be conducted through a survey. The survey would help to obtain information to assess safety concerns and urban equipment requirements to provide safe public spaces. The fieldwork consisted of four interviews with institutional representatives, and a focus group with different representatives of civil society interested in supporting public participation in municipal planning. The interviews and a focus group helped to develop and improve the survey that would derive useful information about the current safety in public spaces and suggested improvements feasible for municipal authorities. Table 1 shows the relation between the objectives, the research questions, and the methods for data collection selected for this research.

Table 1. Research objectives, research questions and the data collection method selected (own elaboration, 2024).

<i>Objective</i>	<i>Questions</i>	<i>Data collection method</i>
1. To explore how public participation in planning processes can improve safety in public spaces in Mexico/Latin America.	a. What is a public space?	Literature review
	b. What makes a public space safe?	Literature review Survey results
	c. What is understood by public participation?	Literature review Interviews Focus group
	d. How can public participation contribute to local planning processes?	Literature review Focus group
2. To design a planning process where public participation informs the assessment of safety in a specific public space in Xalapa, Mexico.	a. What are current mechanisms available to assess public spaces regarding safety, involving public participation in planning processes?	Literature review Interviews
	b. What data is needed for authorities to improve safety in public spaces?	Literature review Interviews
	c. How can public participation be facilitated to inform municipal planning?	Literature review Interviews and focus group Survey
3. To make recommendations from public participation to improve safety in public spaces	a. How can the proposed methodology support public participation in planning processes concerned with safety in public spaces?	Interviews and focus group
	b. What were the safety concerns in public spaces according to the respondents?	Survey results
	c. Which interventions in the public space can improve safety according to the respondents?	Survey results
	d. How can authorities use the data collected to improve safety in public spaces?	Interviews.

3.4.1 Literature review

This research relied on an umbrella literature review to provide a theoretical background. First, I considered documents from UN-Habitat regarding public spaces and their importance in the urban landscape and for the health and well-being of a diversity of users. Second, the national statistics in the ENSU report (INEGI, 2023) were analyzed to identify the main issues in Mexico regarding the perception of safety in public spaces. Third, the Constitution and official norms of technical regulations make evident the need to strengthen rules regarding safe public spaces and the role of public participation within local planning. Finally, I explored existing research about public spaces and the involvement of public participation in planning processes in México. Table 2 shows a summary of the reviewed literature and its use to convey a survey for the assessment of safety in public spaces.

Table 2. The literature reviewed to convey a survey for the assessment of safety (own elaboration).

<i>Source</i>	<i>Rational</i>	<i>Use for my approach</i>
<i>UN-Habitat</i>	The documents selected (numbered 1 to 4) worked as tools, encompassing different approaches to assess challenges in public spaces through participatory processes. They are intended to be replicable and context-based, to have further influence in policymaking. Based on these, I convey a methodology to assess common safety concerns in public spaces, engaging municipal authorities to involve public participation and facilitate data collection.	The intention is to facilitate a participatory assessment to collect useful information at the street level since this data can help to create recommendations for policies and interventions to provide safe public spaces. Through an in-depth revision of the four documents, I was able to convey a simplified approach to assess safety in streets. Also, allowed me to develop a survey to assess safety in streets as an output of the participatory process.
<i>1. Global public space toolkit</i>	A city-wide survey will reveal the quality and supply of public spaces through individual perceptions rating. This tool considers different indicators to measure public space and emphasizes the importance of measuring quality to learn about the	Importance of measuring the quality of infrastructure for: 1. Protection: against traffic and accidents (feeling safe), crime and violence (feeling secure), and unpleasant sensory experiences.

	requirements of different groups of people and stimulate new ideas for improvements and management.	2. Comfort: Opportunities to walk, stand, sit, see, talk and listen, play and exercise 3. Enjoyment: Opportunities to enjoy positive aspects of climate
<i>2. SDG Training module 11.7</i>	This tool is intended to monitor public spaces to provide informed and timely decisions towards universal access to safe, inclusive and accessible green public spaces for diverse users. This tool requires the availability of national statistics and synergy between local and national levels, for monitoring and reporting every 5 years.	Create an assessment of public spaces and be able to monitor diverse indicators. Also, highlights that local government is responsible for require active collaboration of civil society and private sectors, engaging the community in the design, management and maintenance of public spaces.
<i>3. City-wide public space assessment</i>	This tool is a framework for developing a long-term public space strategy for local governments. It works towards the goals set in the NUA and is intended to help build institutional capacity. Is useful in the development of a clear action plan, is intended to help understand the state of public spaces with a city-wide public space inventory and assessment, detecting spatial and non-spatial gaps to identify priority projects.	Building on the gaps identified to conduct a site-specific assessment would help to analyze qualitative aspects of the site. Is focused on engaging communities to codesign their spaces. Also, underlines the importance of the involvement of local experts supporting the local government to develop guidelines. Is aimed to support local governments to monitor indicators and evaluate strategies.
<i>4. Her-city project</i>	This tool emphasizes the importance of involving gender perspective to make urban development more inclusive, equal and sustainable through long-term strategies. The identification of challenges, and the engagement of targeted stakeholders to perform a city-level analysis based on the observations of girls and women would prioritize spaces to be improved.	Guides a qualitative and quantitative site-specific assessment, obtaining a quality scoring with a gender perspective for public spaces. This tool describes a cost-efficient process based on international principles on planning, gender and youth, to guide the gathering of spatial and statistical data about the city's context and place.
<i>ENSU report</i>	This report is nationally representative and is focused on different aspects of the perception of safety in Mexican urban settlements. In addition, it was helpful to	The questionnaire derived useful information about infrastructure considered crucial for safe streets and open public spaces. Also, for the

	identify current challenges and gaps to assess at the national level.	assessment of safety perception regarding crime or antisocial behavior.
<i>Regulatory framework</i>	A revision of the federal, regional and local regulations was made. Both federal and regional levels derive to the local level the responsibilities that for this research are important. Hence, Xalapa's Development Plan is the official document here considered.	Xalapa's development plan makes a summary of the federal and regional regulations guiding municipal responsibilities in public spaces and public participation. Also, includes the city's vision and institutional capabilities.
<i>State of the art</i>	An in-depth revision of previous research about Xalapa's public spaces and the role of public participation in local planning processes was made. Furthermore, research made about public space management in big Mexican cities, and the level of influence from different stakeholders, was helpful to recognize common gaps in a medium-sized city like Xalapa.	This revision helped acknowledge common gaps in public spaces and planning processes. The current role of public participation is another key topic in these papers. Also, aided in guiding the questions to be made during the interviews with different stakeholders in the case study.

3.4.2 Interviews

In this section, I describe the four interviews in Spanish conducted in fieldwork, which consisted of a first exploratory meeting and three semi-structured interviews (see Table A1 Interview questions in Annexes). It is important to interview the actors involved in the processes of transformation: residents, planners, urban managers, and other professionals, to determine peoples' perceptions and power relations (Hernandez, 2012). The interviews allowed me to get their observations on the survey draft derived from the literature review and involve their knowledge in the approach proposal. The selection of participants was based on purposive sampling, targeting participants who could provide relevant information to achieve the objectives of this case study (Kumar, 2011):

Municipal representative (Regidor). The local government oversees the management of public spaces (Alvarado et al., 2023a) and they have direct interaction with residents

(Alvarado et al., 2024). In previous research was stated that the level of authority and power for local authorities is informing and consulting with residents' organizations (Alvarado et al., 2024, Xalapa's Municipal Development Plan, 2022). For this thesis, I interviewed a Regidor, who is one of 15 members of the city council, democratically elected. Each one deliberates, analyzes, resolves, evaluates, controls and monitors the acts of administration and the municipal government, in addition to being in charge of monitoring the provision of public services.

University Urban Observatory (academics). Created in 2005 in collaboration with UN-Habitat, is aimed at monitoring and researching the transformation and evolution of the urban phenomenon and is carried out by professors of the Faculty of Architecture, in Xalapa. Two academics with experience in public space research and planning were interviewed. Academics are perceived as a bridge between residents and government decisions (Alvarado et al., 2024). Also, they have knowledge regarding the use of geo-information systems in planning processes.

Civil society (activist). It was important to include a civil representative in this part of the research, including a local activist to compare diverse points of view regarding the survey and the acceptance of the approach. NGOs and academics have the closest contact with residents, as they have a more positive presence within urban communities than the government (Alvarado et al., 2024).

In this section, I describe the interviews in the order they were held. First, an exploratory meeting was held on November 20 face-to-face with Dr. Harmida Rubio, a research professor at the University Urban Observatory. This allowed me to explore the potential impact of the survey on the municipal authorities, and the validity of the proposed approach to support local planning processes. We discuss the aim of creating a survey easy to respond to, where the results guide municipal authorities to provide safe public spaces. She remarked on some academic research from the Urban Observatory related. One example was about unsafe neighborhoods for women within the city. In this research,

it was evident that the nearby area surrounding the study area I selected is identified as somehow unsafe for women (Rubio, 2022).

On November 22 I conducted an interview with the Regidor to understand the perception of local authorities regarding public participation in planning processes, and safety in public spaces. The goal was to identify the current challenges regarding safety in streets, parks and gardens in the city and what authorities think can be improved with public participation. Additionally, the survey design was discussed and upgraded with information coming from public participation that authorities find useful and can allow actual interventions in the area. This interview provided useful information regarding the current challenges at the municipal level, the scope of public participation in municipal planning and the provision of safe public spaces. Additionally, the regidor offered a conference room in the State Congress, next to the study area, to perform the focus group, and contacted some neighbors' representatives interested in participating.

On November 28, an interview with Dr. Arturo Velazquez, Urban Observatory academic, was conducted online. The questions were like the other interviewees, I asked about his experience working with municipal authorities performing urban design interventions, especially in public spaces. This was intended to derive information about planning processes and institutional collaboration.

The last interview was held on November 29 via WhatsApp call with an activist who has experienced dealing with urban interventions performed by authorities in the city, where the information was not available for residents. This interview had similar questions to the ones made before, with emphasis on her experience looking for opportunities to collaborate in public space projects. This helped me to have the perspective of civil society and identify challenges in reaching authorities and trying to be involved in decision-making.

The semi-structured interviews were recorded, and the transcription was made using Microsoft Word's automatic transcription feature. Subsequently, the transcribed

interviews were examined to discern the main challenges and experiences faced by the respondents. During the data analysis, Table A1 Interview questions in section annexes helped inductively identify common challenges concerning public spaces and public participation in Xalapa. To analyze this qualitative data an iterative approach was adopted. Through inductive reasoning and supported by the reviewed literature, I identified recurrent themes: local planning processes, challenges in public spaces, and the role of public participation in Xalapa.

3.4.3 Focus Group Development

A focus group (FG) with 12 participants was conducted in Spanish on December 6 at the state congress. The intention was to identify their main concerns towards safety in public spaces and public participation in municipal planning, taking also the opportunity to pilot the survey described in section 3.4.4. The FG provided a space to discuss different perspectives about safety in the city and within the specific study area, identifying challenges and opportunities for the improvement of safety. This allowed me to gain more insights into safe public spaces for all, considering residents' perspectives. The FG was also intended to derive a snowball sampling, using the participants involved in the focus group as networks to promote the survey (Kumar, 2011). The FG was audio-recorded and the Regidor was present only at the end of the discussion, to allow participants to feel comfortable during the activities and give honest opinions.

The FG was developed as follows. First, I gave a short introduction, explaining the intention of this process. I asked to participants three questions, related to the main topics identified through the interviews in section 3.4.2 but rephrased into three statements for them to agree or disagree with: 1. I believe that public participation can contribute to getting safer public spaces in my city, 2. I believe a survey can derive useful information about our streets, and 3. I believe the study area is safe. This was useful to start a small conversation where participants expressed their concerns and to compare different perspectives from residents. In 30 minutes, they elaborated on their answers and opinions. To follow up this first phase, I printed Google images of the target points along

the study area (explained in section 3.4.4) and asked participants to write on the side of the image what is needed to improve and have a safe environment.

For the analysis of this first activity, the information retrieved from participants was intended to derive opinions regarding three main topics: public space importance, public participation importance, and their experience reaching municipal authorities. The answers were provided on paper, and then I compared and grouped common opinions, using the findings to improve the final survey. Regarding the three statements, the majority of participants agreed with the value of public participation in planning processes and the effectiveness of a survey to assess streets, and most of them considered the area unsafe. Moreover, the activity was intended to break the ice and listen to participants' safety concerns and experiences reaching municipal authorities. Additionally, their suggestions over each target point along the street helped upgrade the answer options available in the final survey, with regards to urban equipment needs (e.g. trash cans, green areas, protection from sun or rain, etc).

For the second FG activity, I shared the survey in a printed document and each participant answered individually. This was intended to test and discuss the questions in the survey. The initiative to pilot the survey was to identify the time needed to answer, and if questions were clear for the respondents. I supervised if any additional doubts or comments were raised, such as finding questions ambiguous or suggestions for answer options. Also, I talked about the importance of participants promoting the survey and got insights about what they think of this survey, and if they would like to participate in a similar assessment for other streets and open public areas in the city.

For the analysis of the second activity, the survey was offered in printed paper to participants to pre-test it and identify if the questions were clear and the options were adequate. They were invited to write their comments, if any, on each question. Also, the intention was to check the time spent on each survey section and their clarity. The printed surveys were revised, and the main insights were used to enhance the final survey, to make it clear and less time-consuming.

Finally, the focus group was also intended to derive useful spatial data related to the dimensions of safe public spaces, e.g., areas lacking public light or disruptions in mobility. This was performed on a printed map where participants traced their routes from one point to another across the study area, using different colors for walking and for using motorized transport. This information guided the concluding phase, where I asked for their opinion regarding the impact of this process to collect information and collaborate with municipal authorities in the assessment of public spaces.

This participatory mapping allowed me to compare traced routes to get insights regarding access and mobility in the study area. All information from this participatory mapping was scanned and analyzed to feed the general survey regarding mobility and access. Also, this was helpful to create a suggestion of design to include in the survey, that would help to improve safety in the area.

3.4.4 Survey

To obtain the final survey, the literature review informed the choice of parameters for safe public spaces and the data needed for their analysis. Some questions were adopted from the ENSU survey for safety perception (INEGI, 2023) and other questions were taken from the tools created by UN-Habitat regarding public spaces, mentioned in the literature review. The interviews provided useful information about the potential impact of the survey and the validity of the proposed approach to support local planning processes. Additionally, the focus group helped to pivot and upgrade the survey. The survey results should derive useful information for municipal authorities, allowing them to prioritize interventions for public space improvements that consider the needs of diverse users. The annexed table A2 shows the structure of the survey with its rationale and source, encompassing use and users, quality of infrastructure, suggestions for interventions and safety perception.

The survey was created on Google Forms and is structured as follows. An introductory section shows the privacy agreement and asks for gender, age and if the respondent has any disability. The second section introduces an aerial image of the study area and asks about the frequency and reason for the use of the space. The next five sections show five different images each about targeted points along the street: 1) high-velocity cross, 2) bus stop, 3) pedestrian passage, 4) dead-end street, and 5) train track cross. These points were selected because they are frequent on every street and often present safety concerns. In these sections, respondents rate their perception regarding safety, infrastructure provision and maintenance, as well as accessibility, with emphasis on available access for people with disabilities. To follow up, section eight is about the perception of crime. An aerial image of the area is used again, now labeling the five points previously presented, and respondents can select the nearest area where this was witnessed, if any. The last section asks for their opinion about an urban design proposal that would make the public space safer, and finally, respondents can provide open suggestions to improve safety in the area.

The survey was intended to be understandable, not time-consuming, and easy to answer. Also, it was available for anyone with a mobile phone and basic internet access. Facilitating these conditions allows a diverse range of people to participate and ensures that the proposed survey can serve as a tool for local authorities and involve public participation in planning processes. To be adaptable and replicable, this survey should be able to assess safety in any other public space in the urban extent, adapting the spatial location and input information and images. The use of aerial and street images is important to give a reference to respondents and to geo-referenced the targeted areas in the assessed street.

The survey was released in Spanish and shared online using the following link <https://forms.gle/hHasaXrNk2fN5gSw8> and a QR code (see annex # "Information flyer"), for everyone to respond. It was shared in journals online, in WhatsApp groups with neighbors of the area, and using other social media, for two weeks, during the winter holidays. There were 35 responses in total. The survey results were downloaded in a

CSV file to be analyzed, and classified according to three dimensions, identified during the data analysis: safety perception, infrastructure needed and suggestions for improvement, which allowed to get bar charts to make the findings more visual, e.g. infrastructure rating, urban equipment needed, etc.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter shows the findings of this research. In section 4.1 I identified some challenges of public participation, followed by exploring mechanisms available at the municipality to support public participation in local planning processes, and practices previously used that were intended to engage public participation in local planning. In section 4.2, I report on the main findings from the adoption of the methodology proposed in chapter 3 and discuss the possibility of acceptance of this approach at the local planning. Finally, I derived recommendations based on the findings from the survey to assess safety in public spaces.

4.1 The role of public participation in local planning processes in Xalapa

This section answers the research questions in objective 2: To design a planning process where public participation informs the assessment of safety in a specific public space in Xalapa, Mexico. The literature review helped to convey a participatory assessment, then here I discussed current challenges and mechanisms available for public participation involvement in planning processes, which I considered to upgrade the approach on the way to raising possibilities for its adoption in local planning processes.

4.1.1 Current challenges of public participation in local planning processes

Different challenges are hindering public participation in México. Existing research has identified challenges related to weak social involvement, a generalized distrust of participatory processes, and poor communication between different stakeholders in big cities like Mexico City and Puebla (Alvarado et al., 2022; 2023b; 2024). Similar challenges were identified during fieldwork in Xalapa, stressing gaps regarding the level of public participation, communication between authorities and citizens, and the level of influence of different actors. Table 3 shows an overview of the current challenges hindering public participation in Xalapa, compared with the ones found in the latest research for Mexico City and Puebla.

Table 3. Challenges hindering public participation, identified during the literature review and data collection (based on Alvarado et al., 2024).

<i>Challenge</i>	<i>Description from Literature Review</i>	<i>Findings from Data Collection</i>
Weak regulatory framework	Local authorities oversee facilitating active, democratic and inclusive participation in civil society, giving relevance to the promotion of residents' participation since it ensures the correct management of resources.	There is a gap between federal government initiatives that seek for the integration of public participation in local planning, and local policies to back up these initiatives.
Lack of synergy between government institutions	The federal and regional governments delegate to the municipalities all the responsibility regarding their plans and the involvement of democratic processes	When decisions are made, it is the regional or federal level that decides how to use the resources. Lack of collaboration and communication worsen the situation.
Top-down decision making	It neglects the diverse perspectives that should be considered in public space projects.	Residents and civil actors are mainly spectators. They are merely informed about city plans.
Lack of long-term planning	Consequences in the mechanisms and plans available in local planning and their continuity when the administration changes.	This makes it difficult to engage with public space initiatives and to improve communication channels that facilitate public participation in local planning.
Lack of trust between government and civil society	There are conflicting points of view and an evident lack of confidence in government institutions among academics and residents. This drives weak social involvement.	The government is perceived as making decisions out of personal interest due to its political agenda, often affected by conflicts of interest and corruption, compromising ongoing public space projects.
Lack of proper planning mechanisms	The implementation of participatory processes facilitates the contribution and empowerment of public participation in our cities. One example is the use of ICTs to inform and communicate.	Xalapa lacks proper planning mechanisms to facilitate the involvement of residents, academics, and other private and public actors in decision-making. The government does not support participatory processes.
Lack of staff with adequate knowledge	Social participation should be embedded using technology to enable a broader range of stakeholder involvement and ensure higher levels of participation in public space projects.	Regional and local planning departments usually lack the technical capacity to meet social and monetary needs to develop public space projects.
Lack of proper communication channels	The lack of social visibility and reach makes authorities disregard social needs.	Poor communication between the municipality and residents makes hard to convey information and communicate plans in an understandable way to society.

A revision of the current regulatory framework made evident the gap between federal government initiatives that seek the integration of public participation in local planning, and local policies to back up these initiatives (Xalapa's Municipal Development Plan, 2022). Governments should provide transparent and accountable planning, involving public engagement (UN-Habitat, 2020b). In Xalapa's development plan, regarding transparency and the fight against corruption, local authorities advocate for active,

democratic, and inclusive participation of civil society, giving particular relevance to the promotion of citizen participation, since it ensures the correct management of resources (Xalapa's Municipal Development Plan, 2022). However, in practice, there are only a few instances of how inhabitants can reach authorities (described in section 4.1.2), and these instances do not ensure that their demands are considered.

The Mexican regulatory framework at the local administration must be updated and have clear initiatives, if they are to be used as key to update local urban plans with new urban policies regarding public participation in public space projects, (interview, academics). When weak legal infrastructure exists, a corrupt environment with crime and informality becomes the norm (UN-Habitat, 2020b). To undertake current challenges, it is important to acknowledge the responsibility of public administration to verify the alignment of the Municipal Development Plans with the State and National regulations, and consideration with international agreements (Xalapa's Municipal Development Plan, 2022).

The lack of synergy between government levels and institutions worsens the mentioned gap in rules and regulations for both public participation and public spaces (interview, academics). The federal and regional governments delegate to the municipalities all the responsibility regarding their plans and the involvement of democratic processes. However, when decisions are made, it is the regional or federal level that decides how to use the resources, because many municipalities do not have proper planning mechanisms (Alvarado et al., 2024).

Urban planning in Xalapa seems to rely on top-down decision-making and there is no diversity of perspectives considered (interview, academics). Top-down decision-making is a challenge for public participation because it neglects the diverse perspectives that should be considered in public space projects (interview academics, activist). Previous research about public spaces in Xalapa shows that authorities often neglect ordinary inhabitants, the needs of public space users and the aspirations of those who are less powerful (Hernández, 2012, 2013). Considering the democracy diagram (Figure 2 in section 2.3.1), the perception of participation from residents and civil organizations in

Xalapa is at the lowest level of influence, since information is not publicly shared and they are only spectators (interviews activist, academics, focus group). Bottom-up decision-making should be empowered, since a higher number of different stakeholders leads to higher levels of social participation, by including a wider range of perspectives (Alvarado et al., 2024).

Another challenge is the lack of long-term planning since this usually has consequences in the mechanisms available in local planning and their continuity (interviews regidor, academics). When the administration changes, initiatives taken are often discontinued. This lack of long-term planning and collaboration between government levels detracts authorities from giving continuity to urban plans (Alvarado et al., 2023a; Interviews activist, academics). This makes it difficult to engage with initiatives to improve communication channels to involve public participation in local planning. Evaluating and monitoring projects are important strategies to allow continuity in planning (UN-Habitat, 2016, 2018). Furthermore, the federal law advocates standardizing methodologies for public space in territorial planning, prioritizing long-term vision and establishing a common baseline for the entire national territory to create reliable indicators.

Lack of trust in authorities hinders public participation. There are conflicting points of view and an evident lack of confidence in government institutions among academics and residents. The government is perceived as making decisions out of personal interest due to its political agenda, often affected by conflicts of interest and corruption, compromising ongoing public space projects (interviews academics, activist, focus group). Due to previous experience in protest and social movements, the activist stated that trying to communicate with authorities has been more of a struggle, and she was reluctant to participate in the FG. Also, residents spoke about their lack of trust in authorities considering their concerns when urban interventions are solicited or made. The ENSU report also shows lower levels of trust for regional and federal administrations, than for the local administration. It is important to highlight that the ENSU report also made evident the lack of trust in regional and local police departments, both crucial to provide security in the city. Local authorities should engage in promoting social inclusion and gaining the

trust of residents in the involvement of public participation in local planning. Community and stakeholder engagement increase ownership and trust, reduce conflict, and ensure sustainability (UN-Habitat, 2020b).

The lack of proper planning mechanisms to facilitate the involvement of residents, academics, and other private and public actors in decision-making is another challenge to the contribution and empowerment of public participation in our cities (Alvarado et al., 2023b). Public participation should be supported through the use of technology to enable a broader range of actors' involvement ensuring higher participation in decision-making (Alvarado et al., 2024). One example of how planning processes could be improved in Xalapa is through the use of ICTs as a source of information and communication. However, this has not yet been effectively rooted in regular processes due to legislative and regulatory gaps (Alvarado et al., 2023b), and due to the lack of resources (interview regidor).

The lack of staff with adequate technical skills is another challenge deterring public participation. In the field of geographic information systems, social participation should be embedded using technology to enable a broader range of stakeholder involvement and ensure higher levels of participation when acting in public spaces (Alvarado et al., 2024). However, regional and local planning departments usually lack the technical capacity to meet social and monetary needs to develop public space projects (interview, academics). Skills and initiatives in community mapping, 3D modeling, or web-based services supporting public participation and spreading information would be helpful to facilitate planning processes. As an example, close collaboration with the University Urban Observatory would provide technical expertise to convey and visualize plans, being helpful to increase trust from residents in the interventions made by the local government (interview academics).

Current communication between the municipality and citizens is one-way. This is another challenge holding back public participation in local planning processes. Social networks are helpful to inform people about actions taken by the municipality (Interview Regidor)

and are currently used by local authorities. However, a persistent challenge is to convey information and communicate plans in an understandable way to society (focus group participant; interview, activist). This can be undertaken with the use of social media and institutional channels (interview regidor, activist). To be informed about public security, according to the ENSU report, 60% of respondents rely on TV news, 55% on Facebook and only 22% using other internet sites. It is important to acknowledge what sources of information are most used by the majority of residents to take advantage of them and promote public participation.

At the local planning, residents struggle to communicate with authorities, set common goals, and have influence in the process (focus group). Exclusion and inequalities prevail in Mexico, creating a gap that weakens social inclusion, development and participation (Hernández, 2012). The gap in the collaboration between the government and residents is even more evident when residents try to reach authorities and state concerns or get informed about urban plans (interview, activist; focus group). Using communication channels that are accessible to everyone is important for local authorities to inform more people about current plans and facilitate two-way communication, allowing residents to share their opinions on the information provided.

4.1.2 Mechanisms available to involve public participation in local planning processes

In Mexico, fully participatory and collaborative city planning and design that prioritizes the balance between different interests do not truly exist (Hernández, 2012). Although existent research has explored planning processes in megalopolis like Puebla and Mexico City (Alvarado et al., 2023b; 2024), further research is needed in medium-size cities since they foster almost 30% of the Mexican population (INEGI,2020).

In Xalapa, there are different perspectives regarding current public participation in local planning. According to the regidor, organized civil society and NGOs are often involved in public matters (interview regidor). The activist agrees that these groups are concerned with the current state of streets and public spaces, promoting initiatives to protect and

maintain them, but their impact and actions are limited, particularly due to the lack of information and resources to support these groups' activities (interview activist; academics). Other actors like academics and residents believe that government institutions do not consult civil society and when it does, it usually does not lead to a meaningful contribution and impact (interview, activist and academics). Residents who want to engage in planning processes often must organize the defense and protection of public space through strong urban protests and the establishment of a social movement (Hernández, 2012; interview activist, 2023). This derives into a struggle against authorities, a common scenario for residents and NGOs, rather than collaboration (focus group, interviews activist, academics).

Public participation is understood as the involvement of diverse actors in planning processes, other than just public authorities (Activist interview; focus group), providing diverse perspectives to undertake improvements for safe public spaces (interview academics) making participants feel engaged and included in decision-making (Alvarado et al., 2023b; Serrano, 2015, focus group participants). When I explored the current role of public participation in Xalapa, I found a few instances where public participation is included in planning processes. One example is when residents need any intervention in their neighbourhoods, they must create a committee to write a petition and select a representative to be the direct contact requesting the attention of municipal authorities. The committee then can expose concerns on their block such as the need for pavement or public lightning. This requires previous organization from the neighbors, and several visits to the town hall, which might not be convenient, deterring more people interested in participating and compromising public participation (focus group participant). Authorities consider each petition, but they do not ensure to include the perspective of the residents into account.

Another example is the public sessions organized by local authorities in the municipal townhouse in the presence of different representatives within the municipality that present some information regarding plans in the city. In these, citizens get informed and can express over the information given (interview, regidor). However, similar to the

committees, authorities evaluate the petition but actions considering residents' suggestions are not ensured. Furthermore, information about the interventions planned is not always provided to residents (Focus group participants).

The last instance found is "Open Doors Monday", intended to allow citizens to expose their concerns in the town hall regarding public works directly to municipal authorities. For each of the instances mentioned, the concerns are evaluated by the council and derived to the corresponding department (interview, regidor). Furthermore, petitions can be made following personal interests, and not because of legitimate need (Alvarado, 2024; interview activist). Since the information is provided by residents, their petitions might not always consider a larger scale within the city landscape (i.e. gating neighbourhoods, closing streets only for neighbours, cutting trees, etc).

With regards to the collaboration between government and citizens, one example is the creation of safety committees at the street level, a program called "vecino vigilante" (vigilant neighbour). After the self-organization of the inhabitants of a specific area, usually a street or block, Municipal police provide them information about what to do in case of facing or witnessing a robbery, assault, or any other threat occurring. Neighbors also must create a WhatsApp group that will be connected to the Ministry of Public Security personnel to create an alert in these cases. This generates a faster response from authorities, according to the municipal representative interviewed. However, we must take into account previous concerns regarding the lack of trust in the municipal police department (INEGI, 2023), and the lack of staff and equipment mentioned as a constraint for the provision of safe public spaces (interview, regidor).

Although I mentioned some mechanisms available in the municipality allowing citizens to be involved in public matters, the data collected during this research stresses that public participation is still limited and should be encouraged and supported by local authorities. While the willingness of municipal authorities to facilitate public participation in local planning is stated in Xalapa's Development Plan (2022) and was highlighted by the

Regidor (interview), is evident that the mechanisms available now are not sufficient to involve and promote participation.

Public participation has been supported by initiatives from local authorities in the past that are now discontinued. One example is the “City-laboratory”, a municipal initiative implemented in previous administrations. Different from the Urban Observatory, where mainly academics research and communicate findings, the “City-laboratory” was intended to foster collaboration with civil society. It allowed citizens and civil actors to be involved in decision-making and acknowledge diverse necessities (activist interview). Reactivating a “city laboratory” to support co-design could help to involve public participation in municipal plans regarding public spaces and safety. Such a laboratory should be active again according to the activist, who has worked on similar initiatives.

Other examples of previous approaches are participatory design and collaborative local planning processes such as tactical urbanism, mentioned by the Urban Observatory as a way to involve public participation. These are useful for local planning but require human and economic resources, as well as technical knowledge that municipalities do not always have in consideration. Authorities have made some initiatives implementing tactical urbanism, but transforming this into permanent strategies is not usual (interview Urban Observatory). Co-management and co-creation are some examples of facilitating public participation in current planning (activist interview). These initiatives were abandoned with the change of administration, since every 4 years a new mayor is elected.

Local authorities should consider the use of the area and its characteristics in their urban plans, as well as the users of the space and how they move around. This is crucial before implementing any intervention in public spaces (interview, academics). Also, the involvement of entrepreneurs, visitors and other stakeholders in the area is important to prioritize universal access to quality public space provision in local urban planning (UN-Habitat, 2016; 2018).

Although improvements toward quality public spaces should be addressed by municipal authorities, according to residents and local experts, it is essential to acknowledge the importance of society's involvement in initiating and undertaking action. A strategy to facilitate the engagement between local government and residents could pass by using intermediary institutions to collect information and consider diverse perspectives (interview academics). Close collaboration with the Urban Observatory, for example, could help to undertake action at the street level to collect local knowledge that considers diverse perspectives.

4.2 Proposing an approach for the assessment of safe public spaces

This section answers the research questions in objective 3: To make recommendations informed by the proposed approach to improve safety in public spaces. For this, I identify common safety concerns and which interventions in the public space can improve safety. Furthermore, I discuss how the proposed approach can support public participation in local plans concerned with improving safety in public spaces, and how the acceptance of this approach was for Xalapa. Also, the recommendations derived to improve safety in public spaces are reviewed.

4.2.1 Description of the participatory assessment for safe public spaces and how this was received

In this thesis, I convey a participatory assessment approach to collect local-level data and make informed decisions about interventions toward safe public spaces. Although the methodology to obtain this approach was described in Chapter 3, here I illustrate the participatory safety assessment (figure 7) derived, intended to be adopted by municipal authorities to facilitate public participation in local planning processes. At the end of this section, I describe the findings from the approach, including recommendations for safer public spaces.

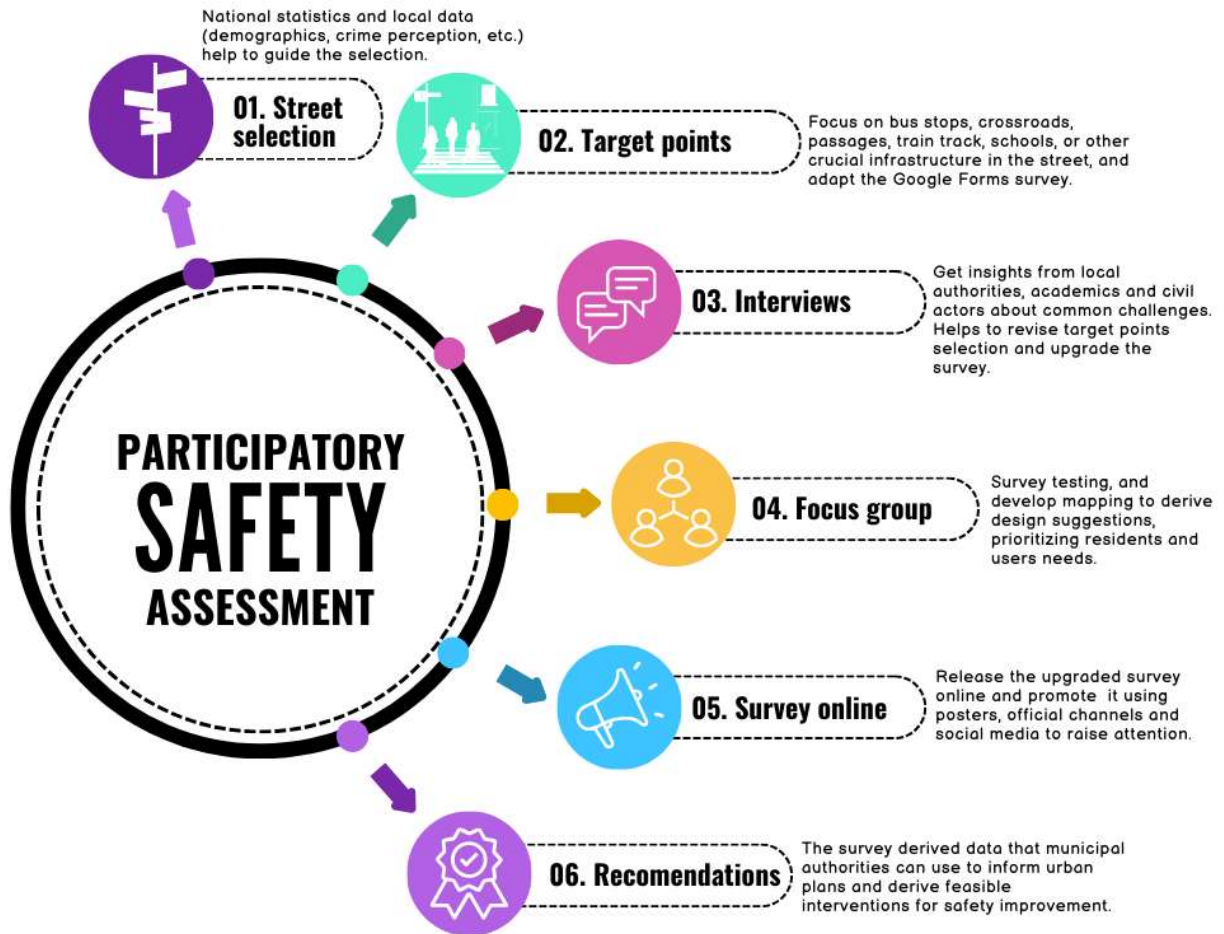


Figure 7. Description of the participatory safety assessment (own elaboration).

The approach suggested here to assess safety in public spaces is intended to facilitate the involvement of residents, academics and civil actors in the local planning process, providing useful information for municipal authorities to guide projects in public spaces. This participatory approach aims to prioritize streets and open public spaces that need interventions to improve safety. It is street-led, leveraging existing technical knowledge and experience to work towards public space upgrading in a simple, cost-effective and inclusive way (UN-Habitat, 2016). Next, I describe the phases of this process to ensure that the survey resulting from this participatory assessment considers diverse perspectives and provides useful information about common safety concerns.

The approach is intended to derive and improve a survey for the assessment of safety in the street and consists of six phases. The survey to be improved is the one described in section 3.4.4. This is an online Google Forms document where questions and response options can be checked to better understand the structure of the survey. This approach considers low-income urbanization in Latin America, mostly developed informally, outside of the legal planning covenants and through self-help and participatory practices (Hernández, 2013). For this reason, the approach can be held by residents' initiative who consider the need for improvements in a specific street, deriving an evidence-based assessment that municipal authorities can use to address their concerns.

The first phase refers to the area selection, choosing the extent of the street that will be assessed (Figure 7). In this phase, the use of national statistics and existing local data is helpful to prioritize study areas. Indices regarding crime occurrence and safety perception, together with demographics and socio-economic census would help to guide the selection. Local authorities can create a plan to begin a street-led city-wide assessment. Although this approach is intended to be supported by municipal authorities, is possible that the initiative of inhabitants with basic computer knowledge starts this process.

The second phase is the selection of target points along the area to geo-reference the survey with the corresponding images and provide visual support to respondents (Figure 7). The target points can be similar to the ones proposed in the methodology: bus stops, crossroads, passages, train track crossings, or dead ends. Also, the target points can be schools, hospitals, and other crucial infrastructure in the area. These points can be reassessed in the next phase to ensure the selection represents the conflicting areas. After selecting the target zones, is require adapting the existing Google Forms survey, now with the images of the area and targeted points selected. The photos can be obtained from Google Maps or in the field. After adjusting the survey, one can proceed with the next phase.

The third phase consists of semi-structured interviews with different actors responsible for, or interested in undertaking improvements on public space (Figure 7). The goal is to acknowledge current challenges in the area regarding safety and public participation, collecting local information that helps to understand the best way to address common safety concerns. This phase permits to reflect on the area and targeted points selection and improve the survey in general. It can be useful to determine if additional information needed to guide improvements can be obtained through the survey, helping to develop feasible interventions. Interviewing local government, academics or urban planners, and civil society or NGOs, would help to diversify interests and opinions. By incorporating the main findings from the interviews, the survey should be updated and finalized by the end of this phase.

In the fourth phase, the FG must be held to discuss common safety concerns in the study area prioritizing the voices of residents, but also including businesses, nearby schools, and any other user of the space interested in participating. Also is a great opportunity to pilot the survey draft (Figure 7). The FG should focus on the involvement of diverse actors, to outspoke their concerns and aspirations, prioritizing vulnerable groups. The FG can be held following the description in section 3.4.3, creating first a conversation on the topic, to hear their experiences dealing with municipal authorities when urban interventions are made or needed, providing useful insights about local planning processes. Figure 8 shows some suggestions derived from the FG development. Furthermore, the FGD would help to perform a participatory mapping (Figure 9), to get suggestions for design or interventions that can be incorporated later in the final survey.

Taller participativo: Calle Encanto



Figure 8. Suggestions for improvement obtained during the focus group development.

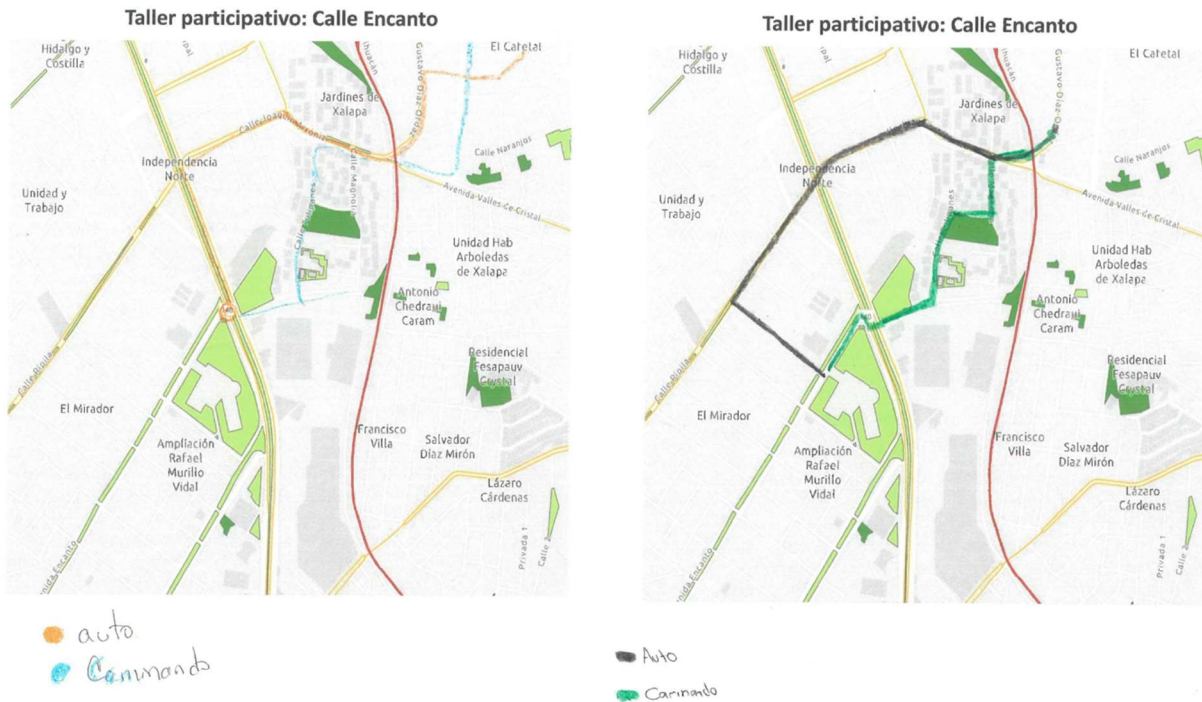


Figure 9. Some responses during the focus group development when I asked how participants move around the area.

The fifth phase of this participatory approach is to release and promote the upgraded survey (Figure 7). For this, flyers and posters in the study area and its surroundings can help to raise attention and increase participation (Figure 10). Also, can be promoted on social media like Facebook or neighbors' WhatsApp groups, and, if possible, official communication channels from the local government. The survey is intended to derive data that municipal authorities can use to inform urban plans intended to derive feasible interventions and improve safety, acknowledging safety perception, infrastructure needs and design suggestions from participants (see survey results, section 4.2.2). Furthermore, the information and assessment can be displayed to communicate the resulting plans to residents and give the chance for more stakeholders to participate in further participatory assessments.



Figure 10. Flyer with the link and QR code to the survey.

Finally, phase 6 is intended to analyze the survey results, and derive information for local authorities (Figure 7). This information would help prioritize feasible interventions in the assessed street, identifying safety perceptions, infrastructural needs and design suggestions, by prioritizing residents' and users' aspirations.

Democracy Diagram

Participatory processes intend to produce informed decisions by giving a degree of power in decision-making to the diverse actors involved, especially those representing citizen preferences. Is important to acknowledge the potential and limitations of participatory processes to understand the role of public participation in local planning. For this reason, the Democracy Diagram is useful to evaluate the participatory safety assessment described in this research.

A comparison of current mechanisms available in local government is helpful to acknowledge the actual scale of communication, power and involvement of residents in Xalapa's planning processes. Findings uncover there are still challenges in facilitating meaningful feedback from users and residents and ensuring their influence. The diagram aids in contrasting the proposed participatory safety assessment with current processes, diving into what would be a desirable social participation scenario. The comparison highlights areas for improvement in fostering more effective public engagement and influence in local planning.

In mechanisms available at the municipality, the involvement of actors is diminished, since only reflects interaction between residents and local authorities, neglecting collaboration with other stakeholders like academics or social organizations. Furthermore, the level of communication is low since residents are mainly spectators and can only express preferences that are not always considered by authorities. Additionally, residents lack decision-making power, often being merely informed about city plans without the ability to promote their concerns. The limited involvement and low communication hinder effective public participation and reduce the influence residents have on local planning processes.

Conversely, the proposed participatory safety assessment involves a higher level of participation by including academics and civil society alongside residents and local authorities. The comparison can be visualized in Figure 11. Communication is enhanced, transforming residents from passive listeners to active participants who can express and develop preferences, thus overcoming tokenism. This approach also increases residents' power, promoting public consultation towards collaborative planning and decision-making to derive more inclusive and effective outcomes.

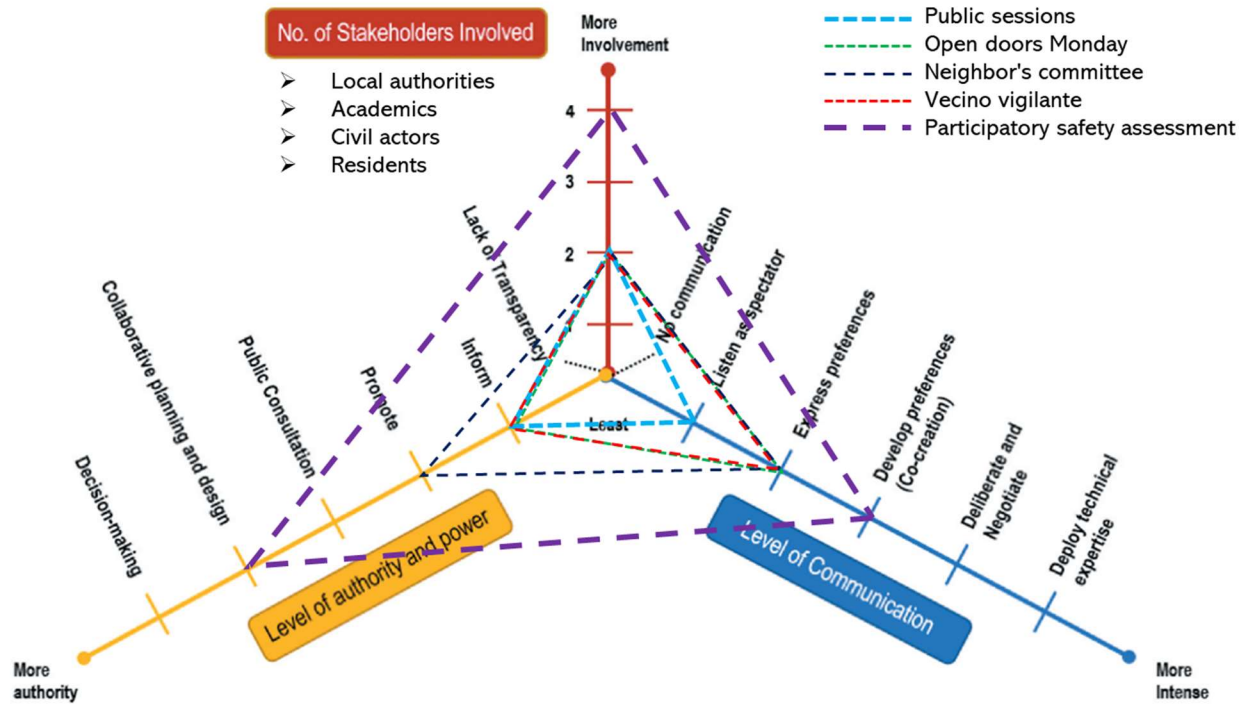


Figure 11. Democracy diagram to compare mechanisms available in Xalapa for public participation with the participatory safety assessment proposed in this thesis (adapted from Alvarado et al., 2024).

Acceptance of the assessment

Regarding the acceptance of this approach, this was generally seen as a chance for residents to participate and facilitate the assessment of safety in streets, deriving useful information to authorities, and considering diverse perspectives, prioritizing users' needs and aspirations.

Local government. I explained to the Regidor that the approach is designed to aid local governments and partners working in public spaces, to acknowledge what is needed to improve them and use available resources efficiently. Also, after reviewing the survey, he agreed that the data collected would derive useful information in the assessment of safety and could be included in municipal planning processes.

University Urban Observatory. I interviewed two academics with experience in local planning processes, including projects on public spaces. Their insights regarding challenges in public spaces, local planning processes and public participation involvement were crucial to define a context-based approach. Currently, there is no direct collaboration between academics and local authorities. Regarding the acceptance of a survey to assess safety in public spaces, academics often face the reluctance of people to participate, since often these initiatives are not implemented (interview academics).

Activist. Considering the perspective of NGOs and activists is important to generate ideas for public space improvements. These groups are cautious about working with government institutions since often their opinions are not taken into account, creating conflict and pushing them to participate in social movements and protests, reclaiming their right to state their concerns (interview, activist).

Focus group participants. I found that, if authorities are the ones who convene the participation, citizens feel more interested in attending. Participants mentioned that they like the opportunity to be involved in processes that help to inform municipal planning and be part of decision-making. They suggested a department within the municipality in charge of this process. Performing a safety assessment in one street was an understandable scale for participants. With the engagement of local authorities from the beginning of this assessment, citizens would feel more eager to participate in the process (focus group participant).

In general, the participants were open during the interviews and focus group, and at the end of the activities during the FG they express to feel included in the assessment. Regarding the survey testing, participants demonstrated recognizing the importance of the questions to evaluate safety. They found the use on the survey of Google images from the area and target points helpful to get oriented and identify the target points. Some suggestions included clarifying ambiguous questions and adding options to some answers. In general, if this safety assessment was made or at least facilitated by the

municipality, residents think there exist more possibilities of interventions since the authorities would demonstrate engagement.

4.2.2 Safety concerns and interventions needed according to survey results

Public spaces encompass streets, parks, gardens and their equipment under Mexican federal law (SEDATU, 2022). For residents, these spaces also include pedestrian corridors, commercial areas, and some areas of difficult management, like the surroundings of train tracks across the city (focus group participants). Adequate provision of safe public spaces relates to improving the city landscape (academics), providing adequate urban equipment (interview regidor), diversifying activities (interview activist, survey respondents) and enhancing mobility (focus group participants). Table 4 shows an overview of the current challenges for safe public spaces in Xalapa.

Table 4. Challenges for safe public spaces identified in Xalapa.

Topic	Challenge
Safety perception	Low rating of safety perception
	Existing crime perception
	Cases where crime was witnessed
	Lack of surveillance in the area
Infrastructure needed	Low-quality infrastructure
	Lack of proper pedestrian infrastructure
	Insufficient public lighting
	Poor quality streets
	Insufficient street furniture
Design suggestions	Promote walkability and cycling
	Create “eyes on the streets”
	Improve design to enhance mobility and access

This section focused on the insights derived from the survey for the safety assessment in Encanto Street. The approach described in section 4.2.1 allowed me to identify the main characteristics of safer public spaces in Xalapa, considering different perspectives, and creating a survey to get these insights. With this survey is possible to identify if respondents think the street lacks appropriate urban infrastructure, or other specific requirements within the studied area. By choosing one street, we can focus on a scale that supports everyday activities within their immediate surroundings (UN-Habitat 2016).

The results analysis is made under 3 headings: safety perception, infrastructure needed, and urban design suggestions (see Table A2 Survey questions rational).

Safety perception

The generalized safety perception rated by participants in my survey is in Figure 12. The five images shown in the survey were rated on average as unsafe, especially points 4, end of street and 5, train track crossing. However, each targeted point holds different reasons that participants consider to make them feel unsafe. These reasons can encompass low-quality infrastructure, insufficient surveillance, or lack of accessibility. The analysis of results helped to elaborate on these reasons and are discussed next.

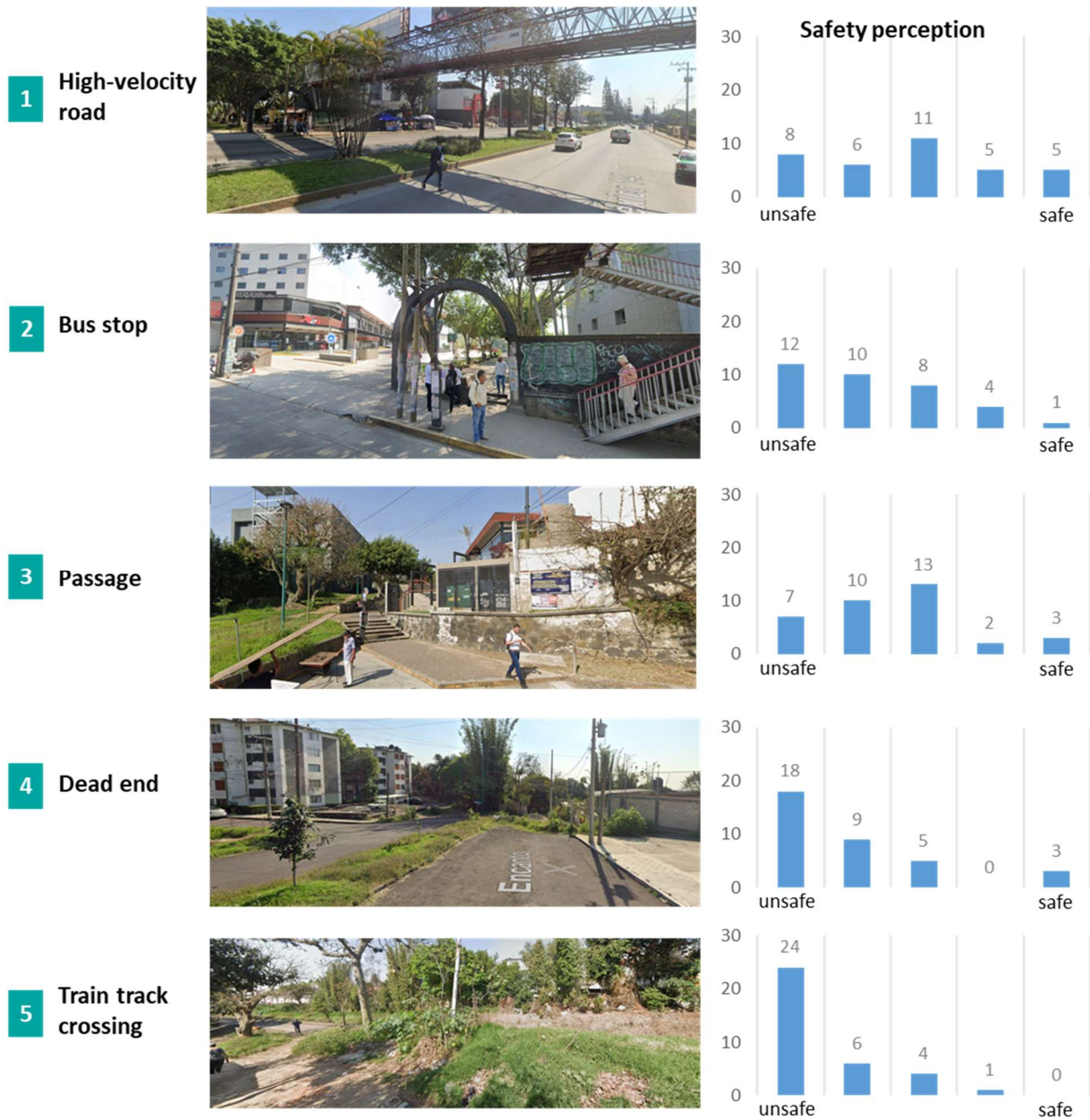


Figure 12. Safety perception in Encanto Street, rated according to survey respondents.

The ENSU report made evident a generalized lack of safety in public spaces, especially for women, as 68% of women consider their city unsafe, compared to 55% of men who think the same. The results from the conveyed survey showed that, for both genders, there is a general concern about safety in Encanto Street. Figure 13 shows respondents' perception of crime on the street.

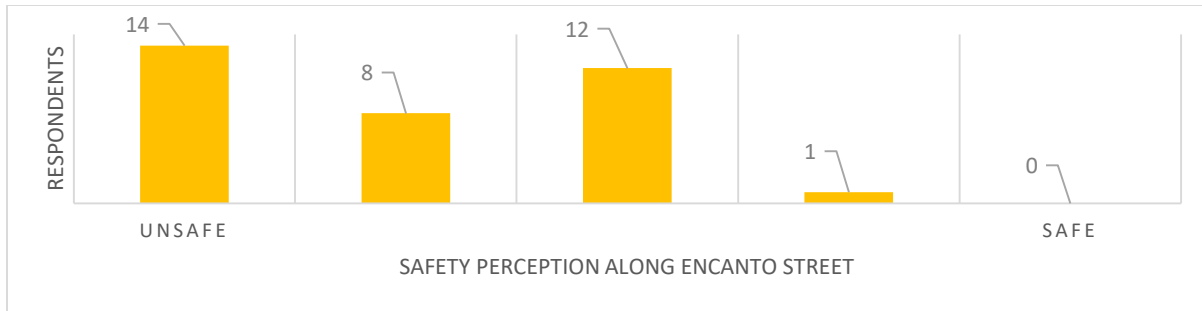


Figure 13. Respondents' perception of crime and violence along Encanto Street.

To elaborate on the reasons for this rating, I asked if incidents related to crime and antisocial behavior have been witnessed in the area in the last year, and allowed participants to select the nearest point where this was faced. As a result, I could identify a higher frequency of incidents at points 1 high-velocity cross, 4 end of street, and 5 train track crossing. This is represented in Figure 14, specifying the frequency and point where the crime was witnessed.



Figure 14. Location and frequency of respondents' experience witnessing crime or violence in the area in the last year.

Regarding safety perception and crime attestation, upgrading police surveillance was related to the enhancement of safety in the street, especially in points 3, 4 and 5

corresponding to the pedestrian passage, end of the street and train track cross. This was also mentioned by FG participants. However, lack of human resources and equipment is a big constraint in the police department (interview, regidor). Furthermore, the lack of trust among residents in the municipal police is another limitation (INEGI, 2023). A police department with enough personnel that is qualified and equipped would be efficient in protecting the city.

Infrastructure needed

Here I discuss the required infrastructure that would improve safety in the street, according to survey respondents. For the first image, high-velocity crossing, the question about the quality of infrastructure was stated differently, assessing if respondents think that the existing infrastructure offers protection against traffic accidents (figure 15). For points 2 to 5, Figure 16 shows the rating regarding infrastructure quality in the street, rated from unsafe 1 to safe 5). The infrastructure questions were based on the importance of urban design and planning for safety, supporting accessible, green and quality streets and other public spaces for all, free from crime and violence (UN-Habitat, 2020b). In addition, the ENSU report derived useful information about crucial infrastructure for safe streets and open public spaces to be considered safe (INEGI, 2023).



Figure 15. The result of asking if the high-velocity crossing (image 1) offers protection from traffic accidents.

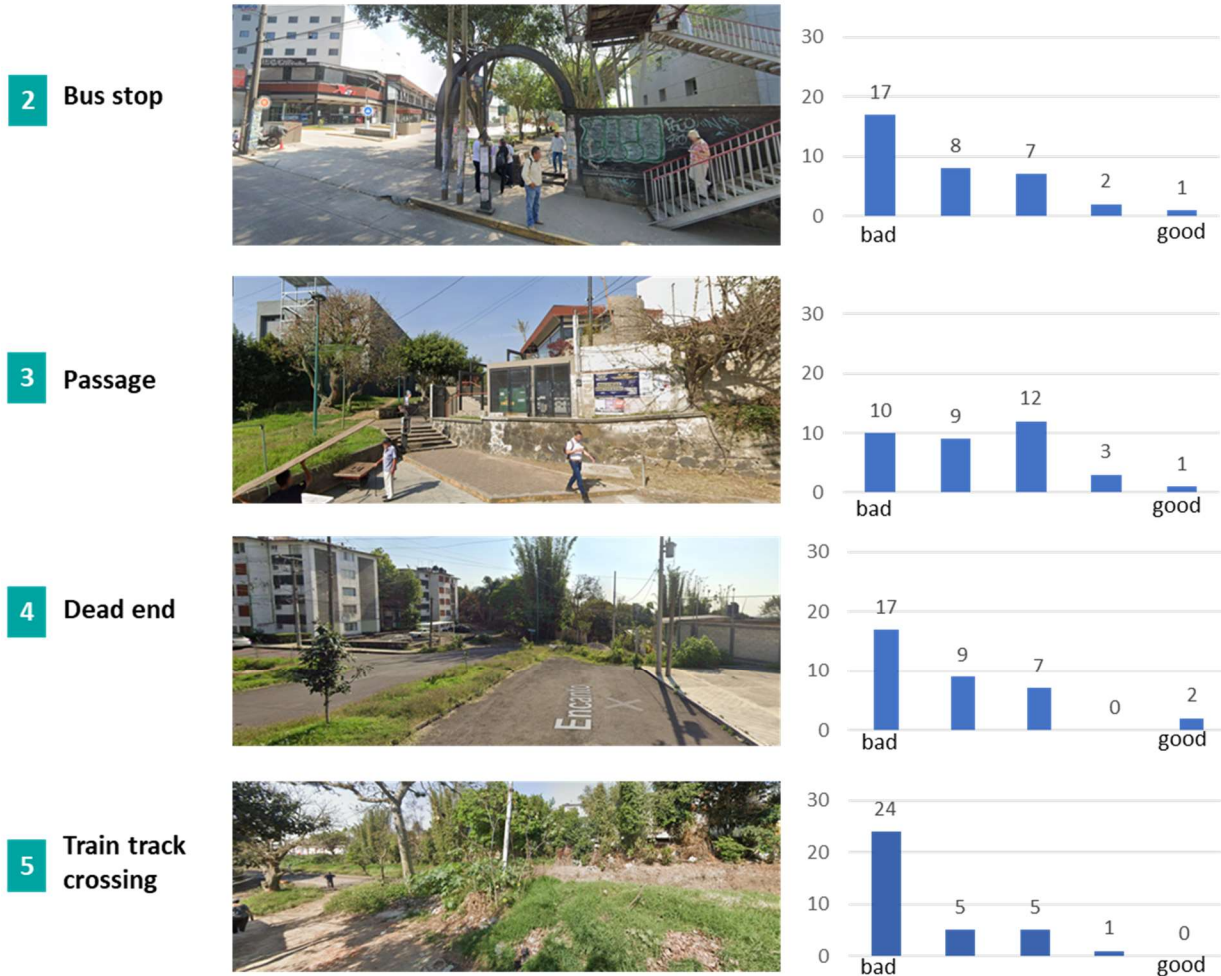


Figure 16. Infrastructure quality, rated according to survey respondents.

To dive deeper into the infrastructural needs to provide safe public spaces, each target point was assessed to find the main needs according to survey respondents. Subsequently, I would elaborate on the main findings for each. Table 5 shows the infrastructural needs of each target point along Encanto Street, considering those mentioned by the majority of respondents.

Table 5. Infrastructural needs on each target point along Encanto Street.

<i>Infrastructure/equipment needed</i>	<i>Avenue crossing</i>	<i>Bus stop</i>	<i>Passage</i>	<i>Dead-end street</i>	<i>Train track</i>
Public lighting	x	x	x	x	x
Access to people with disabilities	x	x	x		x

Police presence			x	x	x
Green areas maintenance			x	x	x
Green areas provision				x	x
Trash cans		x	x		
Benches and rest areas		x		x	
Protection from rain and sun	x	x			
Access to bikes and alternative transport			x		x
Pedestrian access to the train track				x	x
Promote pedestrian mobility					x
Vigilant neighbor				x	
Improve pedestrian bridge	x				

It is important to improve pedestrian mobility to promote a safe environment. FG participants mentioned the need for adequate pedestrian infrastructure, with sufficient sidewalks and corridors. In the survey, I asked about the protection offered against traffic accidents in the high-velocity crossing, image 1 (figure 15). This discussion also arose during the focus group development and reflects the lack of proper infrastructure that prioritizes persons with low mobility, instead of promoting pedestrian bridges. Pedestrian bridges are perceived as inadequate infrastructure that neglects accessibility for elders and people with disabilities (focus group participants). Also, giving the chance to cross the avenue at street level and not relying on bridges was stated as beneficial for pedestrian mobility, especially for people with disabilities (focus group participants). Enhancing sidewalks for pedestrian use is one soft measure for urban safety (UN-Habitat, 2020b).

Lack of access for people with disabilities deters the provision of safe public spaces to all users. Access for people with disabilities or low mobility is a main concern in Encanto Street. The survey assessed the access for people with disabilities along the five targeted points in Encanto Street. Most respondents consider that there is no adequate infrastructure along the street (figure 17), and this underlines the need to achieve accessible streets and open public spaces for all, especially for vulnerable groups.

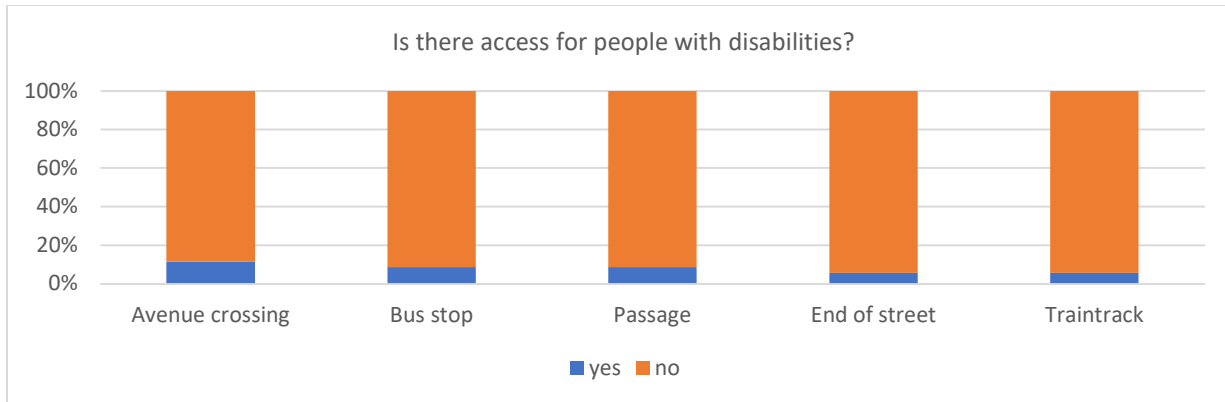


Figure 17. Presence of infrastructure to allow access for people with disabilities, according to survey respondents.

Regarding other infrastructural needs, insufficient public lighting is a main challenge for local authorities in the provision of safe public spaces. Adequate public lighting in streets was the main demand at every target point along Encanto Street. Insufficient public lighting in streets and open spaces is a national concern since it was mentioned by 40% of respondents of the ENSU report as common in their urban areas, decreasing safety perception and increasing crime (INEGI, 2023). This concern was confirmed by FG participants. The Municipal representative stated that insufficient public lighting in the city is mainly due to deficient infrastructure provided by previous administrations (interview Regidor).

Poor-quality streets are another infrastructural challenge. Xalapa is a capital city with a floating population that travels from nine municipalities that conform to the metropolitan area, causing traffic congestion and affecting street infrastructure, making them unsafe (interview, regidor). In general, the streets in Xalapa are not suitable for walking, the sidewalks are narrow, with numerous accidents caused by cars, fractures in the pavement, unfinished water leak repairs, steps, slippery sidewalks and steep slopes (Xalapa's Municipal Development Plan, 2022). Moreover, according to the ENSU report, 77% of the surveyed population mentioned that potholes in streets and avenues are common in urban areas and this is seen as deficient government performance (INEGI, 2023).

The lack of adequate urban equipment diminishes the sense of safety in the street. One remark is the absence of street furniture such as trash cans, benches and rest areas. Also, offering protection against sun and water is essential, especially for users of the bus stop. The provision and maintenance of green areas is something that would enhance the street, particularly in the passage and the train track. Finally, besides the promotion of pedestrian mobility, facilitating access to bikes and alternative transport derives in the enhancement of access in the area. Table A3 in annexes shows the complete results regarding infrastructure needs obtained from the survey and the number of respondents for each.

Suggestions to improve safety

Promoting walkability and cycling are principles supporting well-designed networks of streets and open public spaces (UN-Habitat, 2020b). In addition, these measures can improve the health and well-being of the inhabitants. The mapping exercise during the FG derived the need to improve mobility in the area. Besides, allowed participants to express specific concerns, such as the need for adequate infrastructure in the area near the railroad and improved access to people with disabilities.

Other suggestions for improvement were based on diversifying uses in the space to attract more users at different hours (focus group development, academics, activist). Creating “eyes on the street” ensures safety (UN-Habitat, 2020b), since the presence of people on sidewalks and streets increases the vigilance of those who have a stake in, fostering social cohesion and safety. Well-connected streets and mixed-use development focused on pedestrian-friendly spaces help to maintain “eyes on the street” and enhance access to amenities (UN-Habitat, 2020b). Also, increased access to economic opportunities can help to prevent crime. Initiatives like “vecino vigilante”, for example, should be supported with solutions based on mixed land use and densification.

A challenge to undertake for safer public spaces in Xalapa is to promote their use and appropriation (interview, activist). In the survey results, using the area for the bus stop or visiting the commercial centers are the most frequent uses. The area selected was considered an important connection point (focus group participants) since there are commercial land uses and government offices, gated facilities and popular housing around. It is important to avoid fragmented urban places that promote exclusion and privatization (Hernández, 2012). Promoting the diversification of activities (survey respondents) and improving mobility (focus group respondents) were some suggestions to improve the area and attract more users, increasing non-invasive surveillance (UN-Habitat, 2020b).

In the survey, I suggest an urban intervention to improve safety. I asked participants to agree or disagree with the urban design suggested for the study area. This intervention was derived from the FG and proposes the improvement of pedestrian mobility and connectivity of the street allowing it to reach from point 1 to 5 through a pedestrian corridor (Figure 18). When comparing the results in Table 5, the train track and dead-end of the street are the points where more interventions are needed, and the ones considered less safe. Hence, these are the main points to improve with the provision of adequate pedestrian infrastructure.

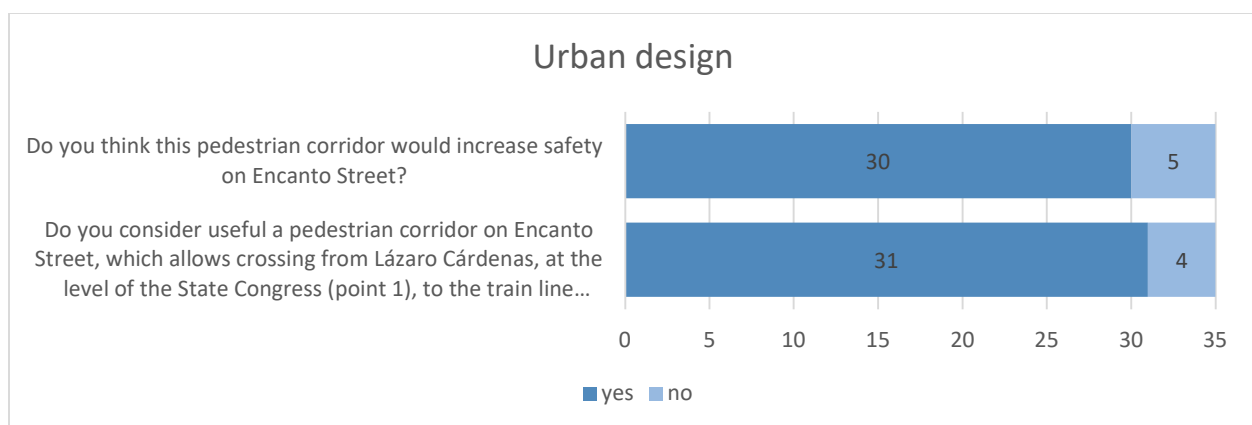


Figure 18. Urban design proposal in the survey, as a suggestion for safety improvement in the study area.

Additional suggestions from respondents regarding other ideas to improve safety were:

- “Lighting and security.”
- “I think that the greater the occupation/use of the space, the greater the security.”
- “Actions to rescue public spaces, encouragement of entrepreneurs who start businesses, domestic sales.”
- “Along with enabling a pedestrian corridor, it is necessary to complement it with continuous surveillance in the area.”

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

This paper aimed to explore how to support public participation in local planning processes to improve safety in public spaces. To address this aim, an exploratory qualitative approach was developed, including a literature review, interviews, a focus group and a survey. The literature review allowed me to convey a street-led participatory approach focused on deriving an online survey to assess safety. A case study in Xalapa, Mexico, was conducted, where insights from local authorities, academics, civil society and residents suggested the need to promote public involvement and increase residents' representation in public space initiatives. In response to this need, the thesis identified that local authorities should enable a collaborative process for residents and civil society to assess public spaces and derive suggestions for how to improve these.

The case study in Xalapa helped to understand the adoption of participatory processes to strengthen public participation. Interviews with different stakeholders and a focus group with residents revealed current challenges for safe public spaces and limitations of public participation in local planning processes. The democracy diagram helped analyse the impact of public participation in local planning, the diversity of participants involved, and improved communication. It compared my participatory approach with mechanisms available in the municipality, showcasing how my approach fosters more inclusive and effective public engagement. Based on the findings, I argue that broader communication between residents and local governments is necessary, supporting mutual learning and collaboration to improve planning practices.

Policies must promote civil empowerment. The development of this pilot project in one street proved to be an efficient and inclusive assessment, intended to identify individual safety perceptions from residents and users of the study area. Findings uncovered that the proposed participatory safety assessment if considered by local authorities, is effective in improving communication channels and empowering residents. This approach facilitated a transparent and inclusive decision-making process, ensuring that residents' perspectives were accurately represented, and planning from a bottom-up perspective.

The approach provides a powerful tool for mapping safety concerns and facilitating data-driven decision-making processes. The focus group allowed to map mobility and suggestions for improvement in the area. Also, to provide spatial reference in the online survey, images encompassing a top-down view of the area and target points worked well to spatially locate respondents' concerns. Results revealed significant patterns in public space usage and safety issues, identifying safety perception, infrastructure needed and suggestions for improvement.

Local authorities should integrate geo-information systems and public participation in their planning and management processes. In this research, GIS mapping was employed to identify hotspots of safety concerns in one street, allowing for targeted interventions. Ongoing use of GIS for monitoring and evaluation will ensure that interventions remain responsive to the dynamic needs of the urban environment. Moreover, interagency collaboration could significantly enhance public consultation. Collaboration with the University Urban Observatory, for example, will increase residents' trust in local authorities, allowing academics to deploy technical expertise and visually represent urban plans in an understandable way.

Limitations

The limitations include the overall representativeness of the findings, which might be impacted due to the number of respondents. Although the sample was not demographically representative, it provided sufficient information to evaluate one street and address common concerns in the area. Greater diffusion through social media and official government channels would enhance participation. Additionally, weak participation can be partly due to residents' unfamiliarity with participatory practices and a general lack of trust in authorities. Improved education and engagement strategies could mitigate these issues. Finally, assessing more streets would have provided a stronger basis for gathering data and identifying opportunities for improvement of the proposed approach.

Future research

Future research should explore the broader application of the participatory safety assessment approach to other streets in Xalapa, allowing a city-wide assessment to convey a master plan for safety improvement. Furthermore, extending this assessment to other urban areas would examine how diverse institutional structures, cultural contexts and local governance practices influence its effectiveness. Investigating the integration of geo-information systems with participatory approaches across different regions can provide insights into the adaptability and scalability of the participatory safety assessment proposed. Additionally, longitudinal studies could assess the long-term impact of participatory safety assessments on local planning and safety improvements, ensuring that interventions remain responsive to evolving community needs.

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ANNEXES

Table A1. Actors interviewed during fieldwork in Xalapa, and semi-structured open questions (own elaboration).

Stakeholder	Municipal Regidor	Urban Observatory of the Universidad Veracruzana	Activist
Date of interview	22/11/2023	20/11/2024 and 28/11/2023	29/11/2023
Regarding local planning processes		How was your experience working with the municipality in projects to improve public spaces?	
		There was any follow-up with this methodology by the city council to carry it out?	
		How do you think public participation can be incorporated into urban planning to improve, for example, an issue as important as safety nowadays?	
	What information does the municipality need to carry out interventions?		What has been your experience trying to reach the authorities?
Regarding challenges on public spaces	What are current challenges in public spaces?	What are the current challenges in public spaces?	What are the current challenges in public spaces?
	How does the municipality perceive safety in public spaces?		Do you think actions have been taken in urban planning to improve safety? for example, for women and children?
Regarding public participation	What is public participation like in Xalapa?	Was there any public participation in the planning process?	What is public participation like in Xalapa?
	How does the municipality use that public participation to carry out its urban planning?	How do you think the municipality uses public participation for its urban planning?	What do you think is the role of the municipality regarding public participation when it comes to urban planning?
	What information does public participation provide?	Do you think it is possible for the municipal level to provide more initiatives regarding public participation on public space projects?	What information do you think the municipality needs to carry out interventions in public spaces?
	How do you think public participation could be improved?		How do you think public participation can be incorporated into urban planning?

Table A2. Survey questions rational

Question	Options	Rational	Source
Gender	Woman Man Other	User profile (e.g. vulnerable groups) Inclusiveness	INEGI, UN-Habitat
Age	Less than 18 18-24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-69 70-74 75-79 80 or more	User profile (e.g. vulnerable groups) Inclusiveness	INEGI
Do you have any disability?	None Physical disability Hearing disability Visual disability Mental disability Multiple disability	User profile (e.g. vulnerable groups) Inclusiveness Accessibility	INEGI, UN-Habitat
How close you live to Encanto street	I live in Encanto street (I am a neighbor) I live close to Encanto street (I live in a nearby neighborhood) I live in Xalapa I live outside Xalapa	Spatial relationship	
How often you use this street	Scale 1- Not often 5- Very often	Spatial relationship	
For which reason you use this street? can select several options	I walk from/to home I use the bus stop I work nearby this street I use the space for recreation I visit the commercial area I go to a government office in the area I am a tourist None/other	Spatial relationship	

How safe you consider this pedestrian cross? See image 1	Scale 1- Unsafe 5- Safe	Safety perception	
Do you consider this area offers access to people with disabilities?	Yes No	Accessibility Inclusiveness	
Do you consider this pedestrian cross offer protection against traffic accidents?	Yes No	Accessibility Safety perception	
What is needed to improve safety in this area?	Improve pedestrian bridge Public lightning Police presence Shelter from rain and sun Speed reducers Access to people with disabilities	Urban interventions	
How safe you think this bus stop is? See image 2	Scale 1- Unsafe 5- Safe	Safety perception	
Do you consider this area offers access to people with disabilities?	Yes No	Accessibility Inclusiveness	
Do you consider the infrastructure and maintenance on this area is:	Scale 1- Bad 5- Good	Urban interventions	
What is needed to improve safety in this area?	Public lightning Police presence Shelter from rain and sun Trashcans Benches and rest areas Speed reducers Access to people with disabilities Other	Urban interventions	
How safe you consider this passage in Encanto street? See image 3	Scale 1- Unsafe 5- Safe	Safety perception	
Do you consider this area offers access to people with disabilities?	Yes No	Accessibility Inclusiveness	

Do you consider the infrastructure and maintenance on this area is:	Scale 1- Bad 5- Good	Urban interventions	
What is needed to improve safety in this area?	Public lightning Police presence Shelter from rain and sun Trash cans Benches and rest areas Green area maintenance Park or playground Outside gym Little market Access to people with disabilities Access to bikes and alternative transport modes Other	Urban interventions	ENSU
How safe you consider this area in Encanto street, before the railroad cross? See image 4	Scale 1- Unsafe 5- Safe	Safety perception	
Do you consider this area offers access to people with disabilities?	Yes No	Accessibility Inclusiveness	
Do you consider the infrastructure and maintenance on this area is:	Scale 1- Bad 5- Good	Urban interventions	
What is needed to improve safety in this area?	Public lightning Police presence Benches and rest areas Playground or gym Green area maintenance Pedestrian access to cross the railroad "neighbors wathcing" program Community center Community market Access to bikes and alternative transport modes Other	Urban interventions	
How safe you consider this area nearby the railroad, were Encanto street	Scale 1- Unsafe 5- Safe	Safety perception	

ends? See image 5			
Do you consider this area offers access to people with disabilities?	Yes No	Accessibility Inclusiveness	
Do you consider the infrastructure and maintenance on this area is:	Scale 1- Bad 5- Good	Urban interventions	
What is needed to improve safety in this area?	Public lightning along the railroad Police presence Green area maintenance Pedestrian access to Encanto street Access to people with disabilities Pedestrian infrastructure along the railroad Bike line along the railroad Other	Urban interventions	
In this area, have you witnessed any crime in the last 12 months? See the image and specify the approximate place selecting one or more options	1 2 3 4 5 I have not witnessed any crime in the area	Safety perception	
Talking about crime and delinquency, this area is:	Scale 1- Unsafe 5- Safe	Safety perception	
Do you consider useful a pedestrian corridor on Encanto Street, which allows crossing from Lázaro Cárdenas, at the level of the State Congress (point 1), to the train line (point 2)?	Yes No	Urban interventions	

Do you think this pedestrian corridor would increase safety on Encanto Street?	Yes No	Urban interventions	
Please write a suggestion to improve safety in Encanto street.	Short text	Urban interventions	

Table A3. Infrastructure needed according to survey results

	1	2	3	4	5
<i>Infrastructure/equipment</i>	<i>Avenue crossing</i>	<i>Bus stop</i>	<i>Passage</i>	<i>End of street</i>	<i>Train track</i>
Public lighting	23	31	29	34	32
Access to people with disabilities	30	26	30		27
Police presence	11	14	19	22	23
Green areas maintenance			24	28	26
Green areas provision				28	26
Trash cans		24	26		
Benches and rest areas		26		22	1
Protection from rain and sun	20	28			
Access to bikes and alternative transport			22		24
Pedestrian access to railtrack				22	23
Promote pedestrian mobility	1			1	26
Park or playground			14	13	
Outdoor gym equipment			14	13	
Speed reducers	11	9			
Vigilant neighbor				20	
Improve pedestrian bridge	18				
Community market			5	5	
Community center				9	
Allow crossing at street level	1				1
Alternative sidewalk materials			1		1
Regulate bus schedule		1			

230619 REQUEST FOR ETHICAL REVIEW

Request nr: 230619
Researcher: Landa Vazquez, A. (M-GEO-WO)
Supervisor: Pinto Soares Madureira, A.M. (ITC-PGM)
Reviewer: Fadel, I.E.A.M. (ITC-AES)
Status: Positive advice by Reviewer
Date of application: 11-11-2023
Request version: 3

Intro form: 7 - Introduction
Middle form: 10 - Geo-Information Sciences (GEO)
Outro form: 5 - Submission

0. GENERAL

0.1. Personal details

Student/employee number: s2918277
Initials: A.
First name: Anabel
Last name: Landa Vazquez
Email : a.landavazquez@student.utwente.nl
Education/department:
Faculty:

0.2. Project title

Public participation to assess safety in public spaces

0.3. Summary

This research explores the role of public participation, addressing a common concern in Latin American cities: the lack of safety in public spaces. The SDG Indicator 11.7.1 Training Module: Public Space, states that well design and maintained public spaces can contribute to the improvement of safety (UN-Habitat, 2018). Additionally, at the national level in Mexico, lack of safety it is a general concern stated by research conducted by the federal government institutions (INEGI, 2023). The aim of the thesis is to create a guidance for the municipal authorities, regarding safe public spaces along with public participation. For this, I performed 3 interviews to different actors: a municipal representative, an academic from the Urban Observatory of the Universidad Veracruzana, and an activist. The goal was to understand their perspective and identified issues regarding urban planning and public participation on this. With this input and the data from the National Statistics Agency, a survey assessing safety in public spaces (streets, parks, gardens and its equipment) was created. After this, a focus group was conducted to explain the identified problem in the interviews: lack of public involvement regarding safety in public spaces and to test the survey. Furthermore, I was able to conduct a participatory mapping were the attendants contribute to confirm the lack of safety in the railroad. The proposed output is to develop recommendations derived by the public participation assessment, that would allow municipal authorities to perform interventions in the urban landscape to provide safe public spaces. A case study in Xalapa, Mexico

is conducted. The methodology design is based on a systematic literature review to select indicators of safe public spaces, to create a survey for users of the specific area. For the interviews I collected only job position, with the recorded agreement. The focus group and the survey do not collect any personal data and are anonymized.

0.4. Start date (estimated) and end date (estimated) for your research project

Start date: 17-01-2024

End date: 18-01-2024

0.5. If additional researchers (students and/or staff) will be involved in carrying out this research, please name them: [Please include full name and email]

Full name	Email
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0.6. In which context will you conduct this research?

Master's thesis

0.7. Please select your supervisor

Pinto Soares Madureira, A.M. (ITC-PGM)

0.8. Please select an ethical committee

Geo-Information Sciences (GEO)

1. SPONSORS

1.1. Provide an overview of all third-party sponsors of this project

Sponsor name	Funding provided (in euro equivalent)	Funding purpose within the project
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None

2. DATA COLLECTION

2.1. Will you collect (or work with) data in your project that describes real-world situations or that derive from real-world situations?

Yes

2.2. List all methods that are used for data collection in your project.

Individual interviews

Three interviews are conducted, the only personal data collected would be job position. The first interview is with a representative of the municipality regarding the current challenges in public spaces and public participation. Also, he was asked to provide feedback and suggestions regarding the survey. The data collected from the interview would help to identify/justify the variables of the survey that will be applied to general users of the space.

The second interview is with an academic from the Urban Observatory in the Architecture Faculty from the Universidad Veracruzana. He would provide useful information to answer similar questions. Third, an interview with a local activist would derive insights about the same topics. For the 3 interviews I used almost the same questions regarding current public participation in urban planning, rules and regulations involving this and current situation regarding safe public spaces according to the SDG goal mentioned in the previous section. This interviews were recorded and the transcript is available for consulting. Also, in the Methodology chapter will be mentioned the main findings in each interview related to the research objectives.

Group interviews

A focus group with NGO's, academics and neighbors of the study area would provide feedback and suggestions regarding the survey. First, participants (12 people) will be asked if they agree/disagree 3 statements regarding safety and public participation. After that, the survey for assessing safe public spaces is answer and discussed with them to find improvements for clarity and usefulness. I clarify that the pilot area is Encanto street but the methodology can be use to assess other streets, parks, or larger areas of public space. Finally, in a participatory mapping exercise, the participants trace their route in the study area, and their ideas for improvement.

Surveys by me or my team

Google form survey for the assessment of safety in the selected public space, intended for every user of the space, being neighbor or just a user. Regarding the survey, I will collect gender, age and disability and if they use/ reside close to the space. These variables will be collected as they are mentioned in international agendas to identify vulnerable groups. For this research, the results will be aggregated so it won't be possible to identify individuals based on their responses. The informed consent is at the beginning of the survey for every respondent to read it an follow up with the survey if they agree.

Usage of existing data sets

Use of statistical data from Mexico (INEGI) and UN-Habitat (tool-kits)

2.3. Describe the dataset(s) you will collect, create, and/or use. Please provide a short name and longer description (if needed).

Short name of data set to be collected	Extended description of dataset	Space/Time Granularity	Valid date and geographic coverage
Public space assessment	Result from google forms survey	spatial overview	Xalapa city, nov-dec 2023

2.4. Describe the data collection procedure(s) that can have potential effects on people's lives.

The results would serve as guidance to improve safe in the area, through the suggested recommendations of public participation (survey)

2.5. Which ethical threats can be in play during data collection?

Threat short name	Threat long name	Data set(s) involved	Mitigation measure(s)
Short survey	Customize survey with anonymized data	Survey results	Online and anonymized

2.6. Describe if you plan to apply or develop methods that enrich data from one source with data from other sources.

The questions in the survey derived from the SDG 11.7 toolkit and the safety perception national survey (INEGI) and the recommendations derived to improve the survey would come from the interview and focus group. The data collected would be anonymous in every stage.

3. ETHICAL ISSUES OF WORKING WITH HUMAN PARTICIPANTS

3.1. Does your research work, directly or indirectly, with data about humans?

Yes

3.2. Describe the characteristics of the individuals or groups who are the focus of your research (i.e., those from (or about who) you are collecting/using data).

As I have mentioned, the first part of the fieldwork are the 3 interviews collected to understand their perspective. Then, a focus group with 12 participants is performed to test the survey. Finally, the survey is release for

users of the space, in this case Encanto street. For this qualitative research we made an estimate about the information at interest, as the aim is to explore the extent of variation from the survey in phase 3. The sampling size does not occupy a significant place and is determined by the data saturation point when no new or useful information is obtained (Kumar, 2011). The sampling design is classified as non-random, given that the number of elements is yet unknown. Is based on a purposive sampling, relying on literature review to decide who can provide the best information to achieve the objectives of the study (Kumar, 2011). Also, it would derive a snowball sampling, using the groups involved in the focus group as networks to promote the survey described in phase 3.

1. Generic actors: general users of the space.
2. Strategic actors: municipal authorities, NGO's representing vulnerable groups, neighbors.

3.3. Indicate where the study will take place, how long the data collection process will take, and how long on average any single study subject (ie, person) will be exposed to your procedure.

The fieldwork would be conducted in the city of Xalapa, Mexico. The area is in the geographical center of the city, within an important urban node. The survey would take around 10 minutes to be completed, allowing only one survey per user.

- 1 Nov. 20-26 - Interview with authorities I make a general explanation of the research aim, to inform the process and show the survey, to get feedback
- 2 Nov. 27- Dec. 3 - Focus group with NGO's I make a general explanation of the research aim, to inform the process and show the survey, to get feedback
- 3 Dec. 4-10 - Survey update
- 4 Dec. 11-17 - Survey collection Online survey for users of the study area
- 5 Dec. 18-21 - Survey collection Online survey for users of the study area
- 6-7 Dec. 22- Jan. 7 - Results analysis Work on data processing
- 8 Jan. 8-14 - Feedback with authorities
- Return to Netherlands Results discussion to get insights for improvement

3.4. Will you inform your study subjects about the research, the study, the handling process of the personal data, and all the rights they are entitled to when they participate in it?

Yes - we will inform study participants of their rights

3.4.1. How are you informing the study subjects? What is the chosen communication channel? Is it appropriate for their understanding? (Language, technology, written versus spoken, use of a trusted intermediate ...)

Since my research only request age, gender and disability, the survey would content a non disclosure form, and the participants would be previously informed about the research aim and data use.

3.4.2. Informed consent normally means that you will also brief and debrief your study subjects, and possibly that you require to have external approval from third parties. (This can be some organization, some community lead, possibly a government agency.) Please share the third-party approvals if applicable via the upload mechanism here.

Informed Consent Form.pdf

3.5. Will you use a letter/statement of consent to ask people for their informed participation?

No

3.5.4. Why you think a consent letter or statement is not necessary?

It would be the first question in the survey

3.6. Which risks have you identified regarding confidentiality of the collected data?

In the focus group, I would ask this question, since I have not identified any confidentiality issues. The data collected does not contain personal data.

3.7. Will study subjects receive any reward, incentive or payment for their participation in the study?

No, they are voluntary participants interested in the stated problem

4. DATA MANAGEMENT AND PERSONAL DATA

4.1. Will you collect (or work with) personal data in your project?

Yes

4.1.1. Describe which personal data and background information is being collected about potentially identifiable natural persons.

the only personal data requested in the interviews was job position. For the focus group and the surveys only age, gender and disability was asked, to identify vulnerable groups once the data is aggregated and analyze. Another question in the survey is if they reside near the study area, but again, the results will be aggregated so it won't be possible to identify individuals based on their responses.

4.1.2. Which data handling software will you use to store and/or analyse the personal data? On which computer system(s) will this software run, and who will have access?

The transcripts for the interviews and focus group will be saved with their respective audio, and only the insights useful for this research will be reported in the final document. The survey results are collected in google forms and they derive an csv file to be further analyze.

4.2. Can the data be re-used for later studies, and if so, does this induce further confidentiality issues or concerns?

Yes, the data can be used for later studies, since I have no identified any confidentiality concern.

4.3. "I have read the UT Data policy and the specific activities and responsibilities I have in my role"

Yes

5. OTHER IMPACTS

5.1. Please choose the types of intended outputs/results of your research project.

New data
Assessment of safety in a specific area.

New policy/laws/regulations/standards
Public space interventions.

5.2. Please choose the types of intended impact of your research project.

Cultural/social impact
Interventions to improve safety in public spaces

5.3. Does your project have the potential to develop by-products?

No

6. ADDITIONAL INFORMATION

6.1. Do you have any supplementary material that might be useful for the reviewing of this request?

Encuesta.pdf

6.2. Do you want to add anything else to this request before you are going to submit it?

No

7. CLOSURE

7.1. I have answered all questions truthful and complete

Yes

8. COMMENTS

Fadel, I.E.A.M. (ITC-AES) (20-02-2024 14:17) :

Dear Landa,

The fieldwork plan is well-designed, and you made a good effort to address the most crucial parts from an ethical point of view. I liked many parts of your design, for example, the attention you gave to the data anonymous storage and using abstract information only instead of direct personal information. However, a few points I would like to suggest:

- 1- Maybe you should make it clear that participants in the survey have the freedom to drop off at any moment without any consequences.
- 2- I would strongly recommend you store your raw data on the UT network, which has a good level of security. Also, encrypting the data would be important to prevent the misuse of your recorded interviews in case of data leakage from the network due to any hacking activities.
- 3- I feel that there is only one way of information flow. While as a scientist, you need the data from the surveys for your research, those people who help you on the ground voluntarily need special attention. Keeping the communication and early access to your results in a simplified way they can understand would be very much appreciated by them. Such good long-term communication channels would open the doors for future researchers to get better support in the future and maybe would open more doors for your future research, maybe for your PhD :-).

Best regards,
Islam Fadel

Pinto Soares Madureira, A.M. (ITC-PGM) (12-12-2023 11:06) :

Please see the comments that I made on the file itself. I will send it by email.

Pinto Soares Madureira, A.M. (ITC-PGM) (20-11-2023 16:28) :

Dear Anabel

you only focus on the survey. But what about the interview and the focus group discussion. How will this be conducted? What type of data do you collect. Regarding the survey, you will collect gender, age and disability and if they use/ reside close to the space. So you need to explain that these variables will be collected and why, but that the results will be aggregated so it won't be possible to identify individuals based on their responses.

9. CONCLUSION

Status: Positive advice by Reviewer

Informed Consent Form

Title of the Study: Safety assessment in public spaces

Principal Investigators: Anabel

Introduction: You are invited to participate in a research study conducted by ITC. This study aims to convey information to analyze the current status of Encanto street.

Description of the Study: This research involves a survey to gather information about users of this public space in Xalapa, with the goal of mapping the current status of safety in the area.

Voluntary Participation: Participation in this study is voluntary. You have the right to withdraw from the study at any time without consequence.

Data Collection and Processing: We will collect non-personal data that will be processed in accordance with the General Data Protection Regulation (GDPR). It will be stored securely and will only be accessible to the research team. Your data will be anonymized, and all efforts will be made to ensure the confidentiality and privacy of your information.

Data Storage and Sharing: The anonymized data may be stored and shared with other researchers or organizations for academic or research purposes.

Consent: By proceeding with the survey, you indicate that you have read and understood the information provided in this consent form. You voluntarily agree to participate in this study.

Encuesta: seguridad en espacios públicos

Percepción de seguridad en la calle Encanto, en Xalapa Veracruz

* Indica que la pregunta es obligatoria

1. 1. Género *

Marca solo un óvalo.

- Mujer
- Hombre
- No binario

2. 2. Edad *

Marca solo un óvalo.

- <18
- 18-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55-59
- >60

3. 3. ¿Cuál de las siguientes opciones describe mejor su situación? *

Selecciona todas las opciones que correspondan.

- Ninguna discapacidad
- Discapacidad física
- Discapacidad sensorial
- Discapacidad intelectual
- Otra

Uso del espacio

4. ¿Qué tan cerca vives de la calle Encanto? *



Marca solo un óvalo.

- Vivo en la calle Encanto (vecino)
- Vivo cerca de la calle Encanto (área de influencia)
- Vivo en Xalapa
- Vivo fuera de Xalapa

5. ¿Por qué razones utilizas este espacio público? *

Selecciona todas las opciones que correspondan.

- Camino desde/a casa
- Uso la parada de autobús
- Trabajo cerca de la calle Encanto
- Uso el espacio para recreación
- Visito los centros comerciales
- Acudo a una institución de gobierno
- Soy turista
- Otros: _____

6. ¿Qué tan seguido utilizas el espacio? *

Marca solo un óvalo.

1 2 3 4 5

Poco: Muy seguido

7. Esta área ofrece la oportunidad de: *

Selecciona todas las opciones que correspondan.

- Caminar
- Sentarse y descansar
- Observar el paisaje
- Hablar y escuchar
- Jugar y ejercitarse
- Cubrirse de la lluvia y sol
- Esparcimiento y recreación
- Acceso a personas con alguna discapacidad

Percepción de seguridad

Queremos conocer tu opinión con respecto a la seguridad en este espacio público

8. En esta área, ¿has sido testigo o enfrentado algún crimen en los últimos 12 meses? *
Especifica el lugar aproximado.



Selecciona todas las opciones que correspondan.

- 1
 2
 3
 4
 No aplica

9. Hablando de crimen, consideras esta área: *

Marca solo un óvalo.

1 2 3 4 5

Inse ○ ○ ○ ○ ○ Segura

Seguridad peatonal

Queremos conocer tu percepción del cruce peatonal en la calle Encanto

10. ¿Qué tan seguro consideras este cruce peatonal? *



Marca solo un óvalo.

1 2 3 4 5

Inse Seguro

11. ¿Considera que esta área ofrece protección contra el tráfico o accidentes viales? *

Marca solo un óvalo.

Si

No

12. ¿Considera que esta área ofrece acceso a personas con alguna discapacidad?

Marca solo un óvalo.

Sí

No

13. ¿Qué se necesita para mejorar la seguridad en este espacio público? *

Selecciona todas las opciones que correspondan.

- Mejorar el cruce peatonal
- Iluminación pública
- Presencia de policías
- Bancas y áreas de descanso
- Reductor de velocidad
- Mejorar las paradas de autobús
- Vecino vigilante
- Infraestructura para personas con discapacidad

Seguridad en paradas de autobús

14. ¿Qué tan segura consideras esta parada de autobús? *



Marca solo un óvalo.

1 2 3 4 5

Inse ○ ○ ○ ○ ○ Segura

15. ¿Qué se necesita para mejorar la seguridad en este espacio público? *

Selecciona todas las opciones que correspondan.

- Iluminación pública
- Presencia de la policía
- Mantenimiento de las áreas verdes
- Bancas y áreas de descanso
- Área de juego infantil / Aparatos para ejercitarse
- Mejorar la parada de autobús
- Vecino vigilante
- Acceso para personas con alguna discapacidad

16. Considera que la infraestructura y el mantenimiento de este espacio público es: *

Marca solo un óvalo.

1 2 3 4 5

Mala Bueno

Diseño urbano

Queremos saber qué mejoraría la seguridad en este espacio público

17. ¿Qué mejoras recomendarías en este pasaje junto a la plaza comercial "Encanto"?

*



Selecciona todas las opciones que correspondan.

- Jardines y áreas de descanso
- Parque y juegos infantiles
- Área verde
- Mercadito
- Centro comunitario
- Espacio cultural
- Acceso para personas con discapacidad
- Acceso para bicicleta y otro medios de transporte alternativos

18. ¿Qué tan segura consideras esta área? *

Marca solo un óvalo.

1 2 3 4 5

Inse ○ ○ ○ ○ ○ Segura

19. Considera que la infraestructura y el mantenimiento de este espacio público es: *

Marca solo un óvalo.

1 2 3 4 5

Mala Bueno

20. ¿Qué se necesita para mejorar este espacio público? *

Selecciona todas las opciones que correspondan.

- Iluminación pública
- Presencia de la policía
- Mantenimiento de las áreas verdes
- Bancas y áreas de descanso
- Juegos infantiles / Apartos para ejercitarse
- Reductores de velocidad
- Acceso peatonal para cruzar la vía del tren
- Vecino vigilante

Diseño urbano

Conectividad y acceso peatonal

21. ¿Qué tan segura consideras esta calle sin salida? *



Marca solo un óvalo.

1 2 3 4 5

Muy Muy segura

22. Considera que la infraestructura y el mantenimiento de este espacio público es: *

Marca solo un óvalo.

1 2 3 4 5

Mal Bueno

23. ¿Qué se necesita para mejorar este espacio público? *

Selecciona todas las opciones que correspondan.

- Iluminación pública
- Presencia de la policía
- Mantenimiento de las áreas verdes
- Bancas y áreas de descanso
- Juegos infantiles / Apartos para ejercitarse
- Reductores de velocidad
- Acceso peatonal para cruzar la vía del tren
- Vecino vigilante

Percepción de seguridad

Queremos conocer su opinión sobre el estado actual de la zona cercana a la vía del tren

24. ¿Qué tan segura consideras esta zona cercana a la vía del tren? *



Marca solo un óvalo.

1 2 3 4 5

Inse Seguro

25. Considera que la infraestructura y el mantenimiento de este espacio público es: *

Marca solo un óvalo.

1 2 3 4 5

Mal Bueno

26. ¿Qué se necesita para mejorar este espacio público? *

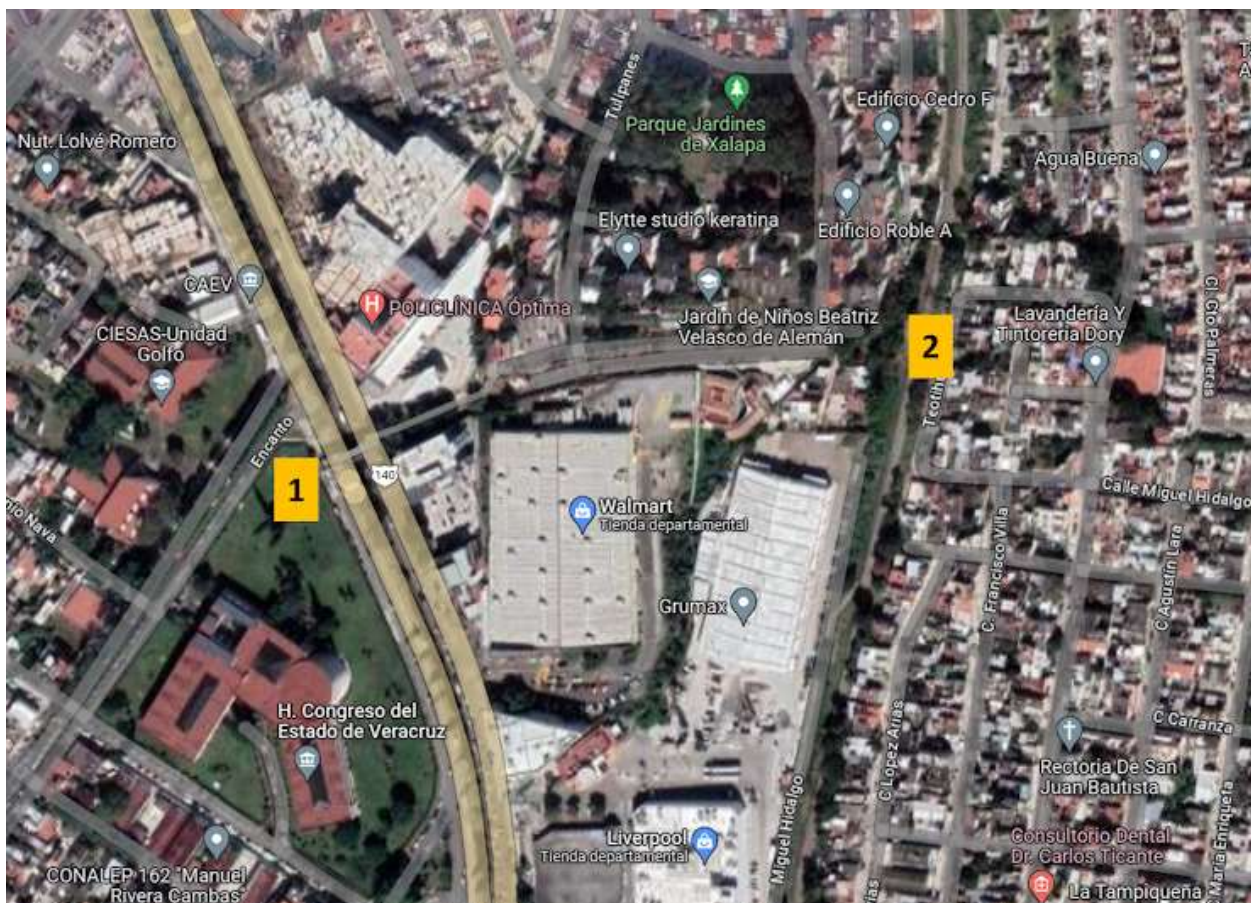
Selecciona todas las opciones que correspondan.

- Iluminación pública
- Provisión y mantenimiento de áreas verdes
- Bancas y áreas de descanso
- Infraestructura peatonal a lo largo de la vía del tren
- Acceso peatonal hacia la calle Encanto
- Acceso para personas con alguna discapacidad
- Presencia de la policía
- Programa Vecino vigilante

Diseño participativo

Queremos conocer tus propuestas para mejorar la zona.

27. ¿Consideras accesible la conexión del Congreso del Estado (1) a la vía del tren (2)? *



Marca solo un óvalo.

Si

No

28. En esta área tienes acceso a: *

Selecciona todas las opciones que correspondan.

- Calles iluminadas
- Cámaras
- Banquetas y áreas para caminar
- Rampas de acceso para personas con discapacidad
- Jardines o áreas de descanso
- Parques o áreas recreativas
- Espacio cultural o comunitario

29. ¿Consideras que un corredor peatonal, que conecte los puntos en la imagen, *
mejoraría la seguridad en el espacio público?

Marca solo un óvalo.

Sí

No

30. ¿Consideras que esta zona permite el libre acceso para personas con *
discapacidad?

Marca solo un óvalo.

Sí

No

31. Tienes alguna otra sugerencia para mejorar la seguridad en esta zona

Google no creó ni aprobó este contenido.

Google Formularios

RDM FOR STUDENTS - DATA MANAGEMENT PLAN (DMP)

NAME: ANABEL LANDA VÁZQUEZ

STUDENT NUMBER: 2918277

DEPARTMENT: UPM

Use this template to write your Research Data Management Plan (DMP). If you have any questions, feel free to reach out by sending an email to rdm-itc@utwente.nl or a.nikuze@utwente.nl.

Section 1 | Research Data

Please describe the types of data in the research.

1. Which primary data (files) will be used or generated in your research? Please list all of them in Table 1 below. *Primary data refers to data collected or generated for the first time by researchers themselves for their research. Think of interview data (recordings and transcripts), experimental and observation data, and the generated data such as analysis scripts, codes, models, etc.*

For each data file, specify

- the form of the data (Examples: Satellite or UaV data, imagery, Software, Code, Audio, Survey data, Interview, Maps, etc.)
- the file format (Examples: GeoJSON, .shp, .doc, csv, pdf, .xls, etc)
- Whether the data contains personal data. If yes, which personal data (personal data are data that can be used to identify the research participants, such as names, voices, photos, data of birth, address, locations, etc.)
- whether a third party claims the right to the data?

TABLE 1: OVERVIEW OF PRIMARY DATA

DATA TYPE/ FILE	DATA FORM	FILE FORMAT	CONTAINS PERSONAL DATA (Y/N). If yes, which?	IS THE RIGHT TO THE DATA CLAIMED BY A THIRD PARTY (Y/N). If yes, which third party?
Interview_Regidor	Word document with audio and transcript	Mp3 & .doc	Voice, name and position of interviewee	No
Interview_Urbanist	Word document with audio and transcript	.doc	Name and position of interviewee	No
Interview_Activist	Word document with audio and transcript	.doc	Name and position of interviewee	No
FGD_audio	Audio file	.mp3	Voices	No
FGD_mapping	Printed maps used during FGD	.pdf	No	No
FGD_statements	Printed photos of area for participants	.pdf	No	No
FGD_suggestions	Printed photos of area for participants	.pdf	No	No
FGD_photos	Photos of focus group development	.jpeg	Blurred faces	No
Flyer_survey	Flyer to promote survey link/QR code	.pdf	No	No
Survey_rational	Pdf document	.pdf	No	No
Survey_results	Excel sheets with results and graphs	.csv	No, only aggregated data including Age, gender and disability, if any.	No

2. Which secondary data will be collected for your research? Please list all of them in Table 2 below.

Secondary data means existing data shared by other researchers or organisations. Think of satellite images, existing GIS data, reusable codes or analysis scripts shared by others, etc.

For each data file, specify

- the form of the data (Examples: satellite or UaV data, Software, Codes, Audio, Survey data, etc.)
- the file format (Examples: GeoJSON, .shp, .doc, csv, pdf, .xls, etc)
- the source/ who is the owner of the data.
- Whether the data contains personal data. If yes, which personal data (personal data are data that can be used to identify the research participants, such as names, voices, photos, data of birth, address, locations, etc.)
- whether the data is open-access/ freely available.
If yes, under which open license? (Examples of licenses for openly accessible data are the [Creative Commons](#) and the for the codes/software: [MIT](#))

TABLE 2: OVERVIEW OF SECONDARY DATA

DATA TYPE/ FILE	DATA FORM	FILE FORMAT	OWNER	CONTAINS PERSONAL DATA (Y/N). If yes, which?	OPENLY ACCESSIBLE + License	RESTRICTED (What restrictions ?)
Photos_survey	Goole maps images of study area	.jpeg	Google	No	Yes	No
Municipal_boundary	Shape file of municipal boundary	.shp	INEGI	No	Yes	No
Land_use	Shape file of land use	.shp	Urban Observatory Universidad Veracruzana	No	Yes	No

Section 2 | Data Organizing and Documenting

This section is about ensuring that other researchers from the same research field can **understand, verify, redo** your research and **re-use** the data without asking you.

Please describe how the data (primary and secondary) will be organised and documented.

1. Describe the folders' structure that will be used to organise the data
2. Which file naming convention will you use?
3. How will you handle version control?
4. How will the data be documented?
 - Which standard metadata will be used?

- At a minimum, you should create a [readme file](#). Which essential information do you need to document in the readmefile? *(This should be all the information one would need to understand and be able to reuse the data).*

Name of main folder(s):	2918277_Thesis
Name of secondary and tertiary folders (if applicable):	Annexes
Version control strategy:	No version control table used
Metadata standards used:	NA
Readme file contents:	This file contains a step by step description of data collection. All files contain anonymize data. The readme file is in the annexes folder.

Section 3 | Data Storage, Security and Sharing

This section is about how data will be securely stored and shared.

Please describe how all collected and generated research data will be safely stored and protected to prevent unauthorised access, accidental disclosure and loss.

1. Where will you **store** your research data during your project? Please briefly justify your choice. *(Check the [storage decision tree](#) for an up-to-date overview of all secure storage solutions offered by UT)*
2. What is/are the other storage(s) is/ are used to keep copies of the data? If, any
3. Besides a secured storage solution, what other security measures do you plan to implement to ensure protection and prevent unauthorised access to your data? *(Examples of additional security measures include access control, anonymisation/pseudonymisation, [encryption](#), etc.). Please briefly justify your choice.*
4. Who can/ need/do you want to share the research data with during the execution of your project? *(This can be a supervisor or fellow researchers in your group)*

Data	Storage locations (Justify your choice)	Back-up location and frequency	Strategy to prevent unauthorized access to data during research	Strategy for pseudonymization or anonymization of data (if applicable)
Master files	UT One drive	Laptop weekly	Data shared only with supervisors by means of sharing an access link to Onedrive	Blurred photos, aggregated data.
Copy of the data	UT One drive	Laptop weekly	Only access with link	

Section 4 | Data Archived

This section concerns long-term data storage after completing the research/study.

Please describe the data that will be archived (preserved for the long term)

1. Which data will be selected for archiving? *(For example, you may choose not to archive a given data type because such data is available elsewhere).*

For each data type, specify:

- which file format will be used to ensure long-term accessibility and reusability? *(For this purpose, it is recommended to use [the preferred file formats](#))*
- whether the data can be made publicly available
- whether access to the data should be restricted and explain why.

DATA TYPE/ FILE	FILE FORMAT FOR PRESERVATION	CAN BE MADE PUBLICLY AVAILABLE	RESTRICTED ACCESS + REASON
2918277_Thesis	Zip and Onedrive link	Yes	No
Survey_results	csv	Yes	No, aggregated data

2. Which data will not be archived at all? Please explain why and how they can be accessed for research verification and validation.

All data use as support (i.e. national statistics, UN-Habitat gray literature), is publicly available in official websites and can be checked (see 2918277_readme.txt file)