

Analysis of Citizen Participation in Urban Planning of Comala, Colima, Mexico – A Secondary Publication

Amallinaly G. Cárdenas Aguilar¹, Peter Chung Alonso¹, Alicia Cuevas Muñiz², Dora Correa Fuentes¹, Ignacio Barajas Avalos^{1*}

¹National Technological Institute of Mexico, Mexico City, Mexico

²University of Colima, Colima 28040, Mexico

*Corresponding authors: Ignacio Barajas Avalos, ignacio.barajas@colima.tecnm.mx

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Abstract: The objective of this study was to determine the degree of citizen participation in urban planning processes in the municipality of Comala, Colima, Mexico to have a broader vision of the citizens and the environment in which they live. An instrument was designed specifically to perform this study and the instrument was validated by calculating Cronbach's Alpha. The results showed that citizens were highly involved in issues concerning their urban environment, and the main problems of the public spaces were also identified.

Keywords: Citizen participation; Planning; Urban development program

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1. Introduction

Planning cities without the citizens in mind will cause negative effects in terms of social, economic, and ecological aspects, which play an important role in the development of the city and implementation of the Municipal Urban Development Plans (MUDP). Integrating citizen participation in the study of urban sprawl can allow a better understanding of the social issues of a particular entity while addressing the needs of the surrounding environment. The participation of the population in urban planning is an act of democracy ^[1].

In the history of urban planning in Mexico, there has been a lack of governance on development plans. The creation of different programs that promote citizen participation arises from the interests of society in both private and public sectors, and vice versa ^[2].

The Secretariat of Agrarian, Territorial, and Urban Development (SEDATU) is a department established and included in the reform in 2013. It is prominently featured in the third paragraph of Article 27 of the Constitution, aiming to fully utilize the territory, and manage sustainability, urban settlements, and agrarian development. These actions are taken to ensure development and social peace ^[3].

Reducing multisectoral issues is one of the main objectives of the methodological guide issued by SEDATU, which provides tools for the development of a useful instrument for updating the MUDP. It allows the free selection of these tools by the internal authorities of each government headquarters ^[4].

Methodological guides and guidelines are documents issued by federal agencies that help establish the appropriate strategy for responsible entities to diagnose the needs of a specific urbanized area in order to address its weaknesses. The mentioned guidelines represent the simplified and most recent version recommended by SEDATU ^[5].

Countries such as Colombia and Chile have succeeded in developing methods of citizen participation like semi-structured interviews. These techniques promote simultaneous citizen planning initiatives and the development of appropriate urban planning for each locality ^[6].

Meanwhile, in Mexico, issues related to citizen participation have been overlooked in some localities. Problems regarding urban planning are often addressed through questionnaires and an understanding of the recreational activities of the locals. Integrating these tools with citizen participation could enhance strategies and the accuracy of information included in the MUDP ^[7].

Therefore, we created an instrument that can collect qualitative and quantitative information related to citizen participation. This instrument serves as a guide to improving strategies and the veracity of the information included in the MUDP. In the process of gathering and seeking information about citizen participation in urban development planning, it is important to understand the public's perception regarding aspects such as security, amenities, infrastructure, services, and accessibility. This allows for evaluating how citizens perceive these issues in comparison to the actual situation.

The creation of this tool is a collaborative effort by a team, and its development is a crucial step in crafting the MUDP for the municipality of Comala. This endeavor involves cooperation among working groups from the Honorable City Council of Comala, SEDATU, and the Postgraduate Division of the National Technological Institute of Mexico, Colima campus. The introduction of this instrument marks the first phase of an ongoing initiative to integrate citizen participation in decision-making processes within their community and, consequently, in urban planning ^[8].

In accordance with SEDATU guidelines and the estimated timelines set by the municipality for obtaining this information, it is proposed that the instrument be a survey administered to a sample of the communities with the highest population density in the municipality of Comala. The verification of the data obtained through the validation of the survey conducted in this article will be carried out in future lines of research.

The three centers of population with the highest demographic density were selected as the area of study. The center of population of Comala had a total of 1574 inhabitants, Cofradía de Suchitlán had 2021 inhabitants and, finally, Suchitlán had a total of 2714 inhabitants.

Comala is one of the ten municipalities of the state of Colima, Mexico. It is located in the north of the state, at coordinates 19° 18' and 19° 32' north latitude and between 103° 37' and 103° 57' west longitude ^[9]. The municipality of Comala is classified as one of the 132 Magical Towns of the Mexican Republic, as described by Mexico's Ministry of Tourism. Comala is made up of 118 communities ^[10].

Comala is a municipality with a rich cultural, architectural, and natural heritage, making the northern area of the municipality an excellent marketable product for real estate agents and, consequently, attracting buyers interested in exploiting the citizens' heritage irrationally. The disincorporation of these properties in the PMDU is a constant social issue faced by the authorities of the municipality, in addition to the social damages that this phenomenon triggers.

From a social point of view, urban planning with citizen participation should be carried out with a large

sample of the population. This is because by controlling this figure, it becomes possible to gauge the capacity of social groups from the various communities within the municipality of Comala to make decisions and commit to proper land use planning ^[1].

Disinformation and lack of citizen participation have been some of the main challenges in urban planning. To overcome this problem, it is important to establish a relationship between the citizens and their environment. In this way, different groups of people and their levels of vulnerability can be identified.

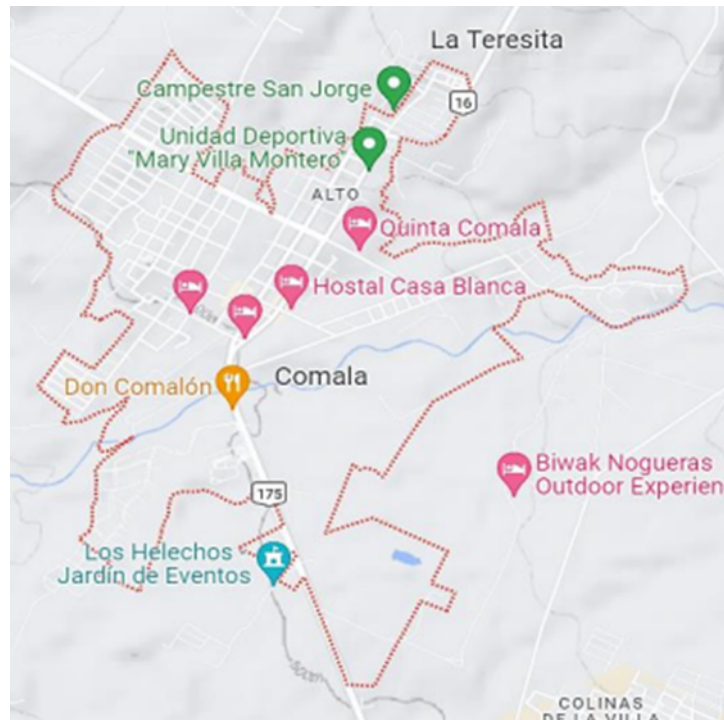


Figure 1. Location of the municipality of Comala, Colima, Mexico ^[10]

2. Methodology

The case study covers the social and legal issues that arise due to the lack of citizen participation in urban development planning. A structured methodology has been established for urban planning with citizen participation based on the public sector's (governmental) perspective as per the SEDATU guidelines. These guidelines include the selection of regulations and strategies for the inclusion of citizens in identifying deficient factors for proper urban planning ^[11].

While developing and reviewing documents related to citizen participation and tools for gathering information, we analyzed similar cases to tailor a tool that would assess the needs of individuals in the communities. This served as the basis for developing the MUDP for the magical town of Comala.

The needs of the population residing on the outskirts of the municipality across social, ecological, and economic domains were identified, in relation to the municipal center and its primary localities. Additionally, the official documentation recommended by SEDATU for the MUDP was analyzed. This aimed to select suitable indicators for the instrument that align with the specific needs of Comala municipality.

The MUDP was studied to understand the vulnerabilities of different groups of people so that urban problems could be identified through citizen participation.

The Mapping Cities Guide is the basis for the choice of the instrument, as it is a reference document suggested by SEDATU. This guide provides a broader perspective on the existing modalities of instrument

application for obtaining information. It outlines the methodology for developing a useful instrument and suggests the appropriate selection of tools for gathering information according to the needs of each city ^[12].

We referred to this document because it contains the survey instrument presented in this article. We found that the timelines for applying and developing the tool are appropriate for the municipality of Comala, from selecting the group of people to customizing the topics to be addressed, as well as considering the availability of the surveyed public.

For the selection of the sample in the urban setting, it was necessary to take into account the parameters established in the guide, which suggests that the surveyed groups comprise the immediate group in the study area, i.e., the centers of population in this case study: Comala, Cofradía, and Suchitlán ^[13].

The survey developed for the integration of citizen participation in the municipal development plan for Comala is based on the methodology suggested by SEDATU. Therefore, the details of the survey were structured based on the “Komunila Guide” ^[13].

A survey was considered an appropriate method of collecting information due to its quick and easy dissemination in the centers of the population. In addition, it can also be reused for studying other centers of population. It is inexpensive and can be done in different ways, which makes the collection of qualitative or quantitative information on a certain area easy. The results of this study can be analyzed and included in the urban planning of the municipality of Coma.

The survey was divided into three sections. The first section contained questions that were related to obtaining personal information about the respondent, which allowed us to understand the participants of the study area. The second section contained qualitative questions, which allowed us to learn about the perception of the participants towards the aesthetic qualities of their environment. Lastly, the quantitative section contained questions that helped identify citizen participation in the issues concerning the municipality of Comala.

The effectiveness and proper construction of the survey were evaluated prior to its implementation using Cronbach’s Alpha, which allowed us to gain a more accurate insight into the effectiveness of the items in the survey. To fully understand Cronbach’s Alpha formula, it is important to note that the coefficient provided by this tool is a statistical measure that quantifies the reliability or consistency of the items comprising a questionnaire. In other words, it assesses how well and to what extent the questions correlate with each other.

In this case, the items correspond to the variables listed in **Table 1**. The variable “K” represents the number of multiple-choice questions, excluding open-ended responses related to the respondent’s knowledge. The sums were calculated using Equation (1) suggested by Cronbach’s Alpha ^[14] and then the tabulated factors of the responses were added, replacing the values in the formula shown in Equation (1). It is worth noting that the minimum acceptable value obtained through this formula is 0.70, while the expected maximum value is 0.90. If parameters deviate from the mentioned ones, it could indicate inconsistency in the relationship between the items or redundancy and duplication in the counted items ^[15].

$$\alpha = \frac{K}{K - 1} \left(\frac{\sum_{i=1}^K \sigma_{Y_i}^2}{\sigma^2 X} \right) \quad (1)$$

Besides, it is important to mention that, in addition to the validation through Cronbach’s Alpha formula, the survey was applied as a pilot test to a representative sample of inhabitants of the municipality of Comala through Google Forms. The sample consisted of 36 participants, who responded from December 5, 2022, to March 26, 2023. Subsequently, the data were processed and calculated using the Cronbach’s Alpha equation. The result of this test yielded a reliability of 75% in the execution and effectiveness of the survey, as shown in **Table 1** of the results section.

The format of the survey questionnaire is presented in **Appendix 1**. The first part of the survey consists of questions that are not quantifiable. Therefore, these items were not included in the total number of items applied in the Cronbach's alpha formula.

3. Results

The data from the aforementioned instrument yielded different results for each item. The overall result of this test showed a reliability of more than 75% in terms of execution and effectiveness of the survey, as shown in **Table 1**. Besides there was adequate consistency among the items of the questionnaire, making it suitable for field applications, since it is within the acceptable range according to Cronbach's Alpha formula.

Table 1. Cronbach's Alpha calculations

Variables	Value
Number of questions, K	22
Sum of individual variances, S_i	20.7532224
Sum of total variances, S_t	73.11111111
Reliability coefficient, α	0.7502433032

The results of the survey were converted into graphs and charts. The results of the first question showed that most of the respondents were from Comala. Besides, the data of the second question showed that the people who frequent public spaces were mainly young adults, representing 71% of the respondents.

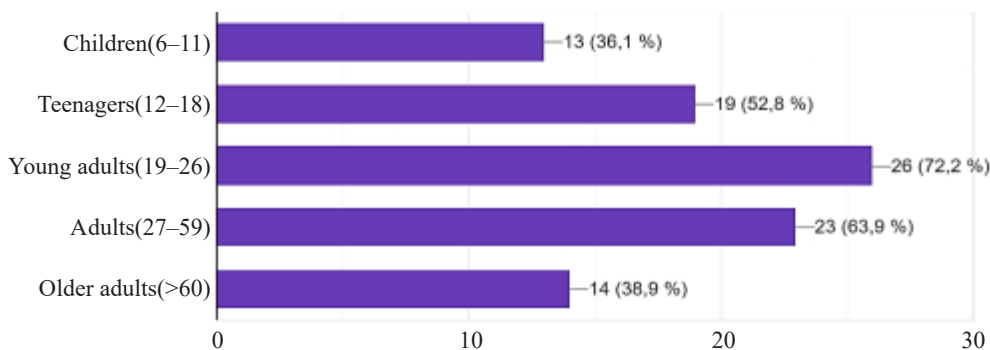


Figure 2. Results of Question 2 of the survey

Questions 3 and 4 were the last questions of the first section, which were open-ended, so their results varied. The answers to these questions showed that cleaning brigades were among the most popular community-based activities for this population.

Based on the answers to Question 6, the aspect that was of the greatest importance in the integral development of the community was infrastructure, with 58.3% of the respondents selecting it, followed by space maintenance with 41.7%, security with 41.7%, and safety with 41.7%, accessibility with 27.8% and, lastly, vegetation with 5.6%. Besides, based on the responses to Question 10, the three priority areas for improving the community are infrastructure at 80.6%, security at 63.9%, and accessibility and maintenance, both at 61.1%. As for Question 11, 82.9% of the population highlighted vegetation as the greatest virtue of their space.

In Question 12, the assessment of the current state of natural reserves showed a mix of responses, with 52.8% rating it as good and 33.3% as fair. Regarding the condition of neighborhoods, according to Question 13, there was a tie at 61.1% between infrastructure and security, followed by maintenance at 50%. Accessibility stood at 22.2%, and vegetation lagged at 8.3% (**Figure 3**).

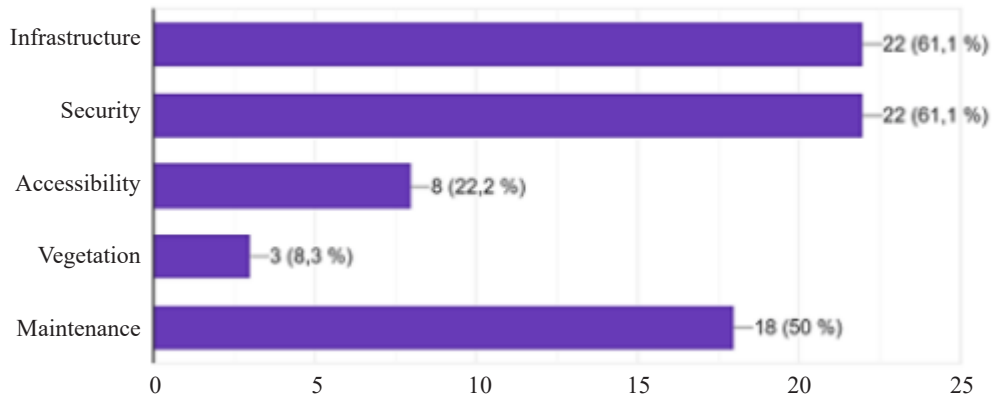


Figure 3. Results of Question 10 of the survey

Question 14, which was the last question in the qualitative section, addressed the issue of adequate infrastructure in public spaces for emergencies. Most of the respondents categorized it as fair and poor, with 71.4% of the population agreeing with this opinion.

Question 15 marked the beginning of the quantitative questions section. Question 15 reveals that 41.7% of the population currently participates in activities related to their community, with 25% participating very frequently. On the other hand, 33.3% of the population were less involved in those activities, mainly due to misinformation or lack of publicization.

For the result of Question 19, there were only two types of responses. 77.8% of the population considered promoting harmonious development in their community to be very important, while the remaining 22.2% considered it important.

The responses to Question 22 varied. 38.1% of respondents started participating in community-based activities one month ago. People who participated for a week, a year, and more than 2 years all accounted for 14.3% each.

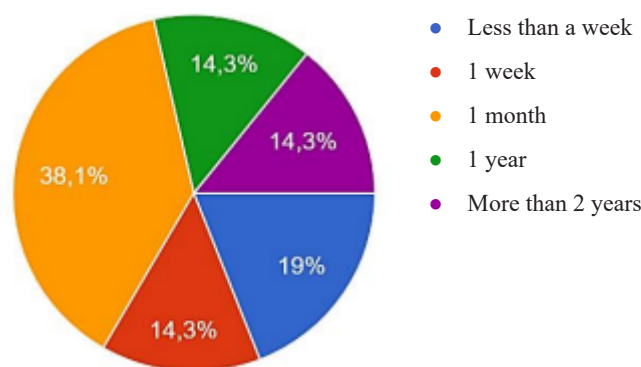


Figure 4. Graph of the results obtained in question fourteen of the survey

In Question 23, the results show that 85.1% of the respondents have noticed an increase in housing in the periphery of their community, so they are very interested in this phenomenon. Meanwhile, the remaining 14.8% of the population seems indifferent or not interested in this phenomenon.

For Question 26, 8.3% of the respondent indicated that their communities organize group activities very often, 38.9% responded “often,” 19.4% responded “sometimes,” 30.6% answered “rarely”, and 2.8% answered “never.”

Question 27 addressed the accessibility of the space, where 22.9% of the population considered it very good, 41.7% considered it good, 30.6% considered it to be fair and only 5.6% considered it to be bad.

Question 28 addressed the street lighting in public spaces. 85.7% of the population ranked it from good to fair. 8.6% of those surveyed considered it to be very good, while 5.7% considered it to be poor. Question 29 addressed the safety of the space. There was a tie in the responses “good” and “fair.” Meanwhile, 2.8% of the sample considered it to be very good and 5.7% considered it to be very poor.

Based on the responses to Question 30, more than half of the population, i.e. 57.1%, thought that the recreational areas were fair. 31.4% said it was good, followed by 5.7% who considered it to be very good. Lastly, there was a tie in the percentage of respondents that thought the recreational areas to be bad and very bad, both at 2.9%.

Question 31 required the respondents to rate the gathering points in their communities from 1–5. Half of the respondents rated their gathering areas with a 3. This indicates that the spaces are in fair condition.

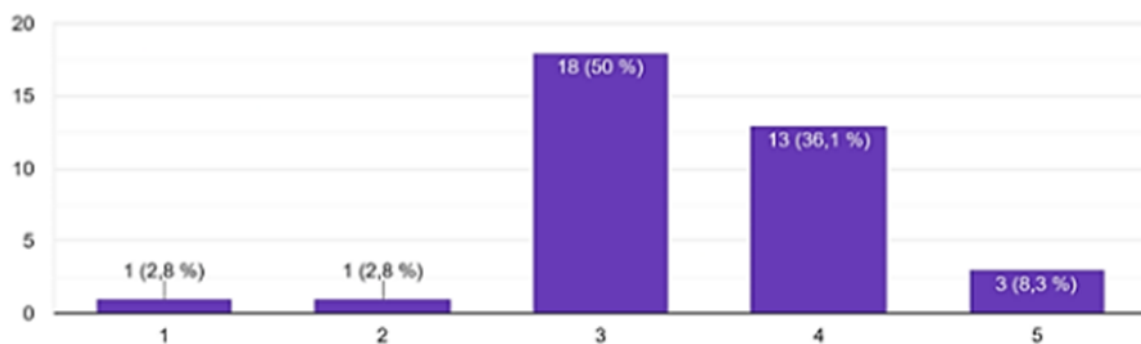


Figure 5. Results of Question 31 of the survey

Question 32 deals with the extent to which citizens’ opinions are taken into account by the authorities in charge, and a wide variety of results were obtained. The most noteworthy aspect of this topic is the contrast of the voters’ answers. 30.6% of respondents thought that their opinions were taken into account to a great extent, while 27.8% of respondents said that their opinions were not taken into account at all.

Question 33 referred to the perception of citizens regarding the decisions made by the municipal government in their urban environment. Specifically, 38.9% agreed quite a bit. However, 27.8% of voters felt somewhat disconnected from the decisions made, while 19.4% expressed uncertainty about whether their opinions were taken into account or not.

In Question 34, the effectiveness of information dissemination was addressed. Results showed that 16.7% found it highly efficient, 30% considered it fairly informative, 25% were unaware of the information, 25% had limited information, and 2.8% of the population had no idea about the situation at all. This suggests that deficient information dissemination was more apparent compared to adequate dissemination. In Question 35, respondents were asked about their perception of their neighborhood. The most common response was feeling quite vulnerable, representing 38.9% of the total sample. This was followed by 33.3% who were unsure how to define their experience of living in their neighborhood, 19.4% of the population indicating they felt somewhat vulnerable, and finally, 8.7% of the population reported feeling not vulnerable at all.

Question 36, the last quantitative question, was related to community safety. A majority, comprising just over half of the sampled population (58.3%), indicated feeling somewhat insecure in their surroundings.

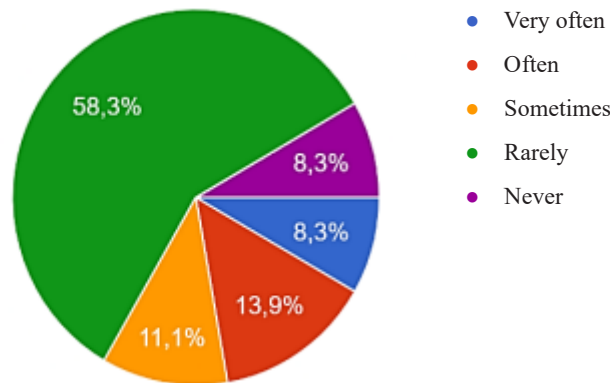


Figure 6. Pie chart of the results of Question 26

4. Conclusion

Based on the results of our survey on citizen participation, we can conclude that the majority of respondents were interested in participating in decision-making and fostering harmonious urban development in their community in the municipality of Comala. However, less than half of the sample participated regularly in group activities related to their community, practically every month, and fewer people felt that their opinions were taken into account. Nevertheless, they largely agreed with the government’s decisions for the benefit of their community. In other words, despite the low actual participation, the population approved of the municipality’s management. The responses reflecting the prevailing trend indicated that the priority areas for improvement in public spaces and urban settings in Comala were infrastructure and security, followed by space maintenance. The majority were in favor of supporting the comprehensive development of the community. Consequently, they believed that public spaces were not adequate for accommodating the population in case of an emergency while acknowledging urban vegetation as the greatest virtue of their environment. It was inferred that, although public spaces were aesthetically pleasing to residents, they were aware of the infrastructure deficiency, except for public lighting, which was deemed to be in good condition. Furthermore, most respondents had observed a significant increase in housing on the outskirts of the city; however, less than half perceived themselves as vulnerable, despite the high levels of insecurity.

Based on the aforementioned findings, valuable insights have been gathered to incorporate into the diagnostic process for the development of Comala’s Municipal Urban Development Program, with an emphasis on citizen involvement. It is recommended to complement the proposed survey with additional tools, such as community workshops, throughout the diagnostic and strategy formulation stages of urban and architectural development aimed at enhancing the municipality’s social progress.

Moreover, the survey yielded specific and valuable insights, thus accomplishing the intended objective of this research. We gained a clear understanding of the survey’s effectiveness, which was validated through statistical techniques and the Cronbach’s Alpha formula, with a reliability percentage exceeding 75%. The survey can be used in other population centers and municipalities across the state to compare results, refine its effectiveness, and enhance it based on identified areas for improvement. By replicating this process, we can contribute to designing programs and strategies aimed at promoting citizen participation and enhancing the quality of life in the municipalities of Colima.

Disclosure statement

The authors declare no conflict of interest.

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Appendix

Answer the following survey. 1 is the minimum and 5 is the maximum in questions involving the scale of 1 to 5.

Respondent information

1. What is the name of the community where you live?
2. Who visits these spaces?

Children	Teenagers	Young adults	Adults	Older adults
(6–11 years old)	(12–18 years old)	(12–26 years old)	(27–59 years old)	(> 60 years old)

3. Could you mention any activity promoted by the city council regarding citizen participation in which you have participated in the past?
4. Could you mention any decision-making activities for your community in which you have participated recently?

Qualitative questions

5. Why do you not participate in activities related to your community?

I participate I don't know I am not interested Others

6. In your opinion, what aspects of public spaces in your city would you improve?

Security Infrastructure Accessibility Vegetation Maintenance

7. What are usually the social gathering spots within your community?

Gardens Churches Sports centers None

8. What happens most in the places where people gather?

Public events Private events Acts of vandalism

9. In ascending order where 1 is the least important and 5 is the most important, what aspect do you think is the most vital in the integral development of your community?

Security	Infrastructure	Accessibility	Vegetation	Maintenance
()	()	()	()	()

10. From your perspective. Point out 3 options that your community needs to improve.

Security Infrastructure Accessibility Vegetation Maintenance

11. Indicate three characteristics that your community does have..

Security	Infrastructure	Accessibility	Vegetation	Maintenance
()	()	()	()	()

12. How do you consider the current state of green areas and nature reserves in your community?

Very good Good Fair Poor Very bad

13. In ascending order where 1 is the least important and 5, what aspects of the city’s neighborhoods need improvements?

Security	Infrastructure	Accessibility	Vegetation	Maintenance
()	()	()	()	()

14. Does the community have adequate infrastructure to house people in case of emergency?

Very good Good Fair Poor Very bad

Quantitative questions section

15. On a scale of 1 to 5, how interested are you to be in public/collective affairs?

1 2 3 4 5

16. On a scale of 1 to 5, how interested are you in participating in decision-making on urban issues that affect citizens of your community?

1 2 3 4 5

17. How much do you participate in associations or entities of any kind, whether cultural, neighborhood, sports, or political?

1 2 3 4 5

18. How often do you participate in activities related to your community that are organized by the municipality of Comala?

Very often Often Sometimes Rarely Never

19. Do you think it is important to promote harmonious development among the communities within the municipality of Comala?

Very important Important Neutral Not very important Not important

20. How much have you heard about activities aimed at people's participation in decision-making promoted by your municipality or government?

1 2 3 4 5

21. How much have you participated in activities that serve your community recently?

1 2 3 4 5

22. How long have you been involved in activities that serve your community?

Less than a week (1) One week (2) One month (3) One year (4) More than two years (5)

23. In your opinion, how much do you think that the housing areas in your community have increased over the years?

1 2 3 4 5

24. What is your position on population growth in your community?

I'm very interested I'm interested I'm neutral I'm a little interested I'm not interested

25. Do you consider the growth in the number of homes and inhabitants in your community to be good or bad?

Very good (1) Good (2) Neutral (3) Bad (4) Very bad (5)

26. How often do the members of your community gather for group activities?

Very often Often Sometimes Rarely Never

27. How accessible is this place to the public?

Very good Good Fair Poor Very bad

28. How is the public lighting in this area?

Very good Good Fair Poor Very bad

29. How is the security of this space?

Very good Good Fair Poor Very bad

30. How are the recreation areas in this space?

Very good Good Fair Poor Very bad

31. On a scale of 1–5, how would you rate your community’s meeting spaces?

1 2 3 4 5

32. Are the opinions of the citizens taken into account by your city council in making urban decisions?

Very much Quite a bit I don’t know A little Not at all

33. To what extent do you believe that your city council facilitates citizen participation in the decisions it makes?

Very much Quite a bit I don’t know A little Not at all

34. Do you currently believe that your municipality provides adequate information on how to participate in urban decisions that affect citizens?

Very much Quite a bit I don’t know A little Not at all

35. Do you consider the neighborhoods in your community to be vulnerable in terms of the urban context? That is, if these spaces are at a disadvantage compared to those with better services.

Very much Quite a bit I don’t know A little Not at all

36. How involved are you in neighborhood activities with that serve your community?

1 2 3 4 5

37. Is the community perceived as unsafe?

Very much Quite a bit I don’t know A little Not at all

Appendix 1. Survey questionnaire