

Public Space in the Metropolitan Area of Monterrey. Analyzing Parks: El Capitán, Clouthier, and La Silla

* ¹Prof. Dr. Sindy Melissa Godínez De León, ²BSc. Research Assistant Andrea Sofía Gámez López

¹ & ² School of Architecture and Habitat Science, Universidad de Monterrey, Nuevo León, México

E-mail ¹: sindy.godinez@udem.edu, E-mail ²: andrea.gamezl@udem.edu

Abstract

Urban parks have a significant impact on citizens' daily lives. Parks have become a visual attraction within the city, creating opportunities for cultural enrichment and promoting diversity in social activities. It is well known that cities worldwide have parks of different scales, with various urban equipment and functions. The present study was developed in Monterrey, México, where three different types of urban parks and their future projection were analyzed and compared. The article explores the sectors currently operating in these public spaces and which are best received by users. To this end, surveys were carried out, and direct users were asked about the frequency of use of the parks. This methodology allowed us to map the busiest places and make suggestions for the 2030 master plan of the municipalities. For the study, the parks selected were Río la Silla, Capitán, and Clouthier. The aim was to observe and document the effect that each of them has on the daily dynamics of Monterrey's public space.

Keywords: Parks; urban space; space in Monterrey; metropolitan area; urban equipment.

1. Introduction

Public spaces in Monterrey, Nuevo León's metropolitan area, present a multifaceted landscape with positive attributes and elements that need improvement. Three representative parks of the zone were analyzed in this studio. Most of the parks are in San Pedro Garza García, a public space design municipality pioneer. One positive side found in these examples is that these spaces serve as vital hubs for cultural exchange and community interaction. Monterrey's diverse population converges in parks, plazas, and promenades, fostering a rich tapestry of traditions and cultural activities. Before the COVID-19 pandemic, these areas often witnessed vibrant celebrations, festivals, and events, cultivating a sense of unity and sharing identity among the residents of the country's northeast region. Monterrey is a city very focused on buildings, so urban parks are seen by citizens as spaces for interaction, rest, and study. According to the Monterrey Government (2021-2024), the aim of the urban parks should be to promote a healthy environment to improve the recreation for citizens to protect and conserve artistic, historical, cultural, or natural beauty values that are significant for the population. However, there are a lot of aspects to improve the quality of public parks in the metropolitan area of Monterrey, which is why the team carried out this study to identify the necessary points that parks must have to function as public spaces that can generate community.

However, alongside these positives, public spaces in Monterrey also grapple with significant challenges. Safety concerns loom large in certain areas, deterring residents from fully utilizing these spaces. One hypothesis about the lack of use of public spaces after the pandemic was that inadequate infrastructure mars the usability and appeal of many public spaces. The lack of proper amenities such as seating, lighting, and sanitation facilities diminishes the overall experience for visitors, especially during evenings and weekends. This infrastructure deficiency exacerbates overcrowding and congestion issues, further hindering these spaces' enjoyment. Furthermore, the rapid pace of urbanization and sprawling development in Monterrey has encroached upon green spaces and public areas, leading to environmental degradation and loss of biodiversity (Amen & Nia, 2020; Aziz Amen, 2022)

. As concrete expands, greenery dwindles, impacting the city's ecological balance and resilience to climate change. Additionally, socioeconomic disparities often translate into unequal access to public spaces, with marginalized communities facing barriers such as transportation costs and safety concerns. This inequity perpetuates social exclusion and exacerbates existing divides within the metropolitan area. Despite these challenges, concerted efforts from various stakeholders are crucial in addressing the negative aspects and bolstering the positive attributes of public spaces in Monterrey. Through targeted interventions in safety infrastructure development and equitable access, the metropolitan area can nurture inclusive, vibrant, and sustainable public spaces that enrich the lives of all residents.

The present article seeks to give design guidelines based on feedback from direct users. To develop the design guidelines, the team first designs and creates a survey instrument where questions are asked of a sample population so that they can express their preferences and habits when visiting the three chosen parks. Questions were also raised if visitors do not use the chosen parks, so they expanded on why they use these public spaces and how they could improve them for their optimization.

In this study, three urban parks are analyzed: Río la Silla Park, located in Monterrey; Clouthier Park, located in Santa Catarina and San Pedro Garza García; and El Capitán Park, which is in San Pedro Garza García. The study aims to answer why citizens mostly visit large-scale urban parks. The study focuses on questions like: Is it due to its equipment, are there enough green areas, and do they have a good location? The study's main result was a series of guidelines for urban parks in Monterrey and other regions of Mexico.

2. Overview and Literature Review

Public parks provide crucial recreation resources that contribute to the well-being of city residents (Shanahan, D.F. 2015). That's why the study goes to inquire at which point the parks of the metropolitan area of Nuevo León. To do this research, the team first made a literature review, a phase highlighting Delgado's categorization. For this part, the team considers it essential to show all the types of parks. We use Delgado's categorization to identify the Clouthier, La Silla, and Capitán Parks types. In the second phase, we present the analysis methodology based on psychological urban planning, launching a survey to the direct users. The third and fourth parts of the research consider the results and discuss the main contributions of this paper. According to Delgado A. Santiago R. (2017), different types of parks are subcategorized into district parks, urban parks, commemorative parks, sports parks, regional parks, memorial parks, and playground parks.

The first type of park is the Regional Park. The regional parks are between the urban and rural areas of the cities, and they have an area of between 50 and 100 hectares. They are designated of community interest for their potential contribution to restoring natural habitats, ecosystems, and the biodiversity of wild fauna and flora. The second type of parks are the District parks, which are in central areas of the city or neighborhoods; their level of influence is between 20,000 to 30,000 m², and they have equipment for sports and physical exercise facilities for all ages, such as fields, basketball, and football. The difference between district parks and urban parks is the size. Urban parks are located mainly in the urban centers of the cities; they have an area of 10 hectares, and their level of influence is at the metropolitan level. These are an integral part of the city since they carry out leisure activities and interaction between people of all ages and contribute to each individual's cultural propagation and collective development.

Another type of park that Delgado mentions is the commemorative park. It is a memorial park usually located in strategic places in the city, and its function is to remember historical or civic events through milestones in focal areas. Another type of park is the sports park, one of the most common parks in neighborhoods. They carry out different sports activities. They also have a green area used for the same activities, and their level of influence depends on their size and their facilities. Memorial parks are mainly cemeteries, usually in busy urban areas. They have landscaped pedestrian and vehicular access areas that provide more outstanding service to citizens. Its level of influence is regional.

On a smaller scale and at the neighborhood level, playgrounds are within the limits of the city's urban center, and their size depends on their influence. They are intended for children of all ages and must have shapes and colors that encourage children's imagination and creativity to help in their psychomotor development. It is also important that the games have the necessary structure and security. Additionally, according to the Government of Monterrey (2021-2024), areas such as parks, gardens, or green areas must be enabled and forested, with the native species determined by the Secretariat, taking into account that there must be one tree for every sixty-four square meters of green area. Urban parks should promote a healthy environment and leisure and recreation for citizens, aiming to protect and conserve artistic, historical, cultural, or natural beauty values that are significant for the population.

In this study, three urban parks in the metropolitan area of Monterrey were analyzed: Rio la Silla Park, located in Monterrey; Clouthier Park, located in Santa Catarina and San Pedro Garza Garcia; and El Capitan Park, which is in San Pedro Garza Garcia. The study aims to answer why citizens mostly visit large-scale urban parks. Is it due to its equipment, green areas, and location? The main idea is to enlist a series of characteristics to help improve the actual conditions and operation of the parks through feedback collected and citizen participation.

2.1 Characteristics and guidelines in the treatment of parks

Jacobs, J. (2013) mentions in his book *Death and Life of Great American Cities* that the more cities mix the diversity of their uses and users in everyday life, the more successfully, informally, and economically people will appreciate and give life to well-located parks. They were returning grace to the neighborhoods and increasing citizen participation. The parks would be busier and more attractive to neighborhoods and the city if some activities, such as music or shows, were included; if the parks are tiny, they can serve other uses, such as recreating the view in the city, these are located where people can observe them, they must generate attention through their beauty and intensity. If a park does not sustain its use, a practical diversity of uses must be introduced to attract different users. Something that significantly enriches the park is the cultural aspects, such as entertainment and the introduction of sporting elements.

According to Alexandra, V.(2023), when designing an urban park, it is essential to evaluate functional aspects, such as:

- Recreation is a moment of incorporation for people of different ages to stimulate movement and social integration. Also, it is essential to provide games and recreational sports facilities for people with disabilities or older adults.
- Didactics and civic training are necessary since the urban park has a high cultural content. These can be signs on the types of trees and information tables on the natural characteristics of the place (vegetation, fauna, History, and culture).
- Sports are activities that should be encouraged from a recreational point of view for physical and mental health.
- Animals can coexist following the proposals made to citizens on reserved areas, and it is advisable to provide the necessary equipment, such as manure collection devices. Likewise, it comforts owners and their pets with shaded areas, large spaces, drinking water, etc.
- The rest area is a fundamental function of the urban park. It can be an area for individual or social reading and rest, relaxation, aggregation, and conversation. It is vital to identify shaded, peaceful zones as far away from high traffic volumes as possible.

-Green paths for pedestrians must be designed with the following requirements: they must be easily accessible for disabled people (2m minimum width); Have adequate lighting, provide proper access to neighboring streets, include rest areas with benches, have shaded areas (with trees, pergolas, gazebos, etc.).

-Paved surfaces must be designed and constructed to guarantee the pavement's stability over time; they must also be easily accessible for strollers and wheelchairs and allow spaces for people with different abilities.

3. Material and Methods

The first step for the study was to delimit the areas to analyze. For this phase, the team consulted the official maps of the urban parks and compared the official information with the site visit and Google Earth data.

Subsequently, field visits were made to the three parks to be analyzed.

- Clouthier Park, located in Av. Cuauhtémoc 626, Fama IV, 66116 Cdad. Santa Catarina, N.L.
- El Capitan Park, located in Av. Fuentes del Valle, Fuentes del Valle, 66220 San Pedro Garza García, N.L.
- Rio la Silla Park located in Villa Las Fuentes, 64890 Monterrey, N.L.

During the site visits, the team walked around the area and took pictures to create a photographic record.

Additionally, a 15-question survey was carried out and shared with the public of all genders from an age range of 10 years and older throughout the metropolitan area of Monterrey.

The questions of the survey were:

1. How old are you?
2. In which municipality do you live?
3. What is your gender?
4. Which of these parks have you visited? (the options were parks Clouthier, El Capitan, and la Silla)
5. Which of these parks have games for children? (the options were parks Clouthier, El Capitan and la Silla)
6. Which parks have sports areas (courts, tracks for walking or running)? (the options were parks Clouthier, El Capitan, and la Silla)
7. Which of these parks have benches in good condition? (the options were parks Clouthier, El Capitan, and la Silla)
8. Which of these parks have social areas (covered areas with tables, chairs, or grills)? (the options were parks Clouthier, El Capitan, and la Silla)
9. Which parks provide collective programs or activities open to the community during the day (dance, yoga, among others)? (the options were parks Clouthier, El Capitan, and la Silla)
10. Which parks provide collective programs or activities open to the community at night (movie night, art exhibitions, plays, concerts, among others)? (the options were parks Clouthier, El Capitan, and la Silla)
11. According to your perception, which of these parks has an appropriate amount of green area? (the options were parks Clouthier, El Capitan, and la Silla)
12. Which of these parks have bathrooms open to the public? (the options were parks Clouthier, El Capitan, and la Silla)
13. What parks do you visit, and how often?
14. Why do you prefer those parks?
15. What recommendations do you give for improving public spaces in your municipality?

The limitation of the methodology is that the municipalities of Monterrey and Santa Catarina do not have maps of the parks in their area. Therefore, the team conducted the survey and made plans based on digital maps and Google Earth. Likewise, the people who responded to the study seem influenced by the different contexts and political ideologies that prevail before an electoral process.

4. Results

The three parks have in common the morphological typology of linear parks. They are long and narrow; this type of park has a morphology based on topographic conditions or typically follows a natural or artificial feature like a river, road, or railway.

4.1 Clouthier Park

Clouthier Park is in two regions (San Pedro and Santa Catarina). During the visit, it was confirmed that the management of the municipality of San Pedro is more efficient in maintaining the park area that remains in its jurisdiction.

One of the benefits of linear parks in the city is the mitigation of heat, which introduces green spaces that help cool extensive areas. It is usually the use of native plantings, in the case of Monterrey, the use of desert vegetation.

Figure 1 shows the composition of Clouthier Park on the San Pedro side. The map was developed through different site visits, using Google Maps, and analyzing data from the Implang website in San Pedro Garza Garcia.

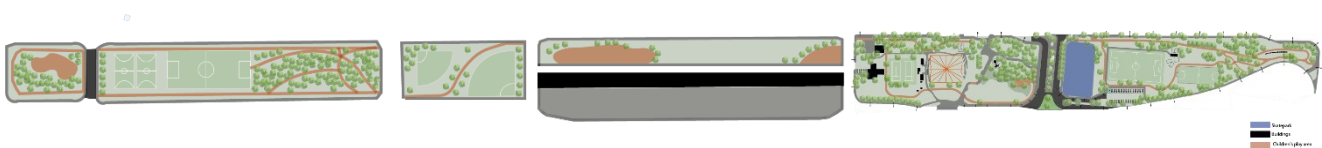


Figure 1. Park Clouthier Map

Clouthier Park, according to San Pedro.gob(2022):

Clouthier Park is a park for people of all ages. It has games, interactive fountains, skateboards, and bicycle tracks. It has dozens of trees, allowing people to have contact with nature, cultural and recreational activities, movies in the park, dance classes, reading, and meditation areas.



Figure 2. Photos of Park Clouthier. Pictures Gámez, A.S. (2024)

Clouthier Park has a wide variety of games for children in good condition, a running track, spaces with gym equipment, areas and fields for sports, covered spaces and equipment to wait for transportation, benches in good condition and very comfortable, signage and maps so that people can locate themselves within the park. It offers activities open to the public, both social and cultural, such as movie nights. It also has excellent maintenance of its facilities, bathrooms open to the public, and ample parking spaces.

4.2 El Capitan Park



El Capitan park according to San Pedro.Gob (2022):

It is a family park with 2,000 square meters of play areas for children, walkways and seating areas for adults, and an area for pets. It has a 1.3 km tartan jogging path, a 1.44 km cycle path, and informal play fields. Preserve the area's nature by planting more than 80 additional trees and rescuing and sanitation the existing green areas. It has a 3 thousand square meter lake, six bridges, five thematic plazas, service modules, and universal accessibility.

Figure 3. Park El Capitan Map

The park has benches and various equipment in good condition, with very comfortable designs where visitors can sit and lie down to rest and relax for a while. They have a large number of trash cans throughout the park. It has sports, cultural, and social activities open to the public, which they offer day and night. They have large green areas where visitors can play sports, and their wide variety of games for children are in excellent condition. They have three regions into which the park is divided, and its covered areas are where visitors can prepare food and coexist. It also has clean bathrooms in

two of its three regions and maps that help visitors locate the area they are in or want to go to. An interesting aspect is the great variety of vegetation and how it is constantly cared for, which generates comfort and a pleasing appearance for visitors.



Figure 4. Photos of Park El Capitan. Pictures Gámez, A.S. (2024)

4.3 La Silla Park

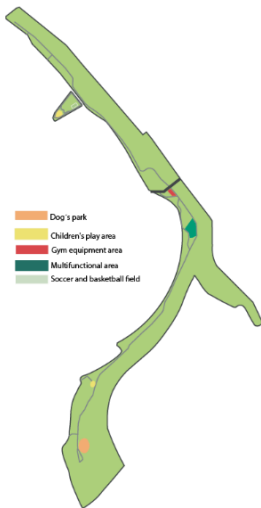


Figure 5. Park la Silla Map

La Silla Park has parking areas, green areas for sports, and cultural and social activities open to the public, mainly during the day, such as yoga. They have games for children, areas with gym equipment, soccer and basketball courts, a dog park, and a track for running or walking. It is also widely used by different groups of runners and cyclists to carry out their training. It is expected to see many people throughout the day, especially on weekends. There is a lighting problem in some areas due to the bridges that cross over some areas of the park, so it is seen as an issue of insecurity only in those areas. However, there is a great sense of community where young and older adults organize to go walking or training together, thus creating more security within the park.



Figure 6. Photos of Park la Sill. Pictures Gámez, A.S. (2024)

In Figure 6, we can observe the dog park, the gym equipment, and the games for children. Also, the court is the same one for basketball and soccer. Doing this, they optimize the green area and prioritize walking or running.

4.4. Results of the Survey

Women, rather than men, primarily answered the survey.

The most visited park by those who responded to the survey is Park la Silla, with 49.7%, then El Capitan, with 39.7%; Clouthier, with a percentage of 19%; and 32.7% of those surveyed who have not visited any of these three parks.

The three parks have games for children, with the responses being 44.7% for Park la Silla, 38.7% for Park el Capitan, 21% for ParK Clouthier, and the response of I don't know with 36.7%

The three parks have sports areas (courts, tracks for walking or running). The survey responses were 44.7% for Park la Silla, 38.7% for Park el Capitan, 23% for Park Clouthier, and the response of I don't know with 35.7%

The three parks have benches in good condition, and the responses were 38.9% for Park la Silla, 41.4% for Park el Capitan, 20% for Park Clouthier, and the response of I don't know 37.9%

The three parks have coexistence areas (covered areas with tables, chairs, or grills). The survey responses were 31.8% for Park la Silla, 33.8% for Park el Capitan, and 21% for Park Clouthier. However, the highest percentage was the response of I don't know with 47.5%.

The three parks provide programs or collective activities open to the community during the day (dancing and yoga, among others). The survey responses were 37.6% at La Silla Park, 34.5% at El Capitan Park, and 22% at Clouhtier Park. However, the highest percentage was the response of I don't know with 44.7%

The three parks provide programs or collective activities open to the community at night (movie night, art exhibitions, plays, and concerts, among others). The survey responses were 28.1% for Park la Silla, 32.7% for El Capitan Park, and 19% for Clouthier Park. However, the highest percentage was the response of I don't know with 52.3%

According to the perception of those who responded to the survey, La Silla park is the best known with enough green area, with a percentage of 49%, then El Capitan with 33.3%, Clouthier with 21%, and 31.8% the answer I don't know.

The three parks have bathrooms open to the public, with 37.4% in La Silla Park, 33.3% in El Capitan Park, 19% in Clouthier Park, and the highest percentage of 45.5% for the response I don't know.

The parks most visited by those who responded to the survey are Clouthier, La Silla, Bosques del Valle, Dragon, Chipinque, Estanzuela, Fundidora, Rufino Tamayo, San Jeronimo, Mississippi, and they also mentioned pet-friendly parks, those in the colonies. Where they live, there are linear parks in Calzada, Escobedo, and San Nicolas, and some also answered that they do not visit parks. Most do not do so frequently, more than two times a week.

After all, they are the closest to their homes, work, and school because they can use their bicycle, walk with their friends, and run. They are safe and clean, and they are visually attractive with a lot of green areas. They provide activities that are open to the public and use high-quality equipment. Parks have large areas, games for children, areas to play sports, and covered areas where you can live peacefully.

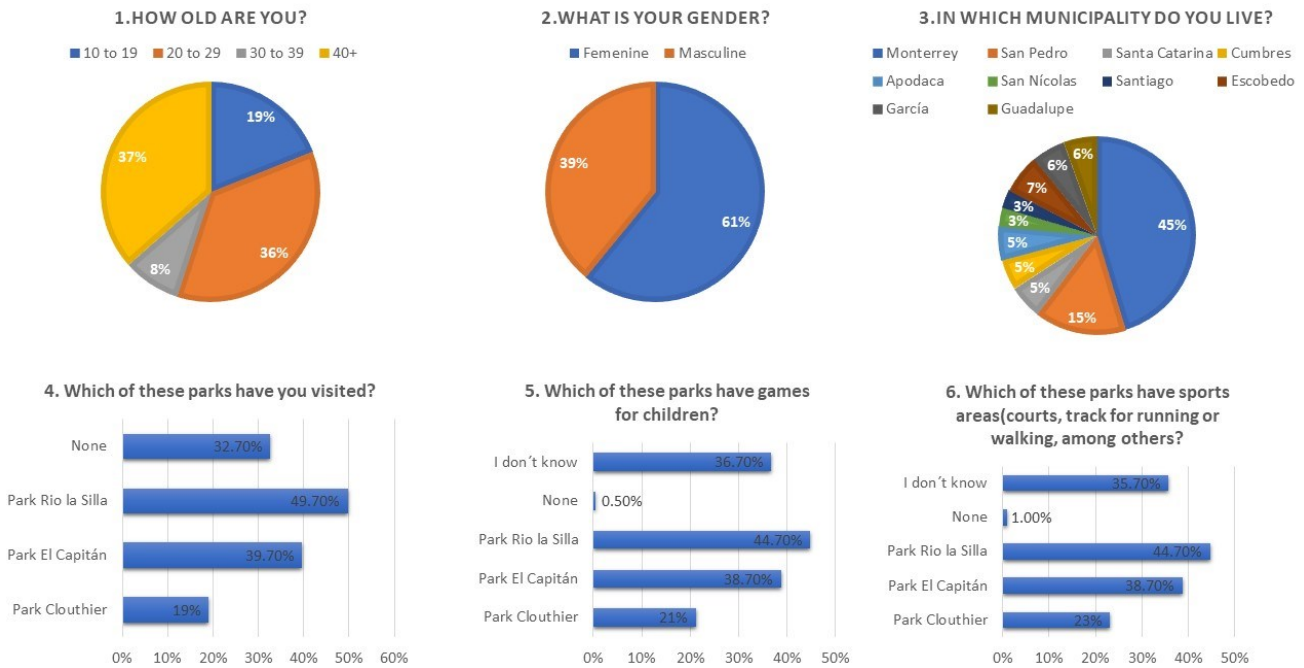


Figure 7.1 Graphs of results of the survey

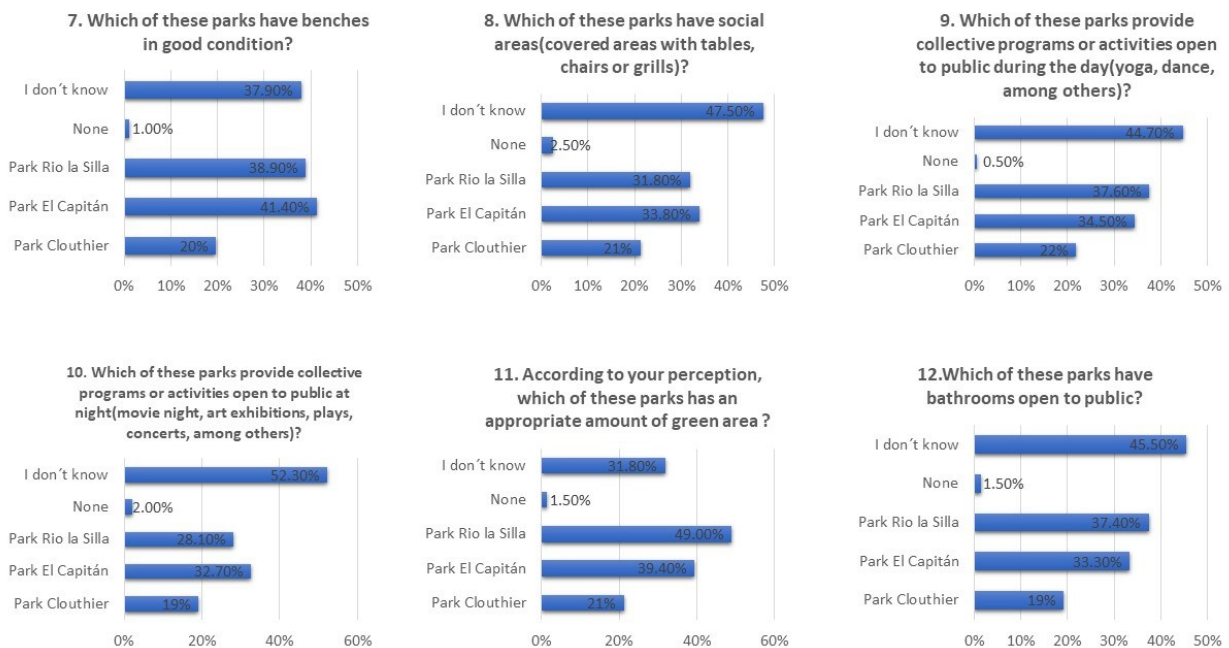


Figure 7.2 Graphs of results of the survey

The feedback gathered from survey respondents regarding their municipalities' public spaces suggests several recommendations. These include ensuring safety and maintenance, providing viewing areas, maintaining cleanliness, ensuring round-the-clock security, installing water fountains and public bathrooms, organizing sporting, social, and cultural events, offering ample parking, improving lighting, installing trash cans and benches in good condition, maintaining wide sidewalks and running tracks, designating pet-friendly areas, creating play areas for children, implementing clear signage and fumigation practices, actively engaging the community, considering the needs of people with disabilities, providing designated space for bicycle use, and enhancing advertising and informational efforts about the parks. One of the biggest problems was the poor dissemination of activities in the different parks.

4. Discussions

La Silla Park holds the highest recognition among Monterrey residents, particularly for those residing within the municipality. It is the closest option for residents among the three parks under analysis. The park is notably safe, attributed to the strong sense of community within its boundaries, and boasts well-maintained facilities of high quality.

El Capitan Park is renowned for its captivating aesthetics and high safety standards, ensured by continuous police patrols. Its diverse range of activities is a magnet, enticing individuals to choose it as their residential hub.

Clouthier Park is unique as it straddles Santa Catarina and San Pedro. However, a notable concern arises from perceptions of safety, particularly as Santa Catarina experiences higher levels of insecurity than Monterrey and San Pedro. Consequently, the park tends to be less frequented than La Silla and El Capitan. Nonetheless, it remains meticulously maintained with well-functioning equipment, offering a commendable spot for relaxation and daytime leisure activities.

It was possible to identify how San Pedro is the central municipality interested in its residents knowing and conserving their public spaces. There is also an economic issue, as well as interest and image. People see San Pedro as a role model of functional and eye-catching parks in the metropolitan area. It was evidenced that municipalities such as Santa Catarina or Monterrey are not very focused on creating safe, attractive public spaces that their residents know about because they do not provide much promotion or information to people. Additionally, it was observed in the survey results that most people look for safe, clean parks with good maintenance and good quality equipment within their areas. They want to have parks of this type near their homes. However, the majority do not comply with the standards that citizens set.

5. Conclusions

The Parks, La Silla, El Capitan, and Clouthier have the necessary aspects and functions for a park to work as a public space. According to the results and discussions of the research, these are the recommendations proposed for the municipalities of the metropolitan area of Monterrey regarding what every park should have:

Before establishing new parks, maintaining existing parks within the Monterrey metropolitan area municipalities should be prioritized. The aim is to give residents access to well-equipped, clean, and safe parks nearby, fostering opportunities for sports and cultural activities. Such initiatives not only benefit the local community but also contribute to the development of a strong sense of belonging within each neighborhood.

Parks should maintain their green spaces well and ensure that their facilities, such as playground equipment, are in good condition. They should provide areas designated for children's play, wide and well-maintained sidewalks for easy access, and functional ramps to accommodate individuals with mobility needs. Ample parking spaces and tables and benches in good repair should be available to facilitate community interaction and relaxation. Additionally, parks could offer spaces for local vendors to provide food services if desired and designated areas for cycling.

Implementing these recommendations can gradually increase the park's attendance, fostering connections among visitors and cultivating a sense of community. As interactions grow, the park naturally becomes a safer environment. Nonetheless, it's advisable to maintain a minimum level of security surveillance to enhance visitor comfort and encourage frequent park visits. Security varies and takes longer in some municipalities than in others due to economic issues; however, it is a very enriching investment since parks are public places where children learn and live together a lot and can disconnect from the technological world for a moment since these days children are more focused on technology than the outside world. Parks would be the first example for other public spaces to follow to generate a sense of community in municipalities.

Acknowledgments

Thanks to the University of Monterrey for promoting the research program for the Architecture School.

Conflict of Interests

The authors declare no conflict of interest.

References

- Alexandra, V. (2023). Diseño de un parque urbano: funciones, elementos y materiales. [Design of an urban park: functions, elements, and materials] - BiBLUS. BibLus. <https://goo.su/p1mq>
- Amen, M. A., & Nia, H. A. (2020). The effect of centrality values in urban gentrification development: A case study of erbil city. *Civil Engineering and Architecture*, 8(5), 916–928. <https://doi.org/10.13189/cea.2020.080519>
- Aziz Amen, M. (2022). The effects of buildings' physical characteristics on urban network centrality. *Ain Shams Engineering Journal*, 13(6), 101765. <https://doi.org/10.1016/j.asej.2022.101765>
- De Estadística y Geografía, I. N. (s. f.). Espacio y Datos de México. <https://www.inegi.org.mx/app/mapa/espacioydatos/?II=Delgado>
- Arias, Santiago Ramiro. (2017). Rediseño Arquitectónico- Urbanístico del Parque La Pradera en la ciudad de Loja, Aplicando Principios Lúdicos. [Architectural-Urban Redesign of La Pradera Park in the City of Loja, Applying Playful Principles] Facultad de Arquitectura. UIDE. Loja. 165p.
- Gobierno de Monterrey(2021-2024). *Reglamento de Protección Ambiental e Imagen Urbana de Monterrey*. [Regulations of Environmental Protection and Urban Image of Monterrey] <https://www.monterrey.gob.mx/pdf/reglamentos/>

- Jacobs, J., Muxí, Z., Valdivia, B. G., Delgado, M., Abad, Á., & Useros, A. (2013). *Muerte y vida de las grandes ciudades Americanas*. [The Death and Life of Big American Cities] <http://ci.nii.ac.jp/ncid/BB18946965>
- Shanahan, D.F., Lin, B.B., Gaston, K.J., Bush R. & Fuller, R.A. (2015) *What is the role of trees and remnant vegetation in attracting people to urban parks?* Journal Landscape Ecology. <https://doi.org/10.1007/s10980-014-0113-0>
- Superparques San Pedro. (2022). Parque Clouthier. <https://sanpedro.gob.mx/superparques-clouthier>
- Superparques San Pedro. (2022). Parque Capitán. <https://sanpedro.gob.mx/superparques-capitan>