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The Role of City Park as Public Spaces for Social and Recreational Activities: A Case Study of Cattleya Park in West Jakarta

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Abstract

Ruang Terbuka Hijau (RTH) or Green Open Space has an important role in maintaining the balance of urban ecosystems, improving environmental quality, and providing social interaction spaces for the community. The limited availability of Green Open Space in Jakarta, which only reaches 5.2% of the total area, is far below the national target of 30%, indicating the importance of Green Open Space as a vital element in creating a healthy and sustainable city. This condition also occurs in West Jakarta, which only has 0.45% of its area as green open space. One example of a developing public green space is Cattleya Park. This study aims to analyze the quality and quantity of facilities in Cattleya Park in supporting social and recreational activities, as well as to identify the challenges of its development as a sustainable public space. This research adopts a mixed-method design by integrating qualitative evidence from field observations and interviews with quantitative evidence gathered through Likert-scale questionnaires and a quantitative SWOT procedure. The results show that Cattleya Park has strengths in social, aesthetic, and recreational aspects, with a higher strength (S) score than weakness (W) score, namely 2.08:0.57 from the management side and 1.99:0.33 from the visitor side. External factors show that opportunities (O) are greater than threats (T), placing the park in quadrant I (growth/aggressive strategy). The main challenges include limited facilities, suboptimal drainage, and low community participation. With improved facilities, maintenance systems, and community involvement, Cattleya Park has the potential to become a sustainable and inclusive public space in West Jakarta.

Keywords: Public Facilities, Green Open Spaces, SWOT, Cattleya Park

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1. Introduction

As the capital city, DKI Jakarta has the highest level of activity and complexity of urban problems compared to other cities in Indonesia (Pratomo, 2021). A key urban challenge is the limited provision of green open space (RTH) (Suryani, 2019). Official figures for 2023 indicate that Jakarta's RTH coverage is approximately 5.2% of the provincial area, which remains substantially below the 30% national benchmark (Pemprov DKI Jakarta, 2023). This shortfall matters because Indonesia's Spatial Planning Law (Law No. 26/2007) requires cities to allocate

at least 30% of their territory to RTH, split into 20% public and 10% private components (UU No. 26 Tahun 2007).

A similar situation occurs in West Jakarta, which only has 319,809.234 m² of green space, or about 0.45% of the total area of Jakarta (Ratuandyas, 2023). Insufficient green space is associated with deteriorating air conditions and weakened ecological stability in urban areas (Harahap, 2022). Meanwhile, population growth and industrial activities in West Jakarta continue to increase, making the need for green space as the city's lungs and social space for the community even more urgent (Nurfadhil & Zain, 2024).

The Jakarta Provincial Government, through the Parks and Urban Forestry Agency, continues to strive to expand and organize green spaces, including through a program to build 21 new green spaces by 2025 with a budget of Rp. 87.6 billion (Pemprov DKI Jakarta, 2025). One example of successful green space development in West Jakarta is Cattleya Park, which now serves as a multifunctional public space for recreation, sports, and community social interaction (Hidayati, 2018). Despite their importance, parks often face persistent constraints in facility management and routine maintenance, which can undermine the overall quality and usability of green spaces (Juhadi, 2020). Thus, this research is important to understand how the management of green open spaces in urban areas, especially in Cattleya Park, West Jakarta, can support sustainable, healthy, and comfortable urban development for the community.

This study aims to (1) analyze the quality and quantity of facilities and infrastructure available in Cattleya Park to support social and recreational activities and (2) identify key challenges in developing Cattleya Park as a sustainable public space. In addition, the study compares perceptions from both management and visitors to provide a more comprehensive picture of strengths, weaknesses, opportunities, and threats. This dual-perspective mixed-methods assessment combined with quantitative SWOT is the main novelty of the study, because prior work often examines either user behavior or policy/availability without integrating both stakeholder views into a single strategic framework.

Urban green spaces are widely recognized for their ecological services and for supporting physical activity, stress reduction, and social cohesion (WHO, 2016; Jennings & Bamkole, 2019). Nevertheless, empirical evidence at the site scale—especially linking facility adequacy and management constraints to strategic development priorities—is still limited in many Indonesian cities. Therefore, this study positions Cattleya Park as a case study to bridge this gap by translating empirical findings into actionable SWOT-based strategies.

Based on the Minister of Home Affairs Instruction No. 14 of 1988, green open space is defined as an area in an urban area that is open for use without permanent buildings and serves to support environmental sustainability (Menteri Dalam Negeri Nomor 14 Tahun 1988). Meanwhile, Regulation of the Minister of Public Works No. 05/PRT/2008 explains that green open spaces in urban areas have ecological, social, cultural, and aesthetic functions that must be designed in accordance with the character of the area (Peraturan Menteri Pekerjaan Umum No. 05/PRT/2008). Conceptually, the Garden City idea remains influential as a reference for balancing built-up areas and green space in planning, and contemporary reviews emphasize its relevance for healthy and sustainable cities (Gatarić et al., 2019). In this context, green open space management encompasses aspects of planning, institutionalization, human resources, coordination, and funding (Hamrun & Prianto, 2017). Therefore, good green open space planning and management not only improves environmental quality but also strengthens the social and economic functions of the city (Dewi, 2020).

2. Method

Following a mixed-methods framework, this study merges qualitative and quantitative techniques to document both lived experiences and measurable indicators related to park utilization and

governance (Pane et al., 2021). The research design follows a convergent strategy in which qualitative findings from observation and interviews are integrated with quantitative questionnaire scores to triangulate interpretations. This integration enables the study to not only describe perceptions but also map them into a quantitative SWOT matrix for strategic recommendations

The qualitative method was carried out through direct observation in the field and in-depth interviews with park users, the community around the location, managers, and agencies related to park management (Ramadhan et. al., 2024). The aim was to explore perceptions, experiences, and social dynamics occurring in the park environment (Mardhotillah et. al., 2024).. Meanwhile, quantitative methods were carried out by distributing structured questionnaires and conducting numerical analysis using a Likert scale (Table 1) (Simamora, 2022) and quantitative SWOT analysis to assess the quality, quantity, and function of park facilities, as well as to identify the main challenges in developing them as sustainable public spaces (Yovana, 2024).

The dataset includes both primary and secondary sources. Primary information was obtained directly from participants through interviews and structured questionnaires, whereas secondary material was compiled from relevant literature, official publications, technical documentation, and prior studies aligned with the research theme.The data analysis process was carried out integratively by combining qualitative and quantitative findings to obtain a complete picture of the condition and function of the park (Wijaya et. al., 2025).

This study uses triangulation techniques, including data source, method, and analysis triangulation (Arianto, 2024). This approach ensures that the data obtained is consistent, reliable, and scientifically accountable. In addition, this study also applies research ethics, such as obtaining consent from respondents, maintaining the confidentiality of personal data, and avoiding bias in the data collection and analysis process (Yumesri et. al., 2024).

Table 1. Likert scale scoring used in the questionnaire. (Kusmaryono et al., 2022; Taherdoost, 2019).

No.	Score	Response Category	Description
1	5	Strongly Agree (SA)	Respondents fully support or have a very positive perception.
2	4	Agree (A)	Respondents support or have a positive perception.
3	3	Neutral (N)	Respondents are in the middle or undecided.
4	2	Disagree (D)	Respondents do not support negative perceptions.
5	1	Strongly Disagree (SD)	Respondents completely disagree or have a very negative perception.

Table 1 is the starting point of the quantitative pipeline because it defines how questionnaire answers are converted into numbers. Because each response option is mapped to a fixed numeric score (for example, 5 for strongly agree down to 1 for strongly disagree), the table enables the calculation of indicator-level mean scores.Those averages are then used in later tables (especially Table 2 and Table 3) to decide whether each indicator should be treated as a Strength, Weakness, Opportunity, or Threat.

Table 2. Summary of average indicator scores and SWOT categorization (management perspective) (Anugrah, 2023).

No.	Indicator	Question	Average Score	SWOT
1	Ecological	Vegetation conditions	3.2	W
2		Periodic maintenance	3.0	W
3	Social	Community activities	4.4	S

4		Social interaction	4.0	S
5	Aesthetics	The role of aesthetics	4.1	S
6		Visual appeal	4.3	S
7	Economy	Economic contribution	3.2	O
8		Merchant area	3.0	T
9		Ease of access	4.2	S
10		Directions	3.2	W

Table 2 takes the raw Likert results (scored using Table 1) and converts them into average scores per indicator from the management perspective. Its key role is to translate numeric averages into SWOT categories (S/W/O/T), so that management perceptions can be structured into strategic components. In other words, Table 2 is the classification step that prepares the management-side variables to be placed into the SWOT matrices (later summarized into Table 8 and Table 9).

Table 3. Assessment of facility adequacy and sustainability challenges at Cattleya Park (management perspective) (Anugrah, 2023).

Quality & Quantity of Facilities			
No	**Question**	**Score**	**SWOT**
1	Availability of facilities	3.3	W
2	Inspection & repair	3.6	S
3	Social support	3.9	S
4	Recreational support	3.4	W
5	Community enthusiasm	4.0	S
Challenges & Sustainability			
No	**Questions**	**Score**	**SWOT**
6	Community involvement	3.5	O
7	Citizen input	3.3	O
8	Damage to facilities	3.0	T
9	Park safety	3.7	S
10	Sustainability program	3.4	O

Table 3 complements Table 2 by focusing more specifically on facility adequacy and sustainability challenges, still from the management side. It uses the same scoring logic (Table 1) but applies it to practical components such as availability, inspection/repair, and recreational support—plus longer-term aspects like citizen input and sustainability programs. This table adds operational detail to the SWOT categorization: it helps explain why certain items become weaknesses or threats and provides concrete inputs that later justify strategy recommendations derived from the SWOT position.

Table 4. Quantitative SWOT (IFAS–EFAS) matrix structure and scoring example (Muhammad, 2024).

Internal factor assessment				
No.	**Internal Factors**	**Weight**	**Rating**	**Score**
1	Park used for community (S)	0.10	4.4	0.44
2	Aesthetics & visual appeal (S)	0.10	4.2	0.42
3	Easy access (S)	0.1	4.2	0.42
4	High public enthusiasm (S)	0.1	4.0	0.40
5	Social support facilities (S)	0.10	3.9	0.39
6	Vegetation is not very diverse (W)	0.10	3.2	0.32
7	Irregular garden maintenance (W)	0.1	3.0	0.30
8	Incomplete directional signs (W)	0.1	3.1	0.31

9	Recreational facilities are inadequate (W)	0.1	3.4	0.34
10	Facilities are incomplete (W)	0.10	3.3	0.33
	Total	1.00		3.67
	External factor assessment			
No.	**External Factors**	**Weight**	**Rating**	**Score**
1	Public support is growing (O)	0.15	3.5	0.525
2	Community input is increasing (O)	0.15	3.3	0.495
3	Sustainability programs are starting to emerge (O)	0.15	3.4	0.51
4	Local economic potential (O)	0.15	3.2	0.32
5	Unorganized merchant area (T)	0.15	3.0	0.45
6	Facilities are often damaged (T)	0.15	3.0	0.45
7	Lack of funds/management (T)	0.15	3.0	0.45
	Total	1.0		3.20

Table 4 provides the calculation template for conducting SWOT quantitatively using weights, ratings, and weighted scores. Its role is methodological: it shows how items classified as S/W/O/T (from Tables 2–3 and later tables) are turned into comparable scores. The scoring logic in Table 4 is then applied directly in Table 8–Table 9 (management) and Table 11–Table 12 (visitors) to generate totals and determine the park's strategic quadrant.

Table 5. Summary of open-ended responses on challenges, needs, and sustainability recommendations (Muhammad, 2024).

	Challenges in managing the garden			
No.	**Question**	**Frequency**	**SWOT**	**Score**
1	Lack of cleaning staff	6 Respondents	W	5
2	Facilities deteriorate quickly	4 Respondents	W	4
3	Lack of operational funds	3 Respondents	T	3
4	Low public awareness	5 Respondents	T	5
5	No community forum	2 Respondents	O	2
	Need to improve park functionality			
No.	**Question**	**Frequency**	**SWOT**	**Score**
1	Additional facilities	7 Respondents	O	5
2	Regular community programs	4 Respondents	O	4
3	Improved lighting & security	5 Respondents	S	4
4	Need for greening	3 Respondents	W	3
	Recommendations for sustainability			
No.	**Question**	**Frequency**	**SWOT**	**Score**
1	Involve the local community/residents	6 Respondents	O	5
2	A periodic maintenance system is needed	5 Respondents	W	4
3	Education for visitors	4 Respondents	O	4
4	Collaboration with schools	2 Respondents	O	2

Table 5 brings in qualitative support by summarizing open-ended responses (frequency of recurring themes). Its role is triangulation: it helps validate or challenge the quantitative results by showing whether respondents repeatedly mention issues that the Likert scoring identifies as weaknesses or threats. Practically, Table 5 strengthens the argument when the same issue appears in both (a) numeric weaknesses in Tables 2–3 and (b) frequent qualitative complaints, which makes the final discussion and implications more defensible.

Table 6. Scoring assessment of park user perceptions and weighting scheme (Muhammad, 2024).

Summary of Average Scores for Multiple Choice Questions (a-e)						
Internal factor assessment						
No.	**Internal Factor**	**Weight**	**Rating**	**Score**		
1	The park is fairly clean and well maintained	0.15	4	0.60		
2	Facilities support social activities	0.13	4	0.52		
3	The garden layout is visually appealing	0.10	3	0.30		
4	Low visitor participation	0.12	2	0.24		
5	Lack of educational information	0.10	2	0.20		
Total		**1.00**		**1.86**		
External factor assessment						
No.	**External Factors**	**Weight**	**Rating**	**Score**		
1	Economic potential through MSMEs	0.20	4	0.80		
2	Increased demand for green spaces among urban communities	0.20	4	0.80		
3	Security threats at night	0.10	2	0.20		
4	Increased potential for environmental education	0.15	3	0.45		
5	Lack of supervision by management	0.10	2	0.20		
Total				**2.45**		
Summary of Average Scores for Open-Ended Questions						
No.	**Question**	**SWOT**	**Frequency**	**Weight**	**Rating**	**Weight Score**
1	Sports and recreation facilities	S	20	0.15	4	0.60
2	Improving the quality of life of residents	O	18	0.14	4	0.56
3	Insufficient night lighting	W	12	0.10	2	0.20
4	Need environmental education boards	W	10	0.08	2	0.16
5	Expectations for a conservation community	O	14	0.12	3	0.36
6	Lack of supervision by officers	T	9	0.07	2	0.14
7	Potential of the park as an event center	O	11	0.09	3	0.27
8	Lack of toilets/facilities	W	10	0.08	2	0.16
9	Visual comfort aesthetics	S	13	0.10	3	0.30
Total				**1.00**		**2.75**

Table 6 shows how visitor perceptions are processed into a structured scoring scheme similar to the management side, including weights and ratings aligned with SWOT logic. It functions as the visitor-side counterpart that ensures the user data can be directly compared to management results using the same analytical logic (Table 4). In the analysis chain, Table 6 informs the construction of visitor-side internal and external factors that are later quantified in Table 11 and Table 12.

3. Results and Discussion

A. Results

1) Perspective of Cattleya Park Management

Cattleya Park has strengths in its social and aesthetic functions as a space for community interaction and environmental beauty, supported by routine maintenance programs and adequate facilities. However, the park still has weaknesses such as limited vegetation, difficult accessibility, and unclear directional signage. Overall, Cattleya Park has great potential as a functional and aesthetically pleasing public space, but improvements are needed in terms of accessibility, vegetation, sustainability, and local economic integration.

Table 7. Percentage of Respondent Ages in 2025.

No.	Respondent Age	Number of Respondents
1	15 – 19 years old	-
2.	20 – 25 years old	-
3.	26 – 35 years old	-
4.	36 – 50 years old	2
5.	51 – 70 years old	1
	Total Respondents	**3**

Source: Processed Data

Table 7 provides demographic context for the management respondent group. Its role is not direct scoring, but interpretation and transparency: it clarifies who the management-side respondents are and helps readers judge representativeness. This table supports the credibility of the management-side SWOT results in Tables 8 and 9 by documenting the respondent profile behind those scores.

Table 8. Internal Factors (Strengths & Weaknesses).

No	Indicator	Weight	Rating	Score
	Strengths (S) - Strengths			
1.	Routine maintenance program	0.10	4	0.40
2	Community interaction space	0.12	4	0.48
3.	Significant garden aesthetics	0.10	4	0.40
4.	Attractive for recreation & socializing	0.12	4	0.48
5.	High visitor enthusiasm	0.08	4	0.32
				2.08
	Weaknesses (W)			
6	Lack of vegetation diversity	0.06	2	0.12
7.	Facilities are rarely inspected	0.08	2	0.16
8.	Access to the park is difficult	0.12	1	0.12
9.	Directions are unclear	0.05	2	0.10
10.	Low local economic contribution	0.07	1	0.07
				0.57
Total Internal Factors		1.00	-	2.08 + 0.57 = **2.65**

Source: Processed Data

Based on the calculations in Table 8, which contains the internal factors of Taman Cattleya, a strength score of 2.08 and a weakness score of 0.57 were obtained. This shows that the strength factor has a more dominant value than the weakness factor. In addition to reviewing internal aspects, the analysis also considers external factors.

Table 9. External Factors (Opportunities & Threats).

No.	Indicator	Weight	Rating	Score
	Opportunities (O)			
1	Community activity potential	0.12	4	0.48
2.	Visual appeal & aesthetics	0.10	4	0.40
3.	Facilities supporting recreation	0.12	4	0.48
4.	Community input is quite frequent	0.08	3	0.24
5.	Low level of facility damage	0.08	3	0.24
				1.84
	Threats (T)			
6	Low community involvement in maintaining cleanliness	0.08	2	0.16
7.	Security is only moderately safe	0.07	2	0.14
8.	The sustainability program is not yet optimal	0.10	2	0.20
9.	No merchant area	0.07	1	0.07
10.	Weak external accessibility	0.08	1	0.08
				0.65
	Total External Factors	1.00		1.84 + 0.65 = **2.49**

Source: Processed Data

Table 9 shows that the SWOT analysis results indicate that the opportunity value has a score of 1.84, while the threat value is 0.65. The park's overall strategic standing can be inferred by contrasting internal conditions (S - W) with external conditions (O - T), allowing the study to summarize its situation within a single strategic position. From the comparison between the S–W and O–T components through SWOT analysis, the park's strategic position can be determined as shown in the following SWOT analysis diagram:

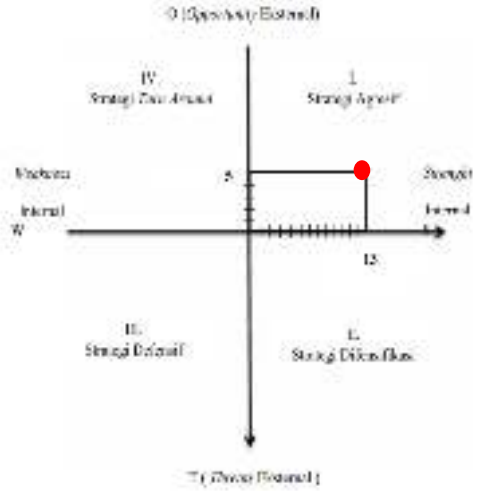

Figure 1. SWOT Analysis Diagram
Source: Processed Data

Based on the quantitative SWOT calculation results, the strength value is 2.08 and the weakness value is 0.57, so the difference (S-W) is 1.51. This positive value indicates that internal factors are dominated by strengths, so the analysis position is on the positive X-axis. Meanwhile, for external factors, the opportunity value is 1.84 and the threat value is 0.65, with a difference (O – T) of 1.19. This positive result places the analysis position on the positive Y axis. When mapped onto a SWOT diagram with the X-axis (internal) and Y-axis (external), the park's position is in Quadrant I (Growth/Aggressive).

2) Perspective of Cattleya Park Visitors

Based on a quantitative SWOT analysis of visitor responses, Cattleya Park's main strengths lie in its ecological and recreational functions, such as reducing air pollution and supporting sports activities. The attractive layout and adequate facilities also enhance visitor comfort in social and recreational activities. However, there are still weaknesses in the form of low social interaction, community participation in maintaining cleanliness, and a lack of environmental education, which can hinder the sustainability of the park.

Table 10. Percentage of Respondent Ages in 2025

No.	Respondent Age	Number of Respondents
1	15 – 19 years old	4
2.	20 – 25 years old	27
3.	26 – 35 years old	17
4.	36 – 50 years old	31
5.	51 – 70 years old	21
Total Age of Respondents		**100 People**

Source: Processed Data

Table 10 provides demographic context for visitor respondents. Like Table 7, its role is interpretive: it helps readers understand whether the visitor sample is dominated by particular age groups that might influence priorities (e.g., sports facilities vs. children's play areas). This table supports credibility for visitor-side SWOT conclusions generated later in Tables 11 and 12.

Table 11. Internal Factors (Strengths & Weaknesses)

No.	Indicator	Weight	Rating	Score
	Strengths (S) - Strengths			
1.	Parks help reduce air pollution (score 5)	00.10	2	0.40
2.	Natural green areas are sufficient (score 4)	0.08	3	0.24
3.	Facilities are sufficient and support activities (score 4)	0.08	3	0.24
4.	The physical quality of the facilities is good (score 4)	0.08	3	0.24
5.	Accessibility is easily accessible (score 4)	0.07	3	0.21
6.	Comfortable park for relaxation & recreation (score 4)	0.08	3	0.24
7.	Attractive visual layout (score 4)	0.07	3	0.21
8.	Sufficiently high sense of security (score 4)	0.07	3	0.21
				1.99
	Weaknesses (W) - Weaknesses			
9.	Social interaction among visitors is still low (score 3)	0.06	2	0.12
10.	's community participation in maintaining cleanliness is low (score 2)	0.09	1	0.09
11.	Limited environmental education (score 3)	0.06	2	0.12
				0.33
Total Internal Factors		1.00	-	1.99 + 0.33 = **2.32**

Source: Processed Data

Based on Table 11, which contains the results of internal factor analysis from the perspective of visitors to Cattleya Park, a strength score of 1.99 and a weakness score of 0.33 were obtained. These results indicate that strengths are more influential than weaknesses. In addition to internal factors, the study also reviewed external aspects as a comparison.

Table 12. External Factors (Opportunities & Threats)

No.	Indicator	Weight	Rating	Score
	Opportunities (O)			
1.	High support for sports and recreation facilities (score 5)	0.10	4	0.40
2.	Potential for social and community activities (score 4)	0.09	3	0.27
3.	Local economic contribution through MSMEs (score 4)	0.08	3	0.24
4	Opportunities for educational activities and environmental conservation (score 3-4)	0.08	3	0.24
				1.15
	Threats (T) – Threats			
5	Threats from low citizen participation (score 2)	0.09	1	0.09
6.	Threats from external factors (weather, urbanization, long-term security)	0.08	2	0.16
7.	Potential decline in social interaction if not managed (score 3)	0.08	2	0.16
				0.41
Total External Factors		1.00	-	1.15 + 0.41 = **1.56**

Source: Processed Data

Table 12 completes the visitor-side SWOT computation by quantifying opportunities and threats using weights, ratings, and weighted scores (consistent with Table 4). It yields the visitor-side external axis (O − T), which—together with Table 11—determines the visitor-side quadrant location. Finally, Tables 11–12 allow the study to compare whether management and visitors place the park in the same strategic quadrant and whether recommendations should prioritize internal improvements or external opportunity capture. Table 12 shows that the opportunity score of 1.15 is higher than the threat score of 0.41. Based on the S – W and O – T calculations in the SWOT analysis, the strategic position is illustrated in the following analysis diagram:

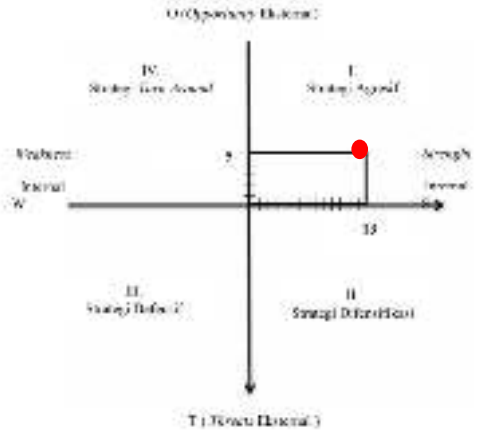

Figure 2. SWOT Analysis Diagram
Source: Processed Data

Based on the results of quantitative SWOT calculations, a Strength (S) value of 1.99 and a Weakness (W) value of 0.33 were obtained, resulting in a difference (S – W) of 1.66. This positive value indicates that the internal factors of the park are dominated by strengths, placing it on the positive X-axis. Furthermore, for external factors, the Opportunity (O) value is 1.15 and the Threats (T) value is 0.41, with a difference (O – T) of 0.74. Because the computed external difference is positive, it falls on the upper (positive) side of the Y-axis. When the internal (X-axis) and external (Y-axis) results are plotted on a SWOT coordinate map, the park is located in Quadrant I, which corresponds to a growth-oriented or aggressive strategic posture.

3) Discussion

1. Quality and Quantity of Park Facilities Available at Cattleya Park in Supporting Social and Recreational Activities

Based on the results of research on park visitors, the quality and quantity of facilities in Cattleya Park are perceived to be adequate to support social and recreational activities, although improvements are still needed to optimize them. This finding aligns with evidence that urban green spaces support stress alleviation and promote physical activity through opportunities for recreation and everyday exercise (WHO, 2016). Moreover, adequate facilities and an attractive layout can facilitate social interaction that cultivates social cohesion and connectedness among residents (Jennings & Bamkole, 2019; Wan et al., 2021). However, reported deficits in toilets, trash bins, children's play areas, and lighting suggest gaps between current provision and user expectations, and such physical and maintenance characteristics are known to shape use patterns and perceived benefits. These gaps indicate that improving basic amenities and safety infrastructure is a priority intervention to maximize the park's social–health co-benefits.

2. Key Challenges in Developing Cattleya Park as a Public Space in Maintaining the Park's Sustainability

Based on the results of research with the management, the main challenges in developing Cattleya Park as a sustainable public space lie in the aspects of environment and management. Waterlogging during rainy periods and the need for stronger security and routine maintenance reflect the broader challenge of integrating drainage and stormwater management within urban parks. Blue–green infrastructure approaches (e.g., infiltration areas, rain gardens, and retention features) are widely recommended to reduce pluvial flooding and enhance urban resilience (Liao et al., 2017; Sörensen, 2018). In addition, low community participation can undermine cleanliness and long-term sustainability, consistent with studies emphasizing the role of social cohesion and stewardship in the performance of public green spaces (Jennings & Bamkole, 2019). Accordingly, a combined strategy that upgrades green–blue drainage features, strengthens routine maintenance and security, and formalizes community engagement programs is essential for sustaining Cattleya Park.

4. Conclusion

Based on the results of research on the role of Cattleya Park as a public space for social and recreational activities, it can be concluded that this park has a significant function for the surrounding community. From the visitors' perspective, Cattleya Park is perceived as a green open space that not only serves as the lungs of the city, but also as a place for sports, recreation, and a means of relieving stress from daily routines. Activities such as jogging, gymnastics, playing basketball, and gathering with family are proof that this park is able to support physical and mental health, as well as strengthen social interaction among residents. However, visitors also highlight the limitations of facilities, particularly toilets, jogging tracks, trash bins, children's play areas, and the need for lighting and support such as public WiFi and community spaces. From the management perspective, the main challenges in developing the park lie in drainage issues that cause waterlogging during the rainy season, limited security systems, and the need for ongoing

maintenance and upkeep. The management emphasizes the importance of preserving the ecosystem and quality of the park through regular maintenance and conservation measures, ensuring that Cattleya Park can function sustainably as both a recreational space and an urban environmental conservation area. Overall, the findings suggest that targeted upgrades of basic amenities, drainage, and community-based stewardship are the most feasible pathways to strengthen sustainability and inclusivity.

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