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## Ranking what matters: Assessing urban park quality at taman Alun-Alun Regol, Bandung

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**Abstract** - Urban parks contribute to the physical, social, and psychological well-being of city residents, yet their quality is rarely examined through the combined lens of visitor perception and on-site physical condition. This study examines how five interrelated quality factors of public open space – comfort, security, service, basic facilities, and accessibility – relate to visitor comfort at Taman Alun-Alun Regol, a city park in Bandung, Indonesia. A quantitative descriptive-analytic design was used, with data collected through a Likert-scale questionnaire administered to park visitors and complemented by structured field observation and interviews with the park's community management body. Pearson correlation analysis was used to test the relationship between each quality factor and visitor comfort. The results show that all four factors are positively and significantly related to comfort, but with differing strength: security shows the strongest association, followed by service and accessibility, while basic facilities shows the weakest link despite receiving a comparatively favourable quality rating. Security, by contrast, received the lowest perceived-quality rating among the five factors, driven mainly by inadequate night-time lighting. Field observation further revealed discrepancies between visitor perception and actual physical conditions across several indicators. These findings suggest that visitor comfort in urban public open space is shaped more strongly by perceived safety than by facility completeness, with implications for how municipal park management should prioritise maintenance and improvement efforts

**Keywords:** public open space; perceived safety; visitor comfort; urban park; Bandung

### 1. Introduction

Public space consists of both outdoor and indoor components, with outdoor public space encompassing green open space, squares and plazas, pedestrian walkways, playgrounds, indoor atriums, and waterfronts (Carr et al., 1992). Public open space can further be understood through three defining characteristics: it is located outside buildings and accessible to anyone, it can be used for a wide range of activities, and it is inherently multifunctional (Rustam, 2004). As a point of convergence for the community, public space is also governed by prevailing social norms among its users, and the interplay between physical design and activity patterns ultimately shapes the quality of the user experience. Beyond its aesthetic contribution, an urban park delivers social, physical, economic, health, educational, and recreational benefits to the surrounding community (Andrahan et al., 2014).

Indonesian regulation reinforces the strategic position of green open space in urban planning. Government Regulation in Lieu of Law (Perpu) No. 2 of 2022 concerning Job Creation defines green open space as an elongated or clustered area that is predominantly open and planted with vegetation, whether growing naturally or deliberately cultivated. Regulation of the Minister of Agrarian Affairs and Spatial



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Planning/Head of the National Land Agency No. 14 of 2022 further specifies that green open space includes urban forests, city parks, sub-district parks, neighbourhood parks, and cemeteries, among other categories. Law No. 26 of 2007 on Spatial Planning mandates that green open space cover at least 30% of a city's total area, with public green open space required to make up a minimum of 20%. In line with this mandate, the Bandung City Government has continued to develop public open space to accommodate community gathering, recreation, exercise, and other public activities.

Taman Alun-Alun Regol illustrates this development trajectory. The site, situated along the Cikapundung River, was formerly vacant land used informally for dumping used goods and carried a negative stigma as an unsafe and unsettling area near the Soekarno Hatta–Buah Batu corridor, discouraging both pedestrians and motorists from passing through (Ispranoto, 2018). Transforming the site into a public park was intended to reverse this negative perception while restoring the ecological function of the river within the city's urban system. The park was developed with a budget of approximately IDR 25 billion, largely financed through the Bandung City regional budget (APBD) with additional support from the West Java River Basin Organization (BBWS) (Bandung City Data Portal, 2022). Although operated by the city government, a 2022 court ruling determined that the land is privately owned; the landowner nonetheless permitted continued public use on the condition that management be carried out by local residents, now represented by the Komunitas Pamacan (Ispranoto, 2018). Effective park governance of this kind requires attention to community participation and public interest, consistent with contemporary public-service perspectives on urban park management (Yu, 2021). Within regional and urban planning, green open space is understood not merely as vegetated area but as an element that shapes social interaction, mental health, and local economic activity, functioning as an urban “lung” that regulates microclimate, supplies oxygen, and supports recreation and social interaction (Ministry of Agrarian Affairs and Spatial Planning/BPN, 2022), as well as sociocultural activities such as sports and community events (Made & Mahendra, 2022).

According to Kota Bandung Dalam Angka (2022), Bandung has 759 parks distributed across 30 districts, of which 29 are located in Regol District, including Taman Alun-Alun Regol on Jalan Pasirluyu Selatan. Regol District has been designated a City Service Centre (Pusat Pelayanan Kota, PPK) under local regulation, underscoring its role as a hub of social, economic, and environmental activity, including the provision of public open space. Despite this strategic function and the scale of public investment, field observation in 2024 indicated a marked decline in the park's physical condition: litter accumulating due to inadequate waste facilities and irregular collection, combined with low visitor awareness of cleanliness, and vegetation showing signs of wilting or death from insufficient watering, pruning, and fertilising. These conditions appear to be reducing public interest in visiting the park and undermining its intended function as a clean, safe, and comfortable public space.

A comparable case offers a useful point of reference. Melanira and Rudianto (2023) evaluated Taman Tegalega, another green public open space in Bandung, across its sociocultural, economic, architectural, and ecological functions, reporting generally favourable but uneven visitor satisfaction – for instance, higher satisfaction with sociocultural function than with economic function. While that study establishes that Bandung's urban parks can perform multiple functions to varying degrees of visitor satisfaction, it does not examine how specific quality attributes of the space – such as comfort, security, service, basic facilities, and accessibility – relate to one another or jointly shape visitors' overall comfort. This represents a gap that the present study addresses: rather than assessing satisfaction with discrete park functions in isolation, this research quantitatively tests the strength and significance of the relationship between five interrelated quality factors and visitors perceived comfort at Taman Alun-Alun Regol, drawing on the stages of planning, implementation, utilisation, and control (Trancik, 1986)

Understanding these relationships is important given the broader role of quality public open space in supporting the physical and mental well-being of urban residents and in fostering positive social interaction. This research is therefore expected to help the Bandung City Government evaluate and improve the physical quality and management of Taman Alun-Alun Regol, to raise community awareness of the importance of maintaining park cleanliness and sustainability, and to contribute to the academic literature on green open space management and sustainable public space planning in dense urban settings.

Urban park quality has become an increasingly important research topic because it influences environmental sustainability, public health, social interaction, and residents' quality of life. Contemporary studies emphasize that park quality should be evaluated using multidimensional indicators that integrate environmental conditions, recreational facilities, ecological performance, accessibility, safety, aesthetics,



and user satisfaction rather than relying on a single physical attribute (Zhang et al., 2024; Qwaider et al., 2026).

Recent research has also highlighted the importance of incorporating social equity into urban park assessment by examining how different population groups access and benefit from parks of varying quality. Accessibility alone is no longer considered sufficient; instead, researchers advocate combining service coverage with qualitative characteristics to better understand equitable distribution of urban green spaces (Zhang et al., 2022; Rigolon et al., 2018; Wang et al., 2023; Guo et al., 2024; Zou et al., 2024).

Methodological developments have introduced increasingly sophisticated approaches for evaluating park quality. Multi-criteria decision-making techniques such as the Analytic Hierarchy Process (AHP), Fuzzy AHP, Best–Worst Method, TOPSIS, Post-Occupancy Evaluation (POE), and Importance–Performance Analysis have been widely applied to prioritize evaluation indicators and identify improvement strategies based on expert judgments and user perceptions (Srdjevic et al., 2022; Srdjevic et al., 2023; Cheng, 2025; Xiao et al., 2024; Qwaider et al., 2026).

The growing availability of digital data has further transformed park quality assessment through the use of online reviews, deep learning, spatial analysis, and large language models to capture public perceptions, landscape aesthetics, recreational experiences, and user satisfaction at a large scale. These data-driven approaches complement traditional field surveys by providing continuous and multidimensional insights into park performance and visitor experiences (Song et al., 2026; Mohamed & Kronenberg, 2025; Shi et al., 2025; Zou et al., 2024).

Evidence consistently demonstrates that higher-quality urban parks encourage more frequent use, enhance physical and psychological health, strengthen social value, and improve community well-being. Factors such as attractive landscapes, diverse recreational opportunities, environmental quality, and user-centred design significantly influence visitation patterns and residents' health outcomes, reinforcing the strategic importance of continuous park quality improvement in sustainable urban development (Bahriny & Bell, 2020; Pan et al., 2025; Kwon et al., 2025; González et al., 2023).

Based on this background, the research problem addressed in this study is the decline in the physical quality of Taman Alun-Alun Regol resulting from inadequate maintenance and management, which has reduced the optimal utilisation of the park and diminished its appeal as a clean, safe, and comfortable public space. This leads to the following research question: how are the quality factors of public open space related to visitor perception at Taman Alun-Alun Regol, Bandung? Accordingly, this study aims to examine the relationship between public open space quality factors and visitor perception at Taman Alun-Alun Regol, Bandung.

## 2. Method

### 2.1 Study Area

This research focuses on Taman Alun-Alun Regol, a 2-hectare (20,000 m<sup>2</sup>) public open space located on Jalan Pasirluyu Selatan, Pasirluyu Sub-district, Regol District, Bandung City, West Java, postal code 40254 (coordinates 6°56'42.4" S, 107°37'16.6" E). The park is bordered by Jalan Suryalaya to the north, Jalan Soekarno-Hatta to the south, Jalan Pasirluyu Selatan to the west, and Jalan Suryalaya IX to the east. Administratively, the area falls within Sub-Planning Zone (SWP) IV.D, covering 486.34 hectares under Bandung Mayor Regulation No. 29 of 2024 on the Detailed Spatial Plan of Bandung City. The study examines the relationship between public open space quality factors and visitor perception, viewed from the physical and social dimensions of the park as a public space.

### 2.2 Data Collection

This study employed a quantitative approach grounded in the positivist paradigm, used to examine a defined population or sample and to test established hypotheses through the statistical analysis of numerical data (Sugiyono, 2013). The research design was descriptive-analytic, aimed at describing the condition of Taman Alun-Alun Regol – including the quality of public open space service and visitor comfort – while quantitatively analysing the relationship among the quality factors under study. Primary data were obtained through field observation, questionnaire survey, and interviews.

Observation. Direct field observation was conducted using an observation checklist to record the existing physical condition of the park, supported by photographic and video documentation, and reported systematically in the general overview section. Observation covered five aspects: (1) physical comfort, including the availability of shelter, comfortable seating, and adequate natural lighting; (2) security, including



the presence of CCTV, security personnel, evacuation routes, safety signage, and night-time lighting; (3) service, including the clarity of information boards, the presence and responsiveness of staff, cleaning frequency, and waste management; (4) facilities, including public toilets, waste bins, sports amenities, children's play areas, and the maintenance of public facilities; and (5) accessibility, including pedestrian pathway conditions, access for visitors and persons with disabilities, and availability of public transportation to the park.

**Questionnaire.** A closed-ended questionnaire using a 1–5 Likert scale (Dillman et al., 2014) was distributed to measure visitor demographic characteristics and perceptions of public open space quality and comfort. The questionnaire measured five main variables, each with defined indicators and sub-indicators: (1) Comfort – physical comfort (availability of shelter and comfortable seating), physical environmental condition (adequate natural lighting, cool temperature), psychological privacy and relaxation (a sense of calm, an atmosphere conducive to rest), and social comfort (a sense of safety from disturbance, comfortable social interaction), drawing on Carr et al. (1992, in Carmona & Tiesdell, 2007); (2) Security – level of risk (reports of criminal incidents, presence of CCTV), perceived sense of safety (night-time lighting, presence of security personnel), and security facilities (evacuation routes, safety signage), drawing on Whyte (1980); (3) Service – information service (condition of information boards, responsiveness of information staff), cleanliness service (frequency of cleaning, routine and even waste management), and security service (response speed of security personnel, incident-reporting mechanisms), drawing on Bitner (1992); (4) Basic facilities – facility completeness (public toilets, waste bins), facility quality (sanitation condition, maintenance of seating and other public amenities), and facility variety (sports amenities, children's play areas), drawing on Carmona (2010); and (5) Accessibility – availability of transportation (public transportation, pedestrian pathways), ease of internal access (condition of footpaths, accessibility for persons with disabilities), and access information (clarity of directional signage, disability accessibility), drawing on Farida (2013).

Respondents were selected using non-probability purposive sampling, restricted to individuals aged 15 years or older who had visited Taman Alun-Alun Regol within the preceding 6–12 months or who were visiting the park at the time of the survey. Because the total population of park visitors was unknown, the sample size was calculated using the Lemeshow formula for populations of unknown size:  $n = (Z^2 \cdot P \cdot (1 - P)) / d^2$ , where  $Z = 1.96$  (95% confidence level),  $P = 0.5$  (assumed population proportion, unknown), and  $d = 0.1$  (10% margin of error). This yielded  $n = (1.96^2 \times 0.5 \times 0.5) / 0.1^2 = 0.9604 / 0.01 = 96.04$ , rounded up to 96 and further rounded to 100 respondents for data collection. Questionnaires were distributed on both weekdays and weekends in and around the park.

**Interviews.** Open, unstructured interviews were conducted with the park's managing body, the Komunitas Pamacan, which is currently responsible for the park's overall management. Closed, structured interviews were conducted with park management to obtain information on the level of service available at Taman Alun-Alun Regol, complementing visitor-based data in addressing the study's objectives regarding visitor characteristics, quality factors, and their relationship to visitor perception. Secondary data were collected through literature review rather than direct survey of relevant institutions, drawing on books, scientific journals, prior theses, and official planning documents, including academic publications, statistical data from Statistics Indonesia (BPS), and publicly accessible documents from the Bandung City Government.

### 2.3 Data Analysis

Questionnaire responses were analysed using frequency distribution to calculate the Respondent Achievement Level (Tingkat Capaian Responden, TCR) for each indicator and variable, expressed as a percentage and classified into qualitative categories ("Very Good," "Good," "Fair," "Poor"). The relationship between each of the four quality factors – security, service, basic facilities, and accessibility – and the comfort variable was tested using Pearson product-moment correlation analysis, with statistical significance evaluated at  $p < .01$ . The strength of each correlation coefficient was interpreted according to Guilford's classification of correlation strength. Field observation data were used to corroborate and contextualise the quantitative findings for each variable.

## 3. Results and Discussion

### 3.1 Results

#### 3.1.1 Visitor Characteristics



A questionnaire was distributed to 100 visitors of Taman Alun-Alun Regol to obtain the demographic profile of respondents, covering age, gender, and occupation.

Table 1 presents the age distribution of respondents. The largest share fell within the 15–25 year age group (42 respondents), followed by 36–45 years (23 respondents), 46–55 years (18 respondents), 26–35 years (11 respondents), and 56–65 years (6 respondents).

**Table 1. Age Group of Respondents**

| Age Group (Years) | n   |
|-------------------|-----|
| 15 – 25           | 42  |
| 26 – 35           | 11  |
| 36 – 45           | 23  |
| 46 – 55           | 18  |
| 56 – 65           | 6   |
| Total             | 100 |

Table 2 presents the gender distribution: 51 male and 49 female respondents.

**Table 2. Gender of Respondents**

| Gender | n   |
|--------|-----|
| Male   | 51  |
| Female | 49  |
| Total  | 100 |

Table 3 presents the occupational background of respondents. University students formed the largest group (26 respondents), followed by private-sector employees (18 respondents), unemployed individuals (14 respondents), students/pupils (12 respondents), other occupations (10 respondents), entrepreneurs/business owners (8 respondents), casual labourers (6 respondents), self-employed individuals (3 respondents), and civil servants/military/police, teachers, and health workers (1 respondent each).

**Table 3. Occupation of Respondents**

| Occupation                                | n   |
|-------------------------------------------|-----|
| University student                        | 26  |
| Private-sector employee                   | 18  |
| Unemployed                                | 14  |
| Student / pupil                           | 12  |
| Other                                     | 10  |
| Entrepreneur / business owner (wirausaha) | 8   |
| Casual labourer / freelance               | 6   |
| Self-employed (wiraswasta)                | 3   |
| Civil servant / military / police         | 1   |
| Teacher                                   | 1   |
| Health worker                             | 1   |
| Total                                     | 100 |

### 3.1.2 Perceived Quality of Public Open Space

Visitor perceptions of the five public open space quality dimensions – comfort, security, service, basic facilities, and accessibility – were measured using a 1–5 Likert-scale questionnaire and expressed as the



Respondent Achievement Level (TCR). Table 4 summarises the TCR score and qualitative category for each indicator and dimension.

**Table 4. Respondent Achievement Level (TCR) by Quality Dimension and Indicator**

| Dimension        | Indicator                                                                             | TCR (%)      | Category    |
|------------------|---------------------------------------------------------------------------------------|--------------|-------------|
| Comfort          | Shade-tree coolness                                                                   | 86.6         | Very Good   |
|                  | Shelter availability                                                                  | 86.4         | Very Good   |
|                  | Seating availability                                                                  | 85.8         | Very Good   |
|                  | Suitability for resting/relaxing                                                      | 84.4         | Very Good   |
|                  | Comfortable social interaction                                                        | 62.2         | Fair        |
|                  | <b>Mean (Comfort)</b>                                                                 | <b>81.08</b> | <b>Good</b> |
| Security         | Security personnel / CCTV                                                             | 79.4         | Good        |
|                  | Night-time lighting                                                                   | 48.4         | Poor        |
|                  | <b>Mean (Security)</b>                                                                | <b>63.9</b>  | <b>Fair</b> |
| Service          | Information signage clarity                                                           | 71.0         | Good        |
|                  | Staff responsiveness                                                                  | 69.6         | Good        |
|                  | <b>Mean (Service)</b>                                                                 | <b>70.3</b>  | <b>Good</b> |
| Basic Facilities | Public toilets                                                                        | 72.6         | Good        |
|                  | Waste bins                                                                            | 64.0         | Fair        |
|                  | Sports facilities                                                                     | 68.8         | Good        |
|                  | General facilities (parking, lighting, play area, disability access, pedestrian path) | 80.0         | Good        |
|                  | <b>Mean (Basic Facilities)</b>                                                        | <b>71.35</b> | <b>Good</b> |
| Accessibility    | Public transportation access                                                          | 84.2         | Good        |
|                  | Directional signage                                                                   | 73.6         | Good        |
|                  | Ease of locating the park                                                             | 65.8         | Fair        |
|                  | Pedestrian pathway comfort                                                            | 60.6         | Fair        |
|                  | <b>Mean (Accessibility)</b>                                                           | <b>71.05</b> | <b>Good</b> |

Comfort obtained the highest mean TCR among the five dimensions (81.08%, “Good”). Within this dimension, the coolness of the park atmosphere due to shade trees (86.6%), the availability of shelter (86.4%), and the availability of seating (85.8%) were each rated “Very Good,” as was the park’s suitability for resting or relaxing (84.4%). Comfort for social interaction was rated lowest within this dimension (62.2%, “Fair”).

Security obtained the lowest mean TCR among the five dimensions (63.9%, “Fair”). Night-time lighting was rated “Poor” (48.4%), while the presence of security personnel and CCTV was rated “Good” (79.4%).

Service obtained a mean TCR of 70.3% (“Good”). The clarity of information signage was rated 71.0% and the responsiveness of information staff 69.6%, both “Good.”

Basic facilities obtained a mean TCR of 71.35% (“Good”). Public toilets were rated 72.6% (“Good”), sports facilities 68.8% (“Good”), general facilities (parking, seating, lighting, cleaning and security staff, children’s play areas, disability access, and pedestrian paths) 80.0% (“Good”), while waste bins were rated lowest within this dimension (64.0%, “Fair”).

Accessibility obtained a mean TCR of 71.05% (“Good”). Access by public transportation was rated highest within this dimension (84.2%, “Good”), directional signage 73.6% (“Good”), while ease of locating the park (65.8%) and pedestrian pathway comfort (60.6%) were both rated “Fair.”

### 3.1.3 Relationship Between Quality Factors and Visitor Comfort



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Pearson product-moment correlation analysis was conducted to test the relationship between each of the four quality factors (security, service, basic facilities, and accessibility) and visitor comfort (Table 5). All four coefficients were positive and statistically significant at  $p < .01$ .

**Table 5. Pearson Correlation Between Quality Factors and Visitor Comfort**

| Quality Factor   | r     | p     | Relationship Strength (Guilford) |
|------------------|-------|-------|----------------------------------|
| Security         | 0.554 | 0.001 | Moderate                         |
| Service          | 0.407 | 0.001 | Moderate                         |
| Accessibility    | 0.389 | 0.001 | Low–Moderate                     |
| Basic Facilities | 0.282 | 0.004 | Low                              |

Source: Pearson correlation results of SPSS (27) Output 2025

Security showed the strongest correlation with comfort ( $r = 0.554$ ,  $p = 0.001$ ), followed by service ( $r = 0.407$ ,  $p = 0.001$ ) and accessibility ( $r = 0.389$ ,  $p = 0.001$ ), while basic facilities showed the weakest, though still significant, correlation ( $r = 0.282$ ,  $p = 0.004$ ). Following Guilford's classification, the security–comfort and service–comfort relationships fall in the moderate category, the accessibility–comfort relationship falls at the boundary between the low and moderate categories, and the basic facilities–comfort relationship falls in the low category.

### 3.2 Discussion

The demographic profile of respondents is consistent with patterns reported in the public-space literature. The dominance of the 15–25 year age group is in line with Gehl's (2011) observation that younger age groups tend to use public open space more intensively for recreation, socialising, and leisure, while the comparatively small share of visitors aged 56–65 years may be related to physical comfort and mobility considerations among older visitors (Whyte, 1980). The near-even gender distribution reflects Whyte's (1980) emphasis on inclusive public space design that supports equitable access regardless of gender. The predominance of university students and pupils among respondents, together with the presence of private-sector employees, entrepreneurs, and unemployed individuals, corresponds with Farida's (2013) argument that occupation shapes available leisure time and, consequently, patterns of park use across socio-economic groups; the park's proximity to several campuses in the vicinity plausibly reinforces its appeal to student visitors.

Among all the relationships tested, the one between security and comfort ( $r = 0.554$ ) stood out the most. What makes this interesting is that security was simultaneously the lowest-rated dimension overall (63.9%, "Fair"). Looking back at the field notes helps explain this contradiction. Several parts of the park went dark once the sun set, simply because the lamps were not working. There were CCTV cameras and a community-safety banner at a few key spots, but the guard post itself looked neglected; it was only staffed when residents organised their own night patrols. In other words, the strongest statistical relationship in this study coincides with the weakest-rated dimension, and the most plausible explanation is the lighting problem. This lines up with Whyte's (1980) argument that a space cannot really be called comfortable unless people also feel safe in it.

The service–comfort relationship ( $r = 0.407$ ) similarly points to the practical value of information provision and staff responsiveness (Bitner, 1992) in shaping visitor comfort. Field observation, however, revealed a discrepancy between the questionnaire ratings and actual conditions: although respondents rated information signage (71.0%) and staff responsiveness (69.6%) as "Good," observation found several information boards damaged or faded, and no dedicated information staff on-site – general cleaning or security personnel occasionally assisted visitors instead. This gap indicates that visitors' comfort judgements concerning service may be shaped as much by indirect cues, such as overall tidiness and the presence of any staff on the grounds, as by direct interaction with dedicated information personnel.

The comparatively weak basic facilities–comfort relationship ( $r = 0.282$ ) is consistent with the view that facility completeness contributes to comfort (Carmona, 2010) but is not, on its own, the primary determinant of how comfortable visitors feel. Field observation found that toilets, although rated "Good" (72.6%), had not been fully tidied following recent renovation; waste bins, limited to two units with irregular collection, were often full and surrounded by scattered litter (64.0%, "Fair"); and the children's playground and pool were found deteriorated, with a rusted swing chain and a stagnant pool caused by a missing water



pump, despite the adjacent “rainbow bridge” landmark remaining well maintained and popular for photographs. Because these deficiencies are localised to specific amenities rather than pervasive across the whole park, their statistical association with overall comfort is comparatively modest, unlike security-related deficiencies such as poor lighting, which affect the perceived usability of the entire space after dark.

The accessibility–comfort relationship ( $r = 0.389$ ), positioned between the low and moderate categories, indicates that ease of reaching the park has a real but comparatively modest bearing on comfort. Observation confirmed that the park is strategically located near major arterial roads and served by several angkot (public minivan) routes, consistent with the high TCR for public-transportation access (84.2%); however, no dedicated bus or angkot stop was found near the park, so passengers boarded and alighted directly at the roadside – a condition that may be less critical to in-park comfort than to the initial decision to visit. Pedestrian pathways, rated lowest within this dimension (60.6%, “Fair”), were found to lack guiding blocks or ramps in several sections, and directional signage along the paths was reported damaged or missing, limiting their inclusiveness for visitors with disabilities. Because accessibility primarily influences the ease of arriving at the park rather than the experience once inside it, its comparatively modest correlation with comfort is consistent with its practical role.

Taken together, these findings extend the multidimensional view of comfort proposed by Carr et al. (1992) and Carmona (2010), while adding an important qualification: the strength of each factor’s association with comfort is not proportional to its perceived quality score. Basic facilities received among the highest TCR yet showed the weakest correlation with comfort, whereas security received the lowest TCR yet showed the strongest correlation. This pattern suggests that visitors do not judge an urban park’s comfort primarily by how complete its amenities are, but by how safe they feel using it – particularly after dark. This observation resonates with the broader literature on perceived safety and environmental design (Whyte, 1980) and suggests that night-time lighting and active surveillance deserve priority in park management, ahead of incremental additions to physical amenities that are already rated favourably.

In relation to Melanira and Rudianto’s (2023) study of Taman Tegalega, which reported generally favourable but uneven visitor satisfaction across sociocultural, economic, architectural, and ecological functions, the present findings extend this line of inquiry by disaggregating park quality into specific, testable factors and identifying which of them most strongly predicts visitor comfort. Whereas Melanira and Rudianto’s (2023) demonstrate that Bandung’s urban parks can fulfil multiple functions to varying degrees of satisfaction, the present study clarifies that, at Taman Alun-Alun Regol, security – rather than facility completeness – is the dimension most closely tied to how comfortable visitors feel, a distinction with direct implications for how limited maintenance resources should be allocated across Bandung’s park network.

Across all five dimensions, a recurring pattern emerged between the questionnaire-based TCR scores and the field observation findings: perceived quality, as reported by visitors, was consistently more favourable than the physical conditions documented on-site. Toilets rated “Good” contained unremoved renovation debris; information services rated “Good” lacked any dedicated staff; and facilities rated “Good” included a damaged playground and an unusable children’s pool. This perception–observation gap indicates that visitor-satisfaction surveys of public open space, if conducted in isolation, may understate the extent of physical deterioration and should be interpreted alongside direct field observation – a methodological implication relevant to future assessments of urban park quality in similarly resource-constrained municipal settings.

#### 4. Conclusion

This study examined the relationship between five public open space quality factors – comfort, security, service, basic facilities, and accessibility – and visitor comfort at Taman Alun-Alun Regol, Bandung, drawing on a visitor questionnaire, field observation, and interviews with the park’s community management body. Overall, visitor perception of the park’s quality was favourable across most dimensions, and all four tested factors showed a positive, statistically significant relationship with visitor comfort. Security showed the strongest relationship with comfort, followed by service and accessibility, while basic facilities showed the weakest, though still significant, relationship. Notably, security also received the lowest perceived-quality rating among the five dimensions, driven principally by inadequate night-time lighting, while basic facilities – the dimension least strongly related to comfort – received a comparatively favourable rating despite documented deficiencies in waste management and playground maintenance. Field observation further



revealed a consistent gap between favourable visitor perceptions and the actual physical condition of several facilities and services, indicating that perception-based assessments alone may understate the park's maintenance needs.

These findings indicate that visitor comfort in this urban park setting is shaped more strongly by perceived safety than by the completeness of physical amenities. For park management, this suggests that improving night-time lighting and reactivating routine security patrols should be prioritised alongside – rather than after – the addition or repair of physical facilities, complemented by more regular waste collection, playground repair, and improvements to pedestrian pathways to better accommodate visitors with disabilities. These recommendations are directed principally at the Bandung City Government and the park's community management body, the Komunitas Pamacan, as the parties responsible for the park's day-to-day upkeep.

This study has several limitations. The use of non-probability purposive sampling limits the statistical generalisability of the findings beyond the surveyed population of Taman Alun-Alun Regol visitors. The research was conducted at a single park within a specific urban context, which constrains the extent to which the findings can be generalised to other public open spaces in Bandung or elsewhere. The cross-sectional design captures visitor perception and park condition at a single point in time and cannot establish causal direction between quality factors and comfort. In addition, reliance on self-reported Likert-scale responses, even when triangulated with field observation, may still be subject to social-desirability or expectation-related bias, as reflected in the perception–observation gaps identified in the discussion.

Future research could extend this study through comparative analysis across multiple urban parks in Bandung or other Indonesian cities to test whether the security–comfort relationship observed here holds more broadly. Longitudinal designs that track visitor comfort before and after specific interventions – such as improved night-time lighting or reactivated security patrols – would help establish causal relationships and evaluate the practical impact of targeted management improvements. Future studies could also explicitly incorporate Crime Prevention Through Environmental Design (CPTED) principles to examine which specific design interventions most effectively enhance perceived safety, and could give closer attention to disability-inclusive accessibility, an aspect that remained comparatively underdeveloped at the site studied here.

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