

Research Article

Effects of Physical Elements of an Urban Park on Visitor Interest: The Case of Bustanussalatin Park, Banda Aceh

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Abstract

This study investigates the influence of visitors' perceptions of urban park physical elements on Visitor Interest at Bustanussalatin Park, Banda Aceh. The research model comprises Architectural Elements, Landscape Elements, Supporting Infrastructure, and Accessibility as exogenous variables, with Visitor Interest specified as the endogenous variable. Data were collected through a questionnaire survey administered to 200 respondents selected using purposive sampling. The analysis was performed using Partial Least Squares Structural Equation Modeling (SEM-PLS). The results indicate that the measurement model satisfies established validity and reliability criteria. Within the structural model, Architectural Elements and Supporting Infrastructure demonstrate positive and statistically significant effects on Visitor Interest, whereas Landscape Elements and Accessibility do not exhibit significant influences. These findings suggest that visitors are more responsive to the quality of physical features and facilities that directly affect comfort and activities within the park environment. The coefficient of determination ($R^2 = 0.224$) further implies that Visitor Interest is also shaped by factors beyond those incorporated in the model. This study underscores the importance of prioritizing improvements in architectural features and supporting infrastructure as key strategies in urban park management and development.

Keywords: Accessibility; Architectural Elements; Landscape Elements; Supporting Infrastructure; Visitor Interest.

Introduction

The success of urban parks in attracting visitors can be influenced by multiple factors, including the quality of physical park elements such as landscape features, architectural components, supporting infrastructure, and accessibility. Within the discourse of urban green open spaces, physical park elements are generally understood as components that shape visitors' spatial experiences through the availability and condition of facilities, vegetation, and ease of access [1,2]. These elements serve not only visual functions but also have the potential to affect how visitors perceive comfort, engage in activities, and evaluate the overall quality of the park. Beyond their recreational function, urban parks are also recognized for their ecological and social roles, including enhancing environmental quality and providing spaces for public interaction [3].

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A number of studies have shown that park design quality is closely associated with visitor responses and behaviors. The presence of tree shading, well-organized pedestrian pathways, and adequate seating areas has been reported to contribute to more positive visitor experiences, improved subjective well-being, and a greater likelihood of repeat visits [4,5]. Nevertheless, the utilization of urban parks continues to face challenges, as reflected in low visitation intensity, short activity durations, or suboptimal user evaluations [6-8]. These conditions suggest that the relationship between the physical quality of parks and user responses requires further contextual empirical examination.

In this study, visitor interest is positioned as both a behavioral and evaluative construct that reflects individuals' tendencies to utilize the park. Conceptually, visitor interest is not viewed merely as an attitude or subjective preference but as a pattern of public space use that can be observed through visitation frequency, duration of visits, and visitor satisfaction. Visitation frequency indicates visitors' tendencies to visit or revisit the park, visit duration reflects levels of comfort and engagement in activities, while visitor satisfaction represents the overall evaluation of park conditions and experiences. This perspective aligns with environmental behavior theories, which emphasize that spatial quality can be reflected through patterns of use and user evaluations.

Bustanussalatin Park in Banda Aceh represents one of the city's historically significant green open spaces, serving recreational, social, and cultural functions. The park holds important historical value, as it was once part of the royal environment during the Aceh Sultanate [9]. Over time, the park has undergone several transformations in identity and function, including changes in name to Vredes Park (1905), Taman Sari (1987), and eventually reverting to Bustanussalatin Park. These transformations were influenced by urban development dynamics and spatial planning policies, which subsequently affected the park's spatial structure, vegetation, and ecological character [10].

Despite revitalization efforts, indications of declining park use remain a concern. This phenomenon is reflected in changing visitation patterns and visitor experiences, suggesting a possible mismatch between the quality of the park's physical elements and visitor needs. In the context of public space planning, understanding the relationships among architectural elements, landscape elements, supporting infrastructure, accessibility, and visitor interest is therefore essential and warrants systematic investigation [11,12].

Despite revitalization efforts, indications of declining park visitation continue to attract attention. This phenomenon, as evidenced by shifts in visitation patterns and visitor experiences, points to a potential gap between the quality of the park's physical elements and visitor expectations. Consequently, within the framework of public space planning, a systematic examination of the relationships between architectural elements, landscape elements, supporting infrastructure, accessibility, and visitor interest becomes increasingly important.

Materials and Methods

This study focuses on examining the influence of architectural elements, landscape elements, accessibility, and supporting infrastructure on visitors' interest in urban parks. Banda Aceh has several urban parks, one of which is Bustanussalatin Park. The park is located in the city center and is situated near major tourist attractions and one of Banda Aceh's most prominent landmarks, the Baiturrahman Grand Mosque, as shown in **Figure 1**.

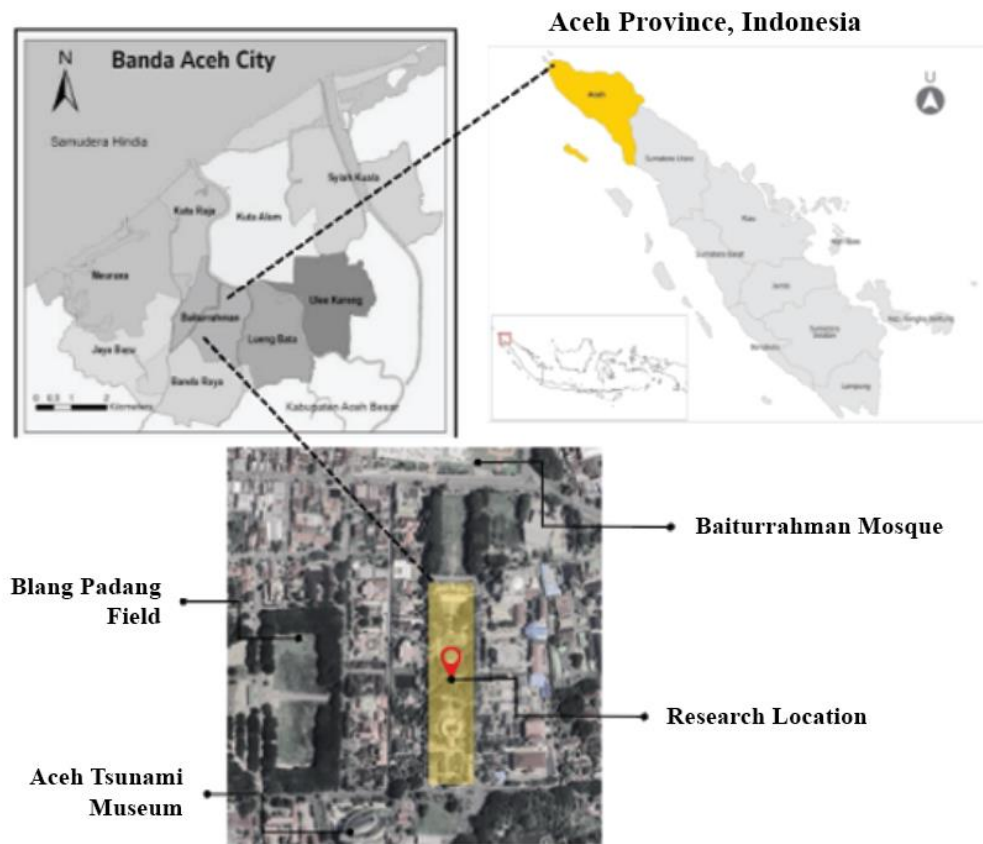


Figure 1. Research location map of Bustanussalatin park

This study adopts a quantitative approach as the primary methodological framework, employing Structural Equation Modeling–Partial Least Squares (SEM-PLS) for data analysis. Quantitative research is defined as an approach that examines social phenomena through theory testing based on measurable variables, which are analyzed using statistical procedures to evaluate the predictive generalizability of the proposed theoretical [13].

In addition to the statistical analysis, an evaluation of the park’s existing physical conditions was conducted to inform the development of spatial design recommendations. This evaluation is descriptive and interpretative in nature and is not positioned as a qualitative analysis grounded in interviews or thematic procedures. Rather, it functions as a site-condition assessment intended to contextualize and relate the statistical findings to the observable realities of the study area.

Furthermore, qualitative reasoning is incorporated in a limited and supportive capacity, specifically to articulate and substantiate the spatial arrangement recommendations derived from the empirical results. In this respect, qualitative interpretation serves to explain design implications and planning strategies aimed at enhancing visitor interest, rather than to generate independent qualitative findings.

Sampling Method

The sampling technique employed in this study is purposive sampling, defined as a respondent selection method based on specific criteria aligned with the research objectives [14]. The respondent criteria were as follows: individuals aged 15–65 years, visitors present at Bustanussalatin Park during the data collection period, and willingness to participate voluntarily

in the survey. This approach was adopted to ensure that respondents possessed direct experiential familiarity with the park’s physical conditions under evaluation. The sample size was set at 200 respondents, taking into account recommended sample adequacy for SEM-PLS analysis to achieve parameter estimation stability and sufficient predictive capability of the model [15].

The research instrument consisted of a structured questionnaire developed based on the operationalization of latent variables within the proposed research model. Measurements were conducted using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). According to Ghozali & Latan assumption testing in SEM involves two main stages: the evaluation of the measurement model to assess indicator validity and reliability, and the evaluation of the structural model to examine the relationships among latent variables [16]. In this study, visitor interest is conceptualized as a behavioral intention construct that reflects the likelihood of repeated visits and prolonged engagement in the urban park.

Table 1. Operationalization of research variables

Latent Variable	Manifest Variable	Definition
Visitor Interest (VI)	Frequency of visits (y_1)	The frequency of visits reflects how often individuals visit the urban park within a specific period [17]
	Duration of visit (y_2)	Duration of visit represents the amount of time spent by individuals engaging in activities within the park during a single visit [18].
	Visitor satisfaction (y_3)	Visitor satisfaction indicates the extent to which park facilities, atmosphere, and services meet user expectations [19].
Architectural Elements (EA)	Availability of seating facilities (x_1)	The availability of adequate seating plays a crucial role in encouraging relaxation and social interaction across age groups [18]
	Fountain or water feature (x_2)	Water features enhance visual appeal and strengthen the identity of urban parks, fostering a stronger emotional connection among visitors [20].
	Uniqueness of ornaments (x_3)	Aesthetic ornaments that align with local cultural values contribute to creating a memorable spatial experience [21]
Landscape Elements (EL)	Plant density (x_4)	Plant density refers to the horizontal and vertical vegetation structure formed by the arrangement of plant layers [22].
	Natural shading (x_5)	Natural shading provided by broad-canopy trees contributes to the comfort for park visitors [23].
	Vegetation diversity (x_6)	The presence of diverse vegetation, both native and introduced species, serves as an important factor in enhancing the ecological quality of urban parks [24].
Supporting Infrastructure (IP)	Availability of trash bins (x_7)	Proper waste bin management, including the separation of organic and inorganic waste, increases cleanliness and comfort in public spaces [25].
	Playground facilities (x_8)	Well-maintained playgrounds function as social interaction hubs that support children's development [26].
	Physical condition of pathways (x_9)	Pathways that are flat, safe, and equipped with proper lighting enhance convenience for all age groups, especially the elderly and children [27].
Accessibility (AC)	Ease of access to the park (x_{10})	Connected pedestrian routes, clear entrances, and sufficient signage significantly increase visit frequency [28].
	Accessibility for persons with disabilities (x_{11})	Inclusive accessibility features such as ramps, guiding blocks, designated parking, and disability-friendly toilets ensure that all users can safely and independently enjoy the park [29].
	Ease of access by vehicle (x_{12})	Vehicle accessibility, including connectivity with public transportation and the availability of strategic parking areas, facilitates visitor mobility from various locations [29].

The structural model proposes that architectural elements, landscape elements, supporting infrastructure, and accessibility directly influence visitor interest. Architectural elements are expected to enhance spatial attractiveness and experiential quality, thereby increasing visitors’ willingness to revisit. Landscape elements are assumed to contribute to environmental comfort

and aesthetic perception, which may strengthen emotional attachment to the park. Supporting infrastructure is hypothesized to improve functional convenience and service quality, thus positively affecting visitor interest. Accessibility is proposed to reduce physical and mobility barriers, potentially increasing visit intention. Accordingly, the SEM framework models these four constructs as exogenous variables predicting visitor interest as the endogenous variable, as operationalized in **Table 1**.

Data Analysis

The data analysis technique employed in this study was Structural Equation Modeling (SEM). Referring to Ghazali and Latan, the evaluation of the measurement model was conducted through convergent validity, discriminant validity, and construct reliability testing [16]. Convergent validity was assessed using loading factor values of ≥ 0.70 . Discriminant validity was evaluated using cross-loadings (≥ 0.70) and the Heterotrait–Monotrait Ratio (HTMT), where values below 0.90 indicate adequate discriminant validity. Construct reliability was assessed using Composite Reliability (CR) or rho_C values of ≥ 0.70 and Cronbach's Alpha values of ≥ 0.60 .

Subsequently, the structural model evaluation involved the assessment of path coefficients, Variance Inflation Factor (VIF), effect size (f^2), predictive relevance (Q^2), R-square (R^2), hypothesis testing, and overall model adequacy. Within SmartPLS-based SEM analysis, R^2 values are commonly classified into three categories: weak (0.19), moderate (0.33), and substantial (0.67). The effect size (f^2), which measures the contribution of exogenous variables to endogenous variables, is interpreted as small (≥ 0.02), medium (≥ 0.15), and large (≥ 0.35). Predictive relevance is considered acceptable when Q^2 values exceed zero ($Q^2 > 0$), indicating that the model has predictive capability. Multicollinearity issues are deemed negligible when VIF values remain below 3.3.

The significance of structural relationships was tested using a bootstrapping procedure with 5,000 subsamples, as recommended in SEM-PLS analysis to ensure robust and stable parameter estimation.

Results

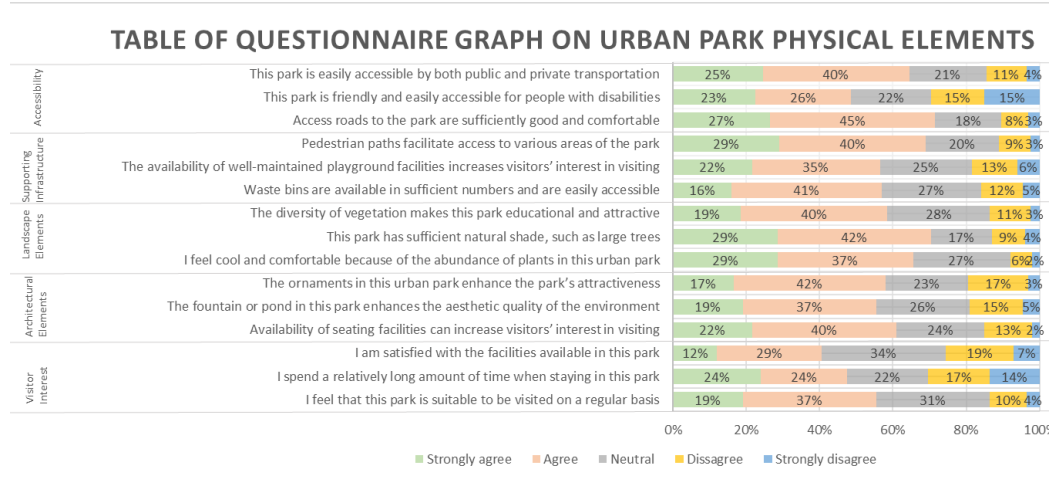
Public Perceptions of Physical Elements of Urban Parks in Optimizing Visitor Interest

The respondent profile ($n = 200$) at Bustanussalatin Park consisted of 30% males and 70% females. In terms of age, 23% of respondents were ≤ 20 years old, 69% were between 21–40 years, and 9% were ≥ 41 years. Regarding occupational background, respondents included government employees (9%), private-sector employees (19%), military/police personnel (1%), housewives (6%), students (30%), and others (36%).

Table 2 presents the questionnaire results, summarizing the items administered to respondents along with the corresponding response percentages. The findings indicate that the majority of respondents expressed positive perceptions of the physical elements of the urban park. Accessibility was generally evaluated favorably, as the park is considered easily reachable by visitors; however, facilities for persons with disabilities were perceived as requiring further improvement.

Architectural elements, including pedestrian pathways and park facilities, were regarded as adequately supportive of visitor comfort and activities. Landscape elements received the most positive evaluations, particularly with respect to vegetation diversity and the presence of shading trees, which contribute to a pleasant and comfortable environment. Supporting infrastructure and park facilities were assessed as satisfactory overall, although respondents indicated that further optimization is necessary to enhance visitor satisfaction and sustain long-term visitation interest.

Table 2. Distribution of Questionnaire Results



Measurement Model

Based on the data processing results using SmartPLS version 4.0, the research model was generated as illustrated in **Figure 2**. The model consists of four exogenous latent variables Architectural Elements, Landscape Elements, Supporting Infrastructure, and Accessibility, and one endogenous latent variable, Visitor Interest.

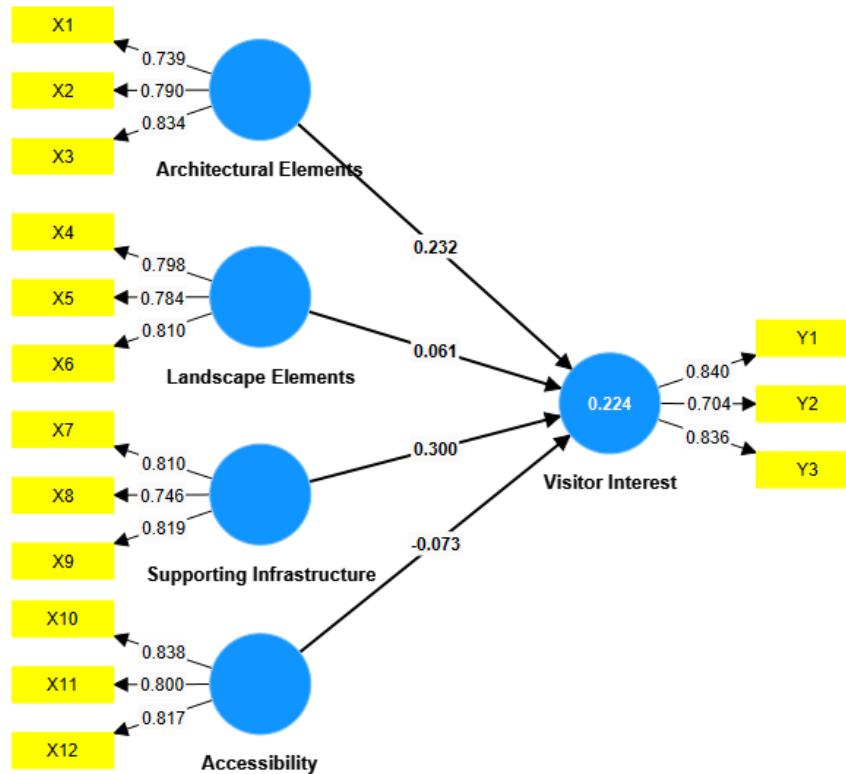


Figure 2. Path model construction

The results of the measurement model analysis indicate that all indicators have loading factor values above 0.70, as presented in **Table 3**. This finding suggests that each indicator makes a strong contribution to representing its latent construct. Overall, these results

demonstrate that all indicators meet the measurement adequacy criteria and are therefore suitable for use in the subsequent structural model analysis.

Table 3. Loading factor values

	Accessibility	Architectural Elements	Landscape Elements	Supporting Infrastructure	Visitor Interest
Y2					0.704
Y3					0.836
Y1					0.840
X1		0.739			
X2		0.790			
X3		0.834			
X5			0.784		
X4			0.798		
X6			0.810		
X8				0.746	
X7				0.810	
X9				0.819	
X11	0.800				
X12	0.817				
X10	0.838				

The results of the discriminant validity test indicate that all indicators exhibit the highest cross-loading values on their respective original constructs compared to other constructs. This pattern confirms that each indicator specifically represents the construct it is intended to measure, with no significant overlap between constructs. Therefore, all indicators in the model meet the discriminant validity criteria in accordance with the guidelines proposed by [16].

The results in **Table 4** indicate that all constructs in this study have met the reliability criteria. This is evidenced by Composite Reliability values that are all above 0.70, as well as Cronbach’s Alpha values that exceed the minimum threshold of 0.60. In addition, all Average Variance Extracted (AVE) values are greater than 0.50. AVE values above this threshold indicate that more than 50% of the indicator variance can be explained by the measured construct. Therefore, all constructs in the model are confirmed to have good convergent validity.

Table 4. Composite reliability (CR) average variance extracted (AVE), and cronbach’s alpha values

	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Accessibility	0.754	0.859	0.670
Architectural Elements	0.694	0.831	0.621
Landscape Elements	0.717	0.840	0.636
Supporting Infrastructure	0.703	0.835	0.628
Visitor Interest	0.718	0.837	0.633

The results of the discriminant validity assessment using the Heterotrait–Monotrait Ratio (HTMT), as presented in **Table 5**, indicate that most construct pairs satisfy the recommended threshold (< 0.90). However, several construct pairs exhibit HTMT values exceeding the acceptable limit, most notably between Landscape Elements and Supporting Infrastructure. This finding suggests a degree of conceptual overlap between the constructs. Substantively, this outcome remains theoretically justifiable, as landscape components and physical infrastructure within urban parks are often perceived by visitors as integrated and interrelated aspects of the overall park environment.

Table 5. Discriminant Validity HTMT

	Accessibility	Architectural Elements	Landscape Elements	Supporting Infrastructure
Visitor Interest	0.389	0.562	0.494	0.570
Supporting Infrastructure	0.940	0.857	0.972	
Landscape Elements	0.901	0.880		
Architectural Elements	0.722			

Structural Model

In SmartPLS-based SEM, path coefficients are employed to indicate both the direction and magnitude of relationships among latent variables. Positive coefficients reflect a direct (positive) relationship, whereas negative coefficients indicate an inverse relationship. The magnitude of each coefficient represents the relative contribution of the corresponding exogenous variable in explaining the endogenous variable. Based on the structural model estimation results, the relationships among the latent constructs in this study can be expressed in **Equation 1**.

$$\eta = 0.232\xi_1 + 0.061\xi_2 + 0.300\xi_3 - 0.073\xi_4 + \zeta_1 \tag{1}$$

The estimated structural equation indicates that Architectural Elements, Landscape Elements, and Supporting Infrastructure exhibit positive coefficients with respect to Visitor Interest, whereas Accessibility demonstrates a negative coefficient. Positive coefficients signify a direct relationship, implying that improvements in the quality of these constructs tend to be associated with higher levels of Visitor Interest. Conversely, the negative coefficient for Accessibility suggests an inverse relationship, which contrasts with the initial expectation. Nevertheless, the interpretation of coefficient direction should be made cautiously and in conjunction with the results of statistical significance testing, as not all relationships are statistically significant.

The multicollinearity assessment presented in **Table 6** indicates that all Variance Inflation Factor (VIF) values fall below the conservative threshold of 3.3, ranging from 1.792 to 2.497. These results confirm the absence of multicollinearity among the exogenous variables, suggesting that the structural model is stable and not affected by collinearity bias.

Table 6. Results of VIF

	VIF
Accessibility -> Visitor Interest	2.161
Architectural Elements -> Visitor Interest	1.792
Landscape Elements -> Visitor Interest	2.418
Supporting Infrastructure -> Visitor Interest	2.497

The R² value for the Visitor Interest construct is 0.224, indicating that Architectural Elements, Landscape Elements, Supporting Infrastructure, and Accessibility collectively explain 22.4% of the variance in Visitor Interest, while the remaining 77.6% is attributable to factors beyond the scope of the proposed model. According to commonly accepted guidelines for interpreting R² values in PLS-based SEM, this result suggests that the model demonstrates weak to moderate explanatory power. These findings imply that although the physical elements of the park contribute to shaping Visitor Interest, other variables not included in the model may play a more substantial role in explaining visitation behavior within the studied urban park context.

The effect size (f^2) analysis presented in **Table 7** reveals that Architectural Elements ($f^2 = 0.039$) and Supporting Infrastructure ($f^2 = 0.046$) exert small effects on Visitor Interest. In contrast, Accessibility ($f^2 = 0.003$) and Landscape Elements ($f^2 = 0.002$) demonstrate very weak effect sizes. These findings indicate that the practical contributions of the exogenous variables to Visitor Interest are relatively limited within the proposed research model.

Table 7. Results of f^2

	Visitor Interest
Accessibility	0.003
Architectural Elements	0.039
Landscape Elements	0.002
Supporting Infrastructure	0.046

The blindfolding results presented in **Table 8** indicate a Q^2 value of 0.126 for the endogenous construct Visitor Interest. As the Q^2 value exceeds zero, the structural model can be considered to possess predictive relevance. This value suggests a small-to-moderate level of predictive capability, implying that the exogenous variables demonstrate adequate predictive power in explaining Visitor Interest.

Table 8. Results of Q^2

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Accessibility	600.000	600.000	0.000
Architectural Elements	600.000	600.000	0.000
Landscape Elements	600.000	600.000	0.000
Supporting Infrastructure	600.000	600.000	0.000
Visitor Interest	600.000	524.622	0.126

Inner Model

Based on the analysis results, not all exogenous constructs exert a significant influence on the endogenous variable, Visitor Interest. The test results presented in **Table 9** indicate that Architectural Elements and Supporting Infrastructure have a significant effect on Visitor Interest. These findings indicate that the quality of architectural elements and the presence of supporting infrastructure are the main determinants driving increased public interest in visiting Bustanussalatin Park.

In contrast, the Landscape Elements and Accessibility variables do not show a significant effect on Visitor Interest. Therefore, these two variables have not provided sufficiently strong empirical contributions to increasing visitor interest, although theoretically they still play a role in shaping spatial perceptions and user experiences.

Table 9. Results of parameter coefficient testing

	Original sample	T statistics	P values
Accessibility -> Visitor Interest	-0.073	0.788	0.431
Architectural Elements -> Visitor Interest	0.232	2.667	0.008
Landscape Elements -> Visitor Interest	0.061	0.565	0.572
Supporting Infrastructure -> Visitor Interest	0.300	2.667	0.008

Architecture Elements

Based on the analysis above, improvements in architectural elements, namely seating, fountain pools, and the uniqueness of ornaments, can significantly increase visitor interest. According to Russ, the availability of seating facilities is an essential element of park comfort [30]. Seating should be placed along main pathways and gathering areas, with an ideal spacing of 5–10 meters

between benches to ensure user comfort. The materials used should be weather-resistant, such as hardwood, rust-resistant metal, or concrete.

In addition, fountain pools are important as aesthetic enhancers and sources of visual tranquility. Ponds or fountains should be positioned at focal points or circulation nodes, with circular or organic forms. The uniqueness of ornaments may take the form of sculptures, decorative stones, or artistic elements. Ornamental materials can include natural stone, metal, or ceramics that reflect local identity, and their placement should be strategically located in open areas or near water features [31]. The arrangement of architectural elements is presented in **Table 10.**

Table 10. Architecture Elements Arrangement

Indicator	Existing Conditions	Recommendation
Seating	The distance between benches tends to be inconsistent. Seating is made of iron material that has begun to rust.	The distance between benches should be adjusted to 6.5 m. Seating should be made of concrete material to facilitate maintenance
Fountain Pool	The fountain pool is located at the very front part of the park. The size of the fountain pool is too large, making it difficult to maintain.	Maintain the existing design. The fountain pool should be made smaller with a circular shape.
Uniqueness of Ornaments	Ornaments are damaged due to materials that are unsuitable for outdoor spaces. Ornaments are only placed at the park entrance.	Ornamental materials should use natural stone and ceramics. Ornaments should be placed around the fountain pool.

The model for arranging architectural elements in Bustanussalatin Park is illustrated in **Figure 3.**



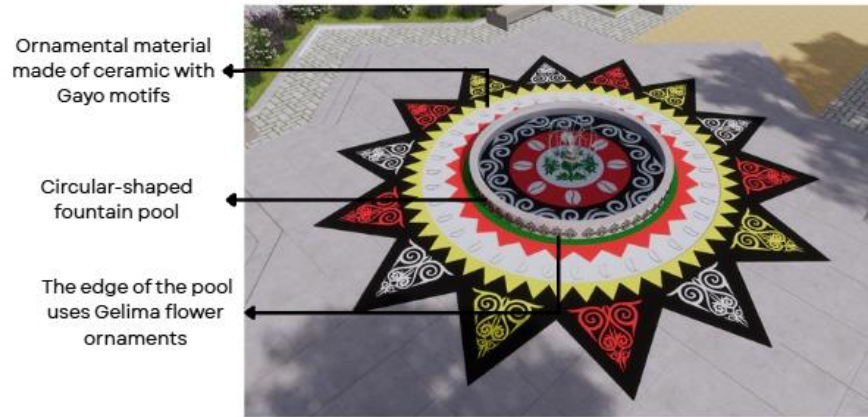


Figure 3. Architecture Elements Arrangement Model

Supporting Infrastructure

The analysis results indicate that improvements in supporting infrastructure namely trash bins, playground areas, and pedestrian pathways, can significantly increase visitor interest. Trash bins should be installed at intervals of 30–50 meters along the main pathways, constructed from stainless steel or high-density polyethylene (HDPE) plastic, and designed to allow easy and regular maintenance [34,33]. Playground facilities should be designed to accommodate the 2–12 age group, with play surfaces using rubber tiles for safety. The main pedestrian pathways should also meet comfort and accessibility standards, using concrete or paving materials and a minimum width of 1.5 meters [30]. The arrangement of supporting infrastructure is presented in **Table 11**.

Table 11. Supporting Infrastructure Arrangement

Indicator	Existing Conditions	Recommendation
Trash Bins	The spacing between trash bins is not optimally arranged. Trash bins are placed along the edge of the pedestrian pathway. The physical condition of the trash bins shows a fairly significant level of damage.	The distance between trash bins should be 30 meters. Trash bins should be positioned approximately ± 5 meters back from the pedestrian pathway. Trash bin materials should use HDPE plastic.
Playground Facilities	The playground is located near the smoking area. Several play equipment items are damaged and unfit for use. The play area surface uses synthetic grass carpet.	The playground should be located near the monument and far from the smoking area. Damaged equipment should be replaced with new equipment, and additional play equipment should be provided. The play surface should use rubber tiles.
Pedestrian Pathways	Vegetation roots damage the pedestrian pathways. The paving blocks on the pathways are broken and lifted due to lack of maintenance.	Vegetation roots should be pruned to prevent damage to the pathways. The paving blocks should be repaired so that the pedestrian pathways are in good condition.

The proposed model for organizing the architectural elements in Bustanussalatin Park is illustrated in **Figure 4**.

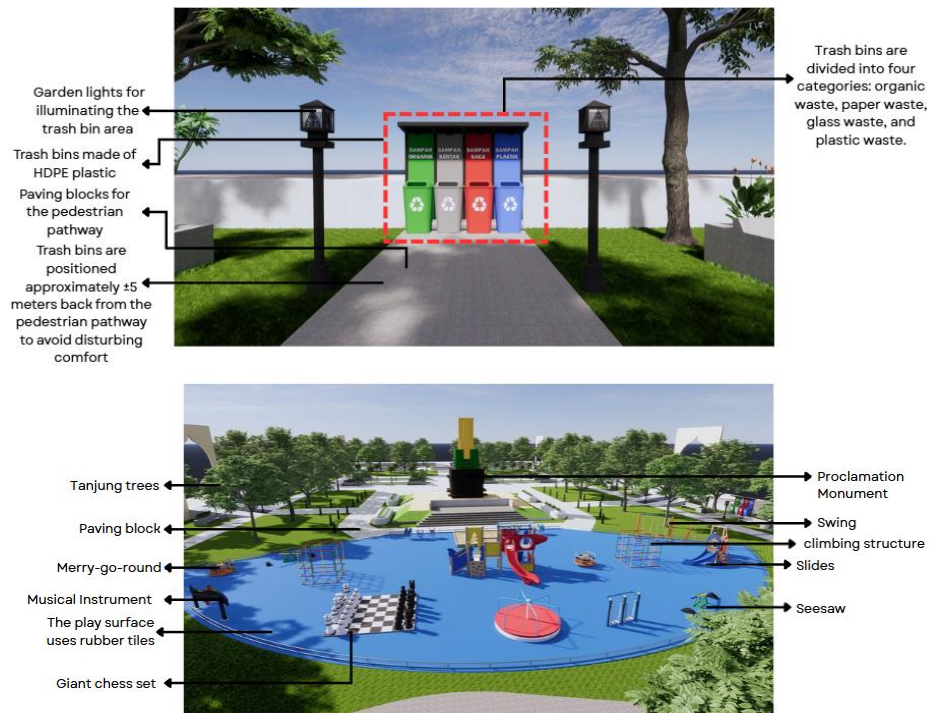


Figure 4. Supporting Infrastructure Arrangement Model

Discussion

The findings indicate that the measurement model satisfies the adequacy criteria in SEM-PLS analysis. All indicators exhibit loading factors exceeding 0.70, confirming satisfactory convergent validity. Discriminant validity is also established, as reflected by the highest cross-loadings occurring on the respective constructs associated with each indicator. Furthermore, construct reliability is verified through Composite Reliability values above 0.70, Cronbach's Alpha values surpassing recommended thresholds, and Average Variance Extracted (AVE) values exceeding 0.50. Collectively, these results affirm that the research instrument consistently and accurately represents the latent constructs, thereby supporting reliable interpretation of the structural model.

At the structural model stage, the results reveal that not all exogenous variables exert significant effects on Visitor Interest. Architectural Elements and Supporting Infrastructure demonstrate positive and statistically significant influences, with path coefficients of 0.232 and 0.300, respectively ($p = 0.008$). These findings suggest that tangible physical attributes of the park—particularly those directly utilized by visitors—constitute critical determinants in shaping visitation tendencies. Elements such as seating facilities, water features, ornaments, cleanliness-related amenities, playgrounds, and pedestrian pathways contribute to perceived comfort, spatial experience quality, and visual attractiveness. This outcome aligns with prior studies emphasizing the close association between the quality of physical facilities and user experience in public open spaces [12,20,4].

Empirical observations of the park's existing conditions reveal several physical issues, including irregular bench spacing and the use of materials susceptible to environmental degradation. In the context of public space design, material quality and facility layout are widely recognized as factors influencing perceived comfort and long-term usability. Water features, such as fountains, function as visual focal points that enhance the overall spatial experience, although maintenance efficiency must be considered to ensure their aesthetic sustainability. Strategically designed and positioned ornaments also contribute to reinforcing place identity, as highlighted in studies on visual perception and urban park identity [4].

In addition to Architectural Elements, Supporting Infrastructure emerges as the most influential variable within the model. This result underscores that visitors tend to be more

responsive to facilities with direct and utilitarian functions. The availability of waste bins, playground facilities, and well-maintained pedestrian pathways plays a vital role in shaping perceptions of cleanliness, safety, and environmental comfort. These findings are consistent with previous research indicating that the quality of supporting facilities significantly affects visitor satisfaction and revisit intentions in recreational public spaces [4,[20].

Conversely, Landscape Elements do not demonstrate a significant effect on Visitor Interest. This outcome suggests that vegetation presence, plant density, and natural shading may not serve as primary determinants in the studied park context. Similar conclusions have been reported by Lis et al, who argue that vegetation elements do not always significantly influence visitor preferences [33]. The lack of significance may be attributable to the possibility that excessively dense vegetation generates perceptions of reduced safety, potentially diminishing the space's attractiveness to users.

Accessibility also exhibits a non-significant relationship with a negative coefficient. This finding implies that ease of access to the park is not a decisive factor influencing visitation interest in this context. Comparable results were documented by Hasanah et al, who found that accessibility did not significantly affect visitation levels in certain public spaces [34]. Conceptually, this may indicate that when accessibility is generally perceived as adequate, it ceases to function as a distinguishing variable in visitation decisions.

Overall, the R^2 value of 0.224 indicates that the model possesses limited explanatory power, suggesting that Visitor Interest is likely influenced by additional factors beyond the scope of the present model. The public space literature emphasizes that social and psychological variables—such as perceived safety, social comfort, activity patterns, and destination image—often play a substantial role in explaining urban park use behaviour [3,20]. Therefore, the results of this study should be interpreted as a partial representation of the multifaceted determinants shaping visitor interest in urban parks.

Research Limitations

Although both the measurement and structural models in this study satisfy the statistical criteria required in SEM-PLS analysis, several limitations should be acknowledged when interpreting the findings. First, the study was conducted at a single urban park location, rendering the results inherently contextual. Consequently, the findings cannot be directly generalized to other urban parks with differing spatial, social, or cultural characteristics. Variations in park design, usage patterns, and user profiles may yield relationships among variables that are not necessarily identical.

Second, the application of purposive sampling constrains probabilistic representativeness. While this technique ensures that respondents possess direct experience with the evaluated park environment, the potential for selection bias cannot be entirely excluded. Third, the study relies on perception-based and self-reported data, which are inherently subject to possible subjective biases, including individual perception bias, situational influences during questionnaire completion, and respondents' tendencies to evaluate spatial quality based on personal judgment.

Fourth, the coefficient of determination ($R^2 = 0.224$) indicates that the model explains only a limited proportion of the variance in Visitor Interest. This suggests that visitation interest in urban parks is a multidimensional phenomenon influenced by additional factors beyond those incorporated in the present model, such as perceived safety, social comfort, environmental cleanliness, the presence of activities or events, and the overall image of the park as a public space. Therefore, the results should be understood as a partial representation of the complex determinants underlying visitor behavior in urban green spaces.

In light of these limitations, future research is recommended to expand the scope of study locations, consider probabilistic sampling approaches, incorporate additional theoretically relevant variables, and integrate quantitative and exploratory methods to develop a more comprehensive understanding of the determinants of Visitor Interest in urban green open spaces.

Conclusion

This study demonstrates that not all variables within the proposed model exert equivalent effects on Visitor Interest at Bustanussalatin Park. The SEM-PLS analysis reveals that Architectural Elements and Supporting Infrastructure have positive and statistically significant influences, establishing them as the primary drivers of increased public interest in visiting the park. These findings underscore the importance of tangible physical attributes directly experienced by users, including seating comfort, the presence of visually engaging features such as fountains and ornaments, and well-maintained supporting facilities such as organized waste bins, functional playgrounds, and comfortable pedestrian pathways. Collectively, these elements contribute to a more pleasant spatial experience and enhance visitors' motivation to revisit.

In contrast, Landscape Elements and Accessibility do not exhibit significant effects on Visitor Interest. This outcome suggests that aspects related to vegetation, shading, and ease of access have not yet emerged as decisive factors influencing visitation decisions within the studied context. Although all indicators associated with these variables satisfy established validity and reliability criteria, the results indicate that visitors are more responsive to physical facilities and environmental comfort that directly support their activities within the park than to landscape characteristics or accessibility considerations.

Overall, the findings indicate that development strategies for Bustanussalatin Park should prioritize improvements in Architectural Elements and Supporting Infrastructure, as these dimensions demonstrate the most substantial impact on Visitor Interest. Enhancing these aspects is likely to strengthen the park's attractiveness and reinforce its function as a comfortable and functional public space. Nevertheless, continued attention to Landscape Elements and Accessibility remains important as a complementary strategy to promote a more holistic spatial experience and to support the park's broader social and ecological roles.

Acknowledgments

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Conflict of Interest

All respondents participated on a voluntary basis. Prior to completing the questionnaire, respondents were informed about the purpose of the study, the anonymous nature of the survey, and their right to withdraw from participation at any time without any consequences. No personally identifiable information was collected, thereby ensuring the confidentiality and privacy of all respondents.

Author Contribution Statement

Shafira Qathrunnada: Conceptualization, Data curation, Formal analysis, Investigation, Methodology Project administration, Resources, Software, Supervision, Writing – original draft, Writing – review & editing. **Ashfa Achmad:** Conceptualization, Data curation, Formal Analysis, Methodology, Resources, Supervision, Validation, Writing – review & editing. **Sylvia Agustina:** Conceptualization, Data curation, Formal Analysis, Methodology, Resources, Supervision, Validation, Writing – review & editing.

Data Availability Statement

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

Ethics Approval

Not required.

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