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The Mediating Role of Place Attachment in the Relationship Between Perceived Restorativeness and Revisit Intention: A Comparative Study of Urban Forests in Jakarta

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Abstract

This study aims to analyze the effect of perceived restorativeness on revisit intention, with place attachment as an intervening variable among visitors to urban forests in Jakarta. The study was conducted at four urban forests: GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest. A quantitative approach was employed involving 250 respondents selected using purposive sampling. The respondents were required to have prior visiting experience at one of the four research locations: GBK City Forest, Tebet Eco Park, Srengseng City Forest, or Kemayoran City Forest. The results indicate that perceived restorativeness has a positive and significant effect on both place attachment and revisit intention. Furthermore, place attachment has a positive and significant effect on revisit intention. The indirect effect analysis confirms that place attachment significantly mediates the relationship between perceived restorativeness and revisit intention. These findings indicate that restorative experiences can strengthen visitors' attachment to urban forests and subsequently encourage revisit intentions. The study provides implications for urban forest management in supporting restorative experiences and sustainable visitor engagement.

Keywords: perceived restorativeness, place attachment, revisit intention

A. Introduction

Increasing urbanization has heightened the need for urban green spaces that not only perform ecological functions but also support human health, well-being, and the quality of urban experiences. Urban green spaces provide various benefits related to health, social relationships, and human well-being. Characteristics of green spaces, such as vegetation structure, biodiversity, and naturalness, are associated with various dimensions of human well-being, particularly health and social relationships (Reyes-Riveros et al., 2021). More recent evidence also indicates that the relationship between urban green spaces and well-being is determined not only by physical characteristics but also by how users perceive and experience these spaces (Syamili et al., 2023).

From the perspective of urban tourism and recreation, green spaces can develop into places that provide recreational experiences while offering an alternative for people to escape from urban routines. City parks, urban forests, and public green spaces provide opportunities to interact with nature without leaving urban areas. The literature indicates that urban green spaces contribute to well-being through environmental characteristics, user experiences, and subjective perceptions of these spaces (Reyes-Riveros et al., 2021; Syamili et al., 2023). This is particularly relevant to metropolitan cities such as Jakarta, where green spaces can simultaneously function as environmental infrastructure, recreational areas, and places for human–nature interaction.

One approach that can be used to explain visitors' experiences of green environments is the concept of perceived restorativeness. This concept is rooted in Attention Restoration Theory, which explains that certain environments possess characteristics that enable individuals to restore their attentional capacity after experiencing fatigue caused by the demands of daily activities (Kaplan, 1995). Restorative environments generally provide experiences of being away, fascination, extent, and compatibility, allowing individuals to gain psychological distance from daily routines, experience more effortless attention, and perceive a fit between their needs and the characteristics of the environment. In urban green spaces, these characteristics can make natural environments places for relaxation, attention restoration, and psychological refreshment (Korpela et al., 2008).

The relevance of perceived restorativeness becomes stronger when green spaces are viewed as recreational destinations. Research involving visitors to various types of forest areas has shown that perceptions of the restorative qualities of the environment are associated with visitors' psychological experiences (Lee et al., 2021). Furthermore, Zhou et al. (2023) found that dimensions of perceived environmental restorativeness, including compatibility, extent, and being away, positively influence place attachment among visitors to forest parks. These findings are important because they indicate that restorative environmental experiences extend beyond individual psychological benefits and may contribute to the development of psychological relationships between individuals and places.

The concept of place attachment describes the psychological and emotional bond between individuals and a particular place. Attachment to a place can develop through visitors' interactions with the environment, experiences at the destination, and the meanings they assign to the place. A recent meta-analysis of 228 studies indicates that place attachment is associated with various antecedent factors, including destination environments, tourism experiences, engagement, and perceptions of places; furthermore, place attachment is also associated with various tourist attitudes and behaviors (Cai et al., 2025). These findings reinforce the importance of place attachment as a construct for explaining the relationship between visitor experiences and behavioral responses to destinations.

In tourist behavior, one important consequence of attachment to a place is revisit intention. Revisit intention is a behavioral indicator reflecting the potential continuity of visitors' relationships with a destination. A meta-analysis by Zou et al. (2022), covering 56 studies, found a positive relationship between place attachment and tourist loyalty, including loyalty behaviors such as revisit intention. Empirical findings in urban parks also indicate that place attachment can function as an intervening variable in the relationship between experiences of park attributes and revisit intention. For example, Nursyamsiah and Setiawan (2023) found that place attachment mediates the relationship between satisfaction with park revitalization and revisit intention among visitors to Taman Lapangan Banteng in Jakarta. These findings indicate that decisions to return to a recreational space are influenced not only by functional evaluations of the place but also by the psychological attachment developed through the visiting experience.

Although the relationships between perceived restorativeness and place attachment, as well as between place attachment and tourist behavior, have received attention in the literature, there remains a need to clarify the mechanism linking restorative experiences to revisit intention in urban green spaces. Zhou et al. (2023) demonstrated that place attachment mediates the effect of perceived restorativeness on pro-environmental behavior among visitors to forest parks. This study provides an important basis for understanding how restorative experiences can foster attachment to places. However, its outcome variable was pro-environmental behavior rather than revisit intention. Conversely, Nursyamsiah and Setiawan (2023) demonstrated the mediating role of place attachment in relation to revisit intention in a revitalized park, but their antecedent focused on satisfaction with park revitalization rather than restorative environmental experiences.

This research gap is particularly relevant because studies on urban green spaces have often focused on well-being or health as primary outcomes. A systematic review of the relationship between public green spaces and well-being highlights the dominance of research focusing on health, social relationships, and other dimensions of well-being (Reyes-Riveros et al., 2021). Similarly, a systematic review of urban green spaces indicates that much of the existing research has focused on the relationship between green-space

characteristics and well-being, while approaches that position green spaces as part of destination experiences and visitor behavior remain open for further development (Syamili et al., 2023). This condition provides an opportunity to extend the study of urban green spaces beyond ecological and psychological benefits toward visitor behavior and the sustainability of relationships between visitors and green spaces.

This study specifically positions urban forests as a form of urban recreational destination with characteristics that differ from conventional nature-based tourism destinations. GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest offer urban green spaces that differ in terms of physical environment, landscape characteristics, facilities, accessibility, and visitor experiences. These differences allow the study not only to examine relationships among the variables but also to gain a deeper understanding of how restorative experiences may contribute to the development of place attachment and revisit intention in urban green spaces. This approach is consistent with the finding that the relationship between green-space characteristics and well-being is also influenced by users' subjective perceptions (Syamili et al., 2023).

Based on the preceding discussion, this study develops a model positioning perceived restorativeness as the independent variable, place attachment as the intervening variable, and revisit intention as the dependent variable. The model is theoretically based on the assumption that perceptions of an environment's capacity to provide psychological restoration can foster psychological attachment to a place, which may subsequently encourage visitors' intention to return. Conceptually, this relationship integrates the perspective of Attention Restoration Theory with the human–place relationship perspective in tourism behavior research (Kaplan, 1995; Zhou et al., 2023; Cai et al., 2025).

This study aims to analyze the effect of perceived restorativeness on revisit intention through place attachment among visitors to GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest in Jakarta. The study is expected to make two contributions. Theoretically, it extends research on visitor behavior in urban green spaces by integrating restorative experiences, place attachment, and revisit intention within a single conceptual framework. Practically, the findings may provide a basis for urban forest managers to understand that the quality of green spaces is not only associated with the availability of facilities and vegetation but also with their capacity to provide restorative experiences and foster psychological relationships with visitors.

B. Literature Review

Perceived Restorativeness

Perceived restorativeness refers to an individual's perception of an environment's ability to help restore psychological well-being and attentional capacity after experiencing the demands of daily activities. In the context of

tourism, this concept is relevant because tourists seek not only visual attractions but also environments that can provide experiences of restoration, relaxation, and escape from daily routines. Ding and Xu (2024) demonstrated that perceived environmental restorativeness is associated with tourists' expectations in the context of restorative tourism. Environments perceived as having restorative characteristics can provide tourists with opportunities to recover from the pressures of everyday life. Thus, perceived restorativeness can be understood as visitors' subjective evaluation of a destination environment's ability to provide calming and restorative psychological experiences.

In nature-based environments, perceived restorativeness is associated not only with psychological restoration but also with the development of visitors' relationships with places. Yoon et al. (2023), in a study of 408 visitors to Jeju Gotjawal Provincial Park in South Korea, found that perceived restorativeness had positive effects on place identity and place dependence. Chiang (2024) also demonstrated that restorative experiences can be associated with the development of place attachment through the integration of Attention Restoration Theory and Place Attachment Theory. Furthermore, the meta-analysis by Hao et al. (2026), which analyzed 56 studies and 122 effect sizes, identified relationships between restorative characteristics and dimensions of place attachment, particularly between fascination and both place dependence and place identity. Based on these findings, this study conceptualizes perceived restorativeness as visitors' perceptions of an urban forest's ability to provide psychological restoration through experiences of being away, fascination, extent, and compatibility.

Place Attachment

Place attachment describes the psychological relationship that develops between individuals and a particular place. In tourism research, this construct is used to explain how visitors' experiences of a destination can develop into a deeper relationship beyond mere evaluations of the destination's physical attributes. Such attachment can develop through experiences of being in a place, the compatibility between individual needs and environmental characteristics, and the emotional meanings that develop during a visit. Jin et al. (2020) demonstrated that place attachment can be incorporated into tourist behavior models to explain revisit intention in ecotourism destinations. This indicates that attachment to a place is not merely a psychological state but may also have implications for tourist behavior.

Place attachment can be reflected through place identity and place dependence. Yoon et al. (2023) demonstrated that visitors to natural areas can develop attachment to a place through perceptions of restorative environments. Place identity describes the extent to which a place becomes part of an individual's identity, whereas place dependence refers to the extent to which a place's characteristics are perceived as capable of fulfilling particular needs or supporting specific activities. Zheng et al. (2024) also demonstrated that place attachment is associated with tourist revisit intention. In the context of urban

forests, such attachment may develop through repeated experiences, comfort, interactions with the natural environment, and the compatibility of the place with visitors' recreational needs. Therefore, place attachment is positioned as a psychological mechanism that may connect environmental experiences with visitor behavior.

Revisit Intention

Revisit intention refers to tourists' tendency or willingness to visit a destination again in the future. This construct is important in tourism research because it represents the continuity of the relationship between tourists and destinations following a visit. Unlike satisfaction, which primarily reflects an evaluation of an experience that has already occurred, revisit intention is oriented toward planned future behavior. Jin et al. (2020) integrated place attachment and destination image into an extended model of goal-directed behavior to explain revisit intention at ecotourism destinations. Their findings indicate that psychological processes developed through destination experiences may contribute to the formation of tourists' behavioral intentions.

Research by Yamagishi et al. (2024) in the context of farm tourism indicates that place attachment and memorable tourism experience are associated with revisit intention, while place attachment also plays a mediating role in certain mechanisms related to revisit intention. Wei et al. (2024) likewise found an association between local attachment and revisit intention, with perceived risk influencing this relationship. These findings suggest that tourists' intentions to revisit are determined not only by the physical characteristics or attributes of a destination but also by the psychological relationship that develops between visitors and places. In this study, revisit intention is positioned as a behavioral response following visitors' experiences in urban forests, reflecting their willingness to maintain a relationship with urban green spaces through future visits.

Perceived Restorativeness and Place Attachment

The relationship between perceived restorativeness and place attachment can be explained through the psychological processes that occur when individuals experience an environment that provides restoration. An environment perceived as capable of reducing the pressures of daily activities, providing a sense of tranquility, and fulfilling individual needs may generate positive evaluations of the place. These positive evaluations may subsequently develop into a stronger psychological relationship with the place. Yoon et al. (2023) provided empirical evidence that perceived restorativeness has positive effects on place identity and place dependence among visitors to Jeju Gotjawal Provincial Park. This finding indicates that experiences of restorative environments can serve as one of the foundations for developing psychological attachment to a place.

Further support for this relationship was provided by Chiang (2024), who integrated restorative experiences with place attachment in the context of rural

destinations. Meanwhile, Hao et al. (2026), through a meta-analysis, demonstrated that characteristics of perceived restorativeness, particularly fascination, are associated with place dependence and place identity in nature-based destinations. These findings suggest that the more positively visitors perceive an environment's ability to provide restorative experiences, the greater the potential for a psychological relationship with that place to develop. In the context of urban forests in Jakarta, environments that provide visitors with opportunities to escape from daily routines, enjoy natural surroundings, and engage in recreational activities may create experiences that subsequently strengthen their attachment to the place. Based on this argument, the first hypothesis is formulated as follows:

H1: Perceived restorativeness has a positive effect on place attachment among visitors to urban forests in Jakarta**.**

Place Attachment and Revisit Intention

The relationship between place attachment and revisit intention is based on the view that psychological attachment to a place can encourage individuals to maintain their relationship with that place. When a destination has personal, emotional, or functional significance for visitors, the desire to return may represent one form of maintaining that relationship. Jin et al. (2020) demonstrated that place attachment can be incorporated to provide a broader explanation of revisit intention in ecotourism destinations. Attachment to a destination constitutes part of the psychological process that helps explain how tourism experiences can develop into future behavioral intentions.

This finding is further supported by Yamagishi et al. (2024), who demonstrated that place attachment is one of the factors associated with revisit intention in the context of farm tourism. Zheng et al. (2024) also identified a relationship between place attachment and tourist revisit intention and demonstrated an additional psychological mechanism through tourist intimacy. These findings indicate that visitors' relationships with destinations may extend beyond evaluations of physical attributes and satisfaction alone. In the context of urban forests, visitors with stronger psychological attachment to an urban forest may be more inclined to maintain that relationship through the intention to revisit. Therefore, the second hypothesis is formulated as follows:

H2: Place attachment has a positive effect on revisit intention among visitors to urban forests in Jakarta.

Perceived Restorativeness dan Revisit Intention

Perceived restorativeness may be conceptually related directly to revisit intention because restorative experiences can provide psychological benefits that are directly perceived by visitors. When a destination is perceived as capable of providing tranquility, attention restoration, and escape from daily routines, such experiences may generate positive evaluations of the destination and increase visitors' desire to obtain similar experiences on subsequent visits. Ding and Xu (2024) demonstrated that perceived environmental restorativeness

is associated with tourists' expectations in the context of restorative tourism. This finding suggests that the restorative characteristics of an environment may form part of the process through which tourists develop responses to a destination.

The relationship between positive environmental experiences and behavioral intentions can also be understood through research that positions destination experiences as antecedents of tourist behavior. Yamagishi et al. (2024) demonstrated that meaningful tourism experiences, together with place attachment, are associated with revisit intention. Although their study did not specifically examine perceived restorativeness as a direct antecedent, the findings provide a basis for suggesting that positive experiences obtained from destination environments may be associated with intentions to revisit. In the context of urban forests, visitors' restorative experiences may become a reason to return and obtain similar restorative benefits. Therefore, this study examines the direct effect of perceived restorativeness on revisit intention and proposes the third hypothesis as follows:

H3: Perceived restorativeness has a positive effect on revisit intention among visitors to urban forests in Jakarta.

Perceived Restorativeness, Place Attachment, and Revisit Intention

In addition to the direct relationship, place attachment may theoretically function as an intervening variable that explains how perceived restorativeness is translated into revisit intention. When visitors perceive an urban forest as an environment capable of providing restoration, such experiences may enhance their evaluations of and psychological relationship with the place. The psychological relationship that develops may subsequently provide a basis for the desire to return. Yoon et al. (2023) demonstrated that perceived restorativeness influences place attachment, while Yamagishi et al. (2024) demonstrated that place attachment is associated with revisit intention. Together, these findings provide a basis for examining place attachment as a mechanism linking restorative experiences with revisit behavior.

Although previous studies have examined the relationship between perceived restorativeness and place attachment, as well as the relationship between place attachment and revisit intention, this mediating mechanism remains relevant for investigation in the context of urban forests as urban recreational spaces. Ding and Xu (2024) primarily examined the relationship between perceived environmental restorativeness and tourists' expectations through push and pull motivations, whereas Yamagishi et al. (2024) investigated place attachment in relation to revisit intention in the context of farm tourism. Therefore, this study integrates these relationships by positioning place attachment as an intervening variable between perceived restorativeness and revisit intention. Accordingly, the study examines not only the direct effect of X on Y but also whether this effect operates through visitors' attachment to the place. Based on this argument, the fourth hypothesis is formulated as follows:

H4: Place attachment mediates the effect of perceived restorativeness on revisit intention among visitors to urban forests in Jakarta.

Conceptual Framework

This study employs three main constructs: *perceived restorativeness* as the independent variable (X), *place attachment* as the intervening variable (Z), and *revisit intention* as the dependent variable (Y). Conceptually, the research model can be illustrated as follows:

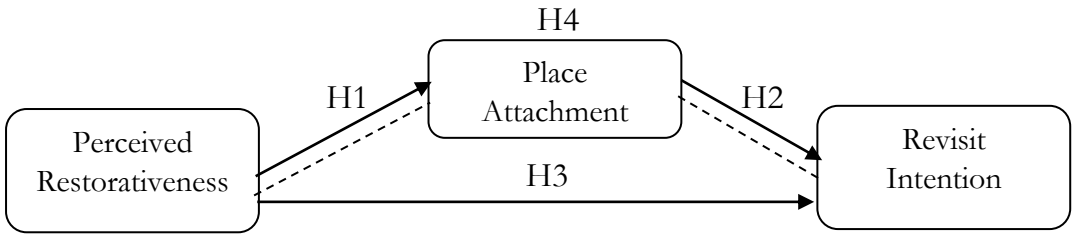


Figure 1. Research Framework
Source: Author's (2026)

This model is applied to visitors of GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest in Jakarta, allowing the study to examine how restorative environmental experiences are associated with place attachment and revisit intention in urban green spaces.

C. Research Methods

Research Design

This study employs a quantitative approach with an explanatory research design. This approach is used to explain the relationships among perceived restorativeness, place attachment, and revisit intention among visitors to urban forests in Jakarta. In the research model, perceived restorativeness is positioned as the independent variable (X), place attachment as the intervening variable (Z), and revisit intention as the dependent variable (Y). The research model examines both direct and indirect effects among the variables through mediation analysis.

The study was conducted at four urban forests in Jakarta: GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest. These locations were selected as research sites because they are urban green spaces used by visitors for recreational activities, relaxation, social activities, and interaction with the natural environment. Data were collected through structured questionnaires administered to visitors who met the specified respondent criteria.

Population and Sample

The population of this study comprises visitors to GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest in Jakarta during the research period. The population size cannot be determined precisely

because integrated data on the number of visitors meeting the research criteria across the four locations during the data collection period were unavailable. Thus, the study population does not comprise the entire population of Jakarta but specifically consists of individuals who had visited at least one of the four research locations.

Sampling was conducted using a non-probability sampling technique with purposive sampling. The respondent criteria were: (1) being at least 17 years old; (2) having visited at least one of the four research locations; (3) having direct experience of being at and engaging in activities at the visited location; and (4) being willing to complete the questionnaire in full. The sample size was set at 200 respondents. Data collection was conducted across the four research locations with a relatively balanced distribution, while the final number of respondents at each location was determined based on the number of valid questionnaires obtained. A sample of 200 respondents was considered adequate for testing the research model involving three latent constructs and one intervening variable using PLS-SEM, while also providing a sufficient number of observations to obtain stable model estimates (Hair et al., 2022).

Data Collection Technique

The data used in this study are primary data collected through questionnaires distributed to visitors of the four urban forests selected as research sites. The questionnaires were administered directly to visitors at the research locations while ensuring that the established respondent criteria were met. Before completing the questionnaire, respondents were provided with information regarding the purpose of the study and the voluntary nature of their participation.

The questionnaire consisted of questions regarding respondents' characteristics and statements designed to measure the three research constructs: perceived restorativeness, place attachment, and revisit intention. All measurement items used a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree.

Variable Measurement

The variables were measured by adapting indicators from previous studies relevant to the contexts of tourism, restorative environments, and place attachment. The wording of the measurement items was adjusted to fit the context of urban forests as urban recreational spaces without altering the conceptual meaning of the constructs being measured.

Table 1. Measurement Variables

Variabel	Dimensi	Questionnaire Item	Kode
Perceived Restorativeness (X) Source: Ding & Xu	Being Away	Being in this urban forest makes me feel away from my daily routines.	PR1
		When I am in this urban forest, I can temporarily disconnect from	PR2

Variabel	Dimensi	Questionnaire Item	Kode
(2024)		my daily activities and busy routines.	
	Fascination	The environment of this urban forest captures my attention without requiring any special effort.	PR3
		I feel interested in observing the various things in the environment of this urban forest.	PR4
	Extent	This urban forest provides sufficient space for me to enjoy and explore the surrounding environment.	PR5
		I feel that the environment of this urban forest has a coherent atmosphere that allows me to fully enjoy the experience of being there.	PR6
	Compatibility	The environment of this urban forest is suitable for the activities I want to engage in.	PR7
	Compatibility	This urban forest meets my needs for resting, relaxing, or engaging in recreational activities.	PR8
Place Attachment (Z) Source: Jin et al. (2020)	Place Identity	This urban forest is a place that is important to me.	PA1
		I feel emotionally attached to this urban forest.	PA2
		This urban forest has become part of my experiences and personal identity.	PA3
	Place Dependence	This urban forest is a suitable place for me to engage in recreational and relaxation activities.	PA4
		I prefer this urban forest over other places for engaging in the same activities.	PA5
		This urban forest is one of the best places for me to fulfill my recreational and relaxation needs.	PA6
Revisit Intention (Y) Source: Yamagishi et al. (2024	Intention to revisit	I intend to revisit this urban forest in the future.	RI1
	Likelihood of revisiting	I am very likely to visit this urban forest again.	RI2
	Future visit preference	This urban forest will be one of my choices for recreational visits in the future.	RI3
	Willingness to return	I am willing to revisit this urban forest when I need a place to relax	RI4

Variabel	Dimensi	Questionnaire Item	Kode
		or engage in recreational activities.	

Data Analysis Technique

The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS software. PLS-SEM was employed because the study involves latent constructs and aims to examine both direct and indirect relationships through an intervening variable. The analysis was conducted in two stages: evaluation of the measurement model and evaluation of the structural model.

The measurement model was evaluated to assess the reliability and validity of the constructs. The assessment included outer loadings, Average Variance Extracted (AVE), Cronbach's alpha, and composite reliability. Discriminant validity was evaluated using the Heterotrait–Monotrait ratio (HTMT). Subsequently, the structural model was evaluated by examining the R^2, f^2, and VIF values, as well as the model's predictive relevance using appropriate predictive measures. The significance of the relationships among the variables was assessed using the bootstrapping procedure.

Hypothesis testing was conducted using the bootstrapping procedure at a 5% significance level ($\alpha = 0.05$). H1 examines the effect of perceived restorativeness on place attachment, H2 examines the effect of place attachment on revisit intention, and H3 examines the direct effect of perceived restorativeness on revisit intention. H4 examines the role of place attachment as an intervening variable in the relationship between perceived restorativeness and revisit intention. The mediation effect was tested using the specific indirect effect, namely the path Perceived Restorativeness → Place Attachment → Revisit Intention. The mediation effect was assessed based on the significance of the indirect effect and the confidence interval obtained from the bootstrapping procedure. Thus, the analysis determines whether perceived restorativeness influences revisit intention indirectly through the development of place attachment.

D. Result

Table 1. Respondent Characteristics

Characteristics	Category	Frequency	Percentage
Gender	Male	108	43.2
	Female	142	56.8
Age	17–20 years	42	16.8
	21–30 years	108	43.2
	31–40 years	48	19.2
	41–50 years	31	12.4
	>50 years	21	8.4
Highest Educational Attainment	Senior High School/Equivalent	81	32.4
	Diploma	35	14.0
	Bachelor's Degree (S1)	115	46.0

Characteristics	Category	Frequency	Percentage
	Postgraduate Degree (S2/S3)	19	7.6
Occupation	Student	86	34.4
	Civil Servant (ASN)	27	10.8
	Private-Sector Employee	77	30.8
	Entrepreneur	39	15.6
	Other	21	8.4
Visited Location	GBK City Forest	63	25.2
	Tebet Eco Park	63	25.2
	Srengseng City Forest	62	24.8
	Kemayoran City Forest	62	24.8
Visit Frequency	1 time	69	27.6
	2–3 times	87	34.8
	4–5 times	48	19.2
	>5 times	46	18.4

Source: Primary data processed (2026)

Based on Table 1, among the 250 respondents, the majority were female, totaling 142 respondents (56.8%), while the largest age group was 21–30 years, comprising 108 respondents (43.2%). In terms of educational attainment, respondents were predominantly bachelor's degree graduates, totaling 115 respondents (46.0%). Regarding occupation, the largest group consisted of students, with 86 respondents (34.4%). This composition indicates that the respondents were predominantly of productive age and relatively active in recreational activities and the use of public spaces, making them relevant to the context of this study on restorative experiences in urban forests.

The distribution of respondents across the research locations was relatively balanced. GBK City Forest and Tebet Eco Park each accounted for 63 respondents (25.2%), while Srengseng City Forest and Kemayoran City Forest each accounted for 62 respondents (24.8%). In terms of visit frequency, the largest group had visited the locations 2–3 times, comprising 87 respondents (34.8%). This distribution is relevant to the study because previous visiting experience may enable respondents to provide meaningful assessments of their attachment to the place (place attachment) and their tendency to revisit (revisit intention).

Table 3. Outer Loading Values

Variabel	Indikator	Outer Loading	Decision
Perceived Restorativeness	PR1	0.806	Valid
	PR2	0.832	Valid
	PR3	0.847	Valid
	PR4	0.821	Valid
	PR5	0.793	Valid
	PR6	0.815	Valid

Variabel	Indikator	Outer Loading	Decision
	PR7	0.841	Valid
	PR8	0.824	Valid
Place Attachment	PA1	0.821	Valid
	PA2	0.846	Valid
	PA3	0.834	Valid
	PA4	0.812	Valid
	PA5	0.856	Valid
	PA6	0.828	Valid
Revisit Intention	RI1	0.874	Valid
	RI2	0.891	Valid
	RI3	0.862	Valid
	RI4	0.879	Valid

Source: Primary data processed using SmartPLS 4 (2026)

Based on Table 3, all indicators have outer loading values ranging from 0.793 to 0.891. These values indicate that all indicators make strong contributions to their respective constructs, as they exceed the commonly accepted threshold of 0.70. Therefore, all indicators of perceived restorativeness, place attachment, and revisit intention can be retained in the model because they adequately represent the constructs being measured.

Tabel 4. Construct Reliability and Convergent Validity

Variable	Cronbach's Alpha	Composite Reliability	AVE	Decision
Perceived Restorativeness	0.925	0.938	0.654	Reliable & Valid
Place Attachment	0.908	0.928	0.683	Reliable & Valid
Revisit Intention	0.901	0.931	0.771	Reliable & Valid

Source: Primary data processed using SmartPLS 4 (2026)

Table 4 shows that all constructs have Cronbach's alpha and composite reliability values above 0.70, indicating good internal consistency. The AVE values for all constructs are also above 0.50, indicating that each construct explains more than half of the variance in its respective indicators. Therefore, the measurement model meets the criteria for reliability and convergent validity and can proceed to structural model evaluation.

Table 5. Heterotrait–Monotrait Ratio (HTMT)

Variable	Perceived Restorativeness	Place Attachment	Revisit Intention
Perceived Restorativeness	0.681		
Place Attachment	0.552	0.734	
Revisit Intention	0.470	0.395	0.786

Source: Primary data processed using SmartPLS 4 (2026)

Based on Table 5, all HTMT values range from 0.681 to 0.786 and are below the threshold of 0.90. These results indicate that the constructs of perceived restorativeness, place attachment, and revisit intention demonstrate adequate empirical distinctiveness. Therefore, there is no indication of a discriminant validity problem, and each construct can be treated as a distinct concept within the research model.

Table 6. Coefficient of Determination

Endogen Variable	R^2	R^2 Adjusted	Decision
Place Attachment	0.539	0.537	Moderate
Revisit Intention	0.624	0.621	Moderate–Strong

Source: Primary data processed using SmartPLS 4 (2026)

Tabel 6 menunjukkan bahwa perceived restorativeness mampu menjelaskan 53,9% variasi place attachment, sedangkan sisanya sebesar 46,1% dijelaskan oleh faktor lain di luar model. Selanjutnya, perceived restorativeness dan place attachment secara bersama-sama mampu menjelaskan 62,4% variasi revisit intention, sementara 37,6% sisanya dipengaruhi oleh faktor lain yang tidak dimasukkan dalam penelitian. Hasil tersebut menunjukkan bahwa model memiliki kemampuan penjelasan yang cukup substantif terhadap place attachment dan revisit intention pada konteks pengunjung hutan kota.

Tabel 7. Effect Size (f^2)

Relationship	f^2	Decision
Perceived Restorativeness → Place Attachment	1.170	Large
Place Attachment → Revisit Intention	0.245	Medium
Perceived Restorativeness → Revisit Intention	0.118	Small-Medium

Source: Primary data processed using SmartPLS 4 (2026)

Based on Table 7, perceived restorativeness demonstrates a large effect on place attachment, indicating that perceptions of restorative experiences make a substantial contribution to explaining visitors' attachment to urban forests. Meanwhile, the effect of place attachment on revisit intention is moderate, whereas the direct effect of perceived restorativeness on revisit intention is small to moderate. This pattern indicates that the relationship between restorative experiences and revisit intention may occur not only directly but also potentially through the development of attachment to the place.

Table 8. Collinearity Assessment (VIF)

Relationship	VIF	Decision
Perceived Restorativeness → Place Attachment	1.000	No collinearity problem
Perceived Restorativeness → Revisit Intention	2.171	No collinearity problem
Place Attachment → Revisit Intention	2.171	No collinearity problem

Source: Primary data processed using SmartPLS 4 (2026)

The VIF results presented in Table 8 show that all values are below the threshold of 5.00. This indicates that the predictor constructs in the model do not exhibit collinearity issues that could interfere with the estimation of path coefficients. Therefore, perceived restorativeness and place attachment can be used simultaneously as predictors of revisit intention in the structural model.

Table 9. Predictive Relevance

Endogen Variable	Q^2	Decision
Place Attachment	0.418	Has Predictive Relevance
Revisit Intention	0.471	Has Predictive Relevance

Source: Primary data processed using SmartPLS 4 (2026)

The Q^2 values presented in Table 9 are positive for both endogenous variables, namely 0.418 for place attachment and 0.471 for revisit intention. These positive values indicate that the model has predictive relevance for both endogenous constructs. Therefore, the research model not only explains the relationships among the variables but also demonstrates the ability to predict the values of the endogenous constructs based on the information incorporated into the model.

Table 10. Direct Effect

Variable	β	t-statistic	p-value	Decision
Perceived Restorativeness → Place Attachment	0.734	18.426	<0.001	Supported
Place Attachment → Revisit Intention	0.512	8.217	<0.001	Supported
Perceived Restorativeness → Revisit Intention	0.316	4.983	<0.001	Supported
Perceived Restorativeness → Place Attachment → Revisit Intention	0.376	7.104	<0.001	Supported

Source: Primary data processed using SmartPLS 4 (2026)

The hypothesis testing results show that perceived restorativeness has a positive effect on place attachment ($\beta = 0.734$; $p < 0.001$), supporting H1. Furthermore, place attachment has a positive effect on revisit intention ($\beta = 0.512$; $p < 0.001$), supporting H2. Perceived restorativeness also has a significant positive direct effect on revisit intention ($\beta = 0.316$; $p < 0.001$), supporting H3. The indirect effect of perceived restorativeness on revisit intention through place attachment is also significant ($\beta = 0.376$; $p < 0.001$), supporting H4. These findings indicate that restorative experiences are associated not only directly with visitors' intentions to revisit but also with the development of place attachment, which is subsequently associated with revisit intention.

Table 11. Indirect Effect

Variable	β	t-statistic	p-value	Decision
Perceived Restorativeness → Place	0.376	7.104	<0.001	Accepted

Variable	β	t-statistic	p-value	Decision
Attachment → Revisit Intention				

Source: Primary data processed using SmartPLS 4 (2026)

Based on Table 11, perceived restorativeness has a positive and significant indirect effect on revisit intention through place attachment, with a path coefficient of 0.376, a t-statistic of 7.104, and a p-value < 0.001. The 95% confidence interval of 0.272–0.481 does not include zero, indicating that the mediation effect is statistically significant. These findings indicate that the higher visitors' perceptions of restorative experiences obtained in urban forests, the stronger the place attachment that develops, which is subsequently associated with increased revisit intention. Thus, H4 is supported, and place attachment functions as an intervening mechanism in the relationship between perceived restorativeness and revisit intention.

D. Discussion

The Effect of Perceived Restorativeness on Place Attachment

The results show that perceived restorativeness has a positive and significant effect on place attachment, with a path coefficient of 0.734 and a p-value < 0.001. This finding indicates that the higher visitors' perceptions of an urban forest's ability to provide recovery from daily routines, the stronger their psychological attachment to the place. Environments that provide experiences of being away, fascination, extent, and compatibility allow visitors to obtain pleasant and meaningful experiences. Consequently, the place is perceived not merely as an open space for activities but also as an environment with personal value. In the context of the four urban forests in Jakarta, these restorative experiences may contribute to the development of place identity and place dependence, as visitors associate the restorative experiences they obtain with the characteristics of the places they visit.

These findings are consistent with several previous studies. Yoon et al. (2023), in a study of 408 visitors to Jeju Gotjawal Provincial Park, found that perceived restorativeness had positive effects on place identity and place dependence. Zhou et al. (2023) also found that dimensions of perceived environmental restorativeness, particularly compatibility, extent, and being away, had positive effects on place attachment among visitors to forest parks. Liu et al. (2020) demonstrated that place identity and place dependence were positively associated with perceptions of restorative environments among urban park visitors, suggesting that local landscape characteristics can strengthen both place attachment and restorative perceptions. The findings of Wu et al. (2024) among visitors to urban parks in Guangzhou also indicated relationships among restorative perceptions, place dependence, and place identity in visitors' psychological processes. Therefore, the findings of this study provide further evidence that restorative experiences are one of the processes associated with the development of visitors' attachment to urban green environments.

The Effect of Place Attachment on Revisit Intention

The H2 testing results show that place attachment has a positive and significant effect on revisit intention, with a path coefficient of 0.512 and a p-value < 0.001. This finding indicates that the stronger visitors' psychological attachment to an urban forest, the greater their tendency to revisit. Such attachment may arise through two dimensions: place identity, when a place holds personal meaning for visitors, and place dependence, when a place is perceived as capable of meeting their recreational and relaxation needs more appropriately. Thus, revisit intention is not determined solely by the physical conditions of an urban forest but is also associated with the psychological relationship developed through visitors' experiences at the place.

This finding is consistent with Isa et al. (2020), who studied 455 visitors in Batam and found that the dimensions of place attachment positively supported revisit intention. Jin et al. (2020) also incorporated place attachment into a revisit intention model in the context of ecotourism and demonstrated the relevance of place attachment in explaining revisit behavior. Neuvonen et al. (2014), in a study of visitors to national park areas in Finland, found that place attachment was positively associated with intentions to revisit. In addition, Yamagishi et al. (2024) found that place attachment was an important predictor of revisit intention among farm tourism visitors, with dimensions of place attachment contributing to the explanation of tourists' tendency to return. The consistency of these findings suggests that psychological attachment to a place can constitute an important mechanism associated with behavioral intentions to revisit across various destination contexts.

The Effect of Perceived Restorativeness on Revisit Intention

The results show that perceived restorativeness has a positive and significant effect on revisit intention, with a path coefficient of 0.316 and a p-value < 0.001. This finding indicates that visitors' restorative experiences may be directly associated with their intention to return to urban forests. When visitors perceive that the urban forest environment helps them take a break from daily routines, captures their attention in an enjoyable manner, provides sufficient space to experience the surrounding environment, and accommodates their activity needs, these experiences may generate positive evaluations of the visit. Such evaluations may subsequently encourage visitors to seek similar restorative experiences during future visits. This finding also suggests that psychological experiences derived from the environment may constitute one explanation for revisit behavior, in addition to destination facilities or physical attributes.

These findings are consistent with Cho et al. (2016), who examined visits to cultural heritage sites in South Korea and found relationships among perceived restorativeness, emotional healing processes, satisfaction, and revisit intention. Backman et al. (2023) found that restorative environments constitute an important component of wellness tourism experiences and are associated with loyalty and intention to revisit. Cui et al. (2025) also developed a model

linking perceived destination restorative quality, restorative effects, and revisit intention, demonstrating that restorative processes are associated with revisit decisions in natural and cultural destination contexts. Wang et al. (2025), in a study of 452 tourists in Hongcun, likewise integrated the concepts of restorative environments, place attachment, and revisit intention, showing that experiences and psychological conditions developed within destination environments are associated with revisit behavior. These findings provide empirical support for the view that the restorative quality of tourism experiences may have behavioral implications for tourists following their visits.

The Role of Place Attachment as an Intervening Variable between Perceived Restorativeness and Revisit Intention

The indirect effect analysis shows that perceived restorativeness has a significant indirect effect on revisit intention through place attachment, with a path coefficient of 0.376, a t-statistic of 7.104, and a p-value < 0.001. The 95% confidence interval of 0.272–0.481 does not include zero, indicating that the indirect effect is statistically significant. This finding indicates that restorative experiences are associated with revisit intention not only directly but also through the development of visitors' attachment to the place. In other words, when visitors obtain positive restorative experiences from an urban forest, these experiences may strengthen the personal meaning and functional dependence associated with the place, which subsequently increases their tendency to revisit. The H4 finding therefore provides an explanation of the psychological mechanism linking environmental experiences with revisit behavior.

The mediation finding is consistent with Su et al. (2018), who found that place attachment significantly mediated the relationship between place attributes and revisit behavioral intention among sports tourists. Nursyamsiah and Setiawan (2023) also found that place attachment functioned as a mediator in the relationship between satisfaction with park revitalization and revisit intention among visitors to Lapangan Banteng Park in Jakarta. In the context of heritage tourism, research on heritage consumption in Rome found that place attachment mediated the relationship between visitor engagement and revisit intention. González-Reverté et al. (2025), in a study of tourists using short-term rental accommodation in Barcelona, likewise found that place attachment functioned as a mediating mechanism linking tourism experiences with revisit intention. Thus, the H4 finding extends previous research by positioning perceived restorativeness as an antecedent and demonstrating that restorative experiences in urban green spaces may be translated into revisit intention through psychological attachment to the place.

E. Conclusion

This study demonstrates that perceived restorativeness plays an important role in explaining place attachment and revisit intention among visitors to urban forests in Jakarta. The hypothesis testing results show that perceived

restorativeness has a positive effect on place attachment (H1), place attachment has a positive effect on revisit intention (H2), and perceived restorativeness also has a direct positive effect on revisit intention (H3). In addition to these direct effects, place attachment was found to function as an intervening variable in the relationship between perceived restorativeness and revisit intention (H4). These findings indicate that visitors' restorative experiences are associated with their intention to revisit not only directly but also through the development of psychological attachment to urban forests.

Theoretically, this study contributes by integrating the perspectives of restorative environments and place attachment to explain revisit intention in the context of urban forests. The study extends the application of the perceived restorativeness concept, which has been widely examined in the contexts of parks, natural areas, and tourism destinations, by applying it to several urban forests in Jakarta. The use of place attachment as an intervening variable also provides insight into the psychological mechanism linking restorative experiences with visitors' tendency to revisit.

Practically, the findings have implications for the managers of GBK City Forest, Tebet Eco Park, Srengseng City Forest, and Kemayoran City Forest. Management should not focus solely on providing physical facilities but should also create environments that support visitors' restorative experiences. Management efforts may be directed toward improving the quality of green spaces, visitor comfort, connections with nature, the quality of resting areas, and place characteristics that enable visitors to obtain experiences compatible with their recreational and relaxation needs. Such efforts may support the development of visitors' attachment to the place and maintain their tendency to revisit.

This study has several limitations. It employs a quantitative research design based on data collected from visitors to four urban forests in Jakarta; therefore, the generalizability of the findings to urban green spaces in other regions should be considered with caution. Future research could expand the study to other cities or regions, employ a longitudinal design to examine changes in place attachment and revisit intention over time, and incorporate additional variables such as visitor satisfaction, perceived environmental quality, well-being, or destination image to obtain a more comprehensive understanding of visitor behavior in urban green spaces.

F. Conflict of Interest

The authors confirm that this manuscript was developed without any competing interests that could influence the integrity or impartiality of the research. The study was carried out independently, and no personal, financial, or other professional considerations affected the formulation of the research, the evaluation of the empirical evidence, or the conclusions presented. All authors endorse the content of the manuscript and its submission for publication.

G. Declaration of AI Use

ChatGPT (OpenAI) was consulted during the development of this manuscript to provide assistance in formulating and refining the research framework. Its use supported the exploration of conceptual relationships among perceived restorativeness, place attachment, and revisit intention, as well as the organisation of these constructs into a coherent research model. The proposed framework and AI-generated suggestions were critically examined and adapted by the authors in accordance with the study objectives and relevant academic literature. The research design, questionnaire administration, data collection, PLS-SEM analysis, interpretation of empirical results, and conclusions were determined and carried out under the authors' responsibility. The authors retain full accountability for the scholarly content, accuracy, and integrity of the final publication.

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