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Servicescape and Customer Engagement Behaviors in Upscale Hotels: The Mediating Role of Place Attachment in a Non-Western Context

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Abstract

Empirical evidence examining how the physical and social features of service environments influence customer connection and engagement remains limited. This research tackles two central questions within a non-Western setting. The first explores how the design and atmosphere of luxury hotels affect guests' engagement behaviors; the second assesses the intermediary function of place attachment in this association. Surveys were administered to 405 visitors staying in Egyptian upscale hotels and resorts, and data were evaluated using structural equation modeling. The outcomes confirm the proposed hypotheses, revealing that place attachment partially transmits the influence of servicescape on engagement. Both direct and indirect pathways from servicescape to engagement were observed. These findings offer meaningful guidance for hospitality managers to enhance guest participation and advocacy through carefully crafted service environments that evoke emotional bonding.

Keywords: Servicescape, Place attachment, Customer engagement behavior, Willingness to suggest (WTS), Word-of-mouth (WOM), Luxury hotels, Resorts

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Introduction

The move toward an experience-based economy has redefined hotels from being simple accommodation providers to spaces offering personal, memorable experiences. Travelers today seek excitement, novelty, and meaning during their stays [1]. Studies suggest that satisfied hotel guests spend up to 140% more than those with neutral experiences [2]. Therefore, modern hospitality brands must cultivate engagement to transform customers into active promoters and advocates [3].

Across the past twenty years, engagement has emerged as a central theme in disciplines such as sociology, psychology, organizational behavior, and management [4, 5]. Within tourism and hospitality, customer engagement—the interactive relationship between individuals and brands—has received growing scholarly focus [4, 6-8]. This notion captures the customer's mental, emotional, and behavioral involvement throughout the service process [5, 8]. In a market where competitors often share similar offerings, engagement emerges as a differentiating factor shaped by service quality, the physical setting, and interpersonal exchanges [9]. Consequently, hospitality organizations must design distinctive servicescapes to strengthen emotional connection and customer trust [8].

The term servicescape gained traction after Bitner's [10] seminal work on the physical service environment. Later, Tombs and McColl-Kennedy [11] broadened it to include social servicescapes. Scholars have shown that both material and social surroundings significantly shape guest experience—especially in hospitality contexts where interaction with space and staff is constant [12, 13]. Because constructing and maintaining such environments demands major financial investment, hotels



must strategically manage their servicescape design [14]. Dedeoglu *et al.* [2] stressed that more research is needed to uncover how these environments drive customer behavior.

To interpret such dynamics, Tubillejas-Andrés *et al.* [12] identified Mehrabian and Russell's [15] Stimulus–Organism–Response (S–O–R) model as a strong conceptual basis. Building on this framework, the present research positions place attachment as a mediating variable between servicescape and engagement behaviors. Loureiro and Sarmento [16] found that tourists who develop emotional bonds with a destination display greater engagement—even during initial visits. Tsai *et al.* [17] similarly argued that combining homelike comfort with hotel amenities enhances attachment and nostalgia. Since Low and Altman's (1992) foundational study on human–place bonding, this construct has been widely discussed [18]. However, empirical work exploring attachment and nostalgia within hospitality remains scarce [17].

Over recent decades, the tourism industry has experienced constant development and accelerated expansion, becoming one of the most dominant and swiftly advancing economic fields worldwide. In 2017, tourism ranked as the third-largest export sector globally, following chemicals and fuels, and exceeding both the automotive and food industries, with total revenues of 1,586.00 billion USD [19]. Egypt's tourism market has similarly expanded to meet the rising global interest in its heritage sites and destinations. In 2018, tourism revenues climbed to 174.10 billion EGP, reflecting a 124% increase compared to 2017 and contributing 15% of Egypt's GDP. Furthermore, the sector represents a major employer, creating around 3.10 million positions, or 9.5% of the national labor force [20]. Recently, Egypt's Central Bank declared that 2019 marked the highest tourism revenue ever recorded at 13.03 billion USD, surpassing 12.50 billion USD in 2010 and 11.60 billion USD in 2018 [21].

The COVID-19 pandemic caused severe disruption to global tourism. In the Middle East, about 4.2 million jobs were lost—equivalent to 62% of all employment in the travel and tourism sector—mainly due to the steep fall in international arrivals, which dropped by 66% and could reach 73% if the crisis persists. Consequently, the region's tourism GDP loss in 2020 was valued at 154.00 billion USD [22]. Presently, the global tourism economy is undergoing a major reset. As the world continues to adapt to pandemic conditions, this period offers a chance to rethink the direction and purpose of tourism [23]. For example, Arbulú *et al.* [24] observed in Spain that fostering local tourism and redirecting outbound travelers can serve as effective strategies to cushion the fall in global demand. In Egypt's case, authorities sought to counteract the pandemic's damage by actively promoting domestic tourism to sustain the hospitality sector.

The current research investigates how servicescape and place attachment influence customer engagement behaviors. It explores the direct and indirect effects of servicescape—via place attachment—on cognitive and affective engagement, as well as two dimensions of behavioral engagement: willingness to suggest (WTS) and word-of-mouth (WOM). The outcomes can guide policymakers, managers, and hospitality professionals in understanding how physical and emotional aspects of servicescapes shape visitor loyalty and interaction. These insights also have implications for future tourism policies in Egypt, emphasizing the need to rethink recovery and long-term growth strategies for tourism and hospitality.

This research enhances the literature in multiple respects. Its primary contribution lies in advancing the understanding of servicescape within consumer behavior, integrating it with place attachment and engagement frameworks. Hightower *et al.* [25] proposed that the association between servicescape and marketing constructs extends beyond a simple two-variable connection. Previous studies have largely analyzed cognitive and emotional mediators, such as attitude and satisfaction [3, 9, 14, 26, 27], or value and image perceptions [2, 28, 29]. Yet, only a few empirical investigations have tested place attachment as a mediator between servicescape and customer engagement behaviors.

Furthermore, this work broadens the understanding of engagement mechanisms driven by both servicescape and attachment by examining four distinct engagement components. Li [29] emphasized the need to explore customer engagement and servicescape together within a unified model. The majority of existing research treats engagement as a single behavioral construct [2, 14, 25–28, 30]. In contrast, this study defines engagement as a multi-faceted concept—including cognitive, affective, and behavioral elements—based on Brodie *et al.* [4] and Hollebeek *et al.* [31]. It also draws from prior findings indicating that non-transactional outcomes such as offering improvement suggestions and sharing positive WOM are among the most common engagement forms [4, 7, 32].

This paper is also the first to analyze servicescape effects on consumer behavior within the Egyptian context. While many studies have explored servicescape influences in developed economies—for instance, in the United States [3, 25–27, 33], Canada [30], Spain [12], and Hong Kong [34]—there is limited research addressing developing markets where tourism and hospitality can significantly boost growth, such as China [13, 14], Turkey [2, 28], Vietnam [9], Indonesia [18], and Iran [35]. To date, there has been no empirical evidence evaluating servicescape's relevance in Egypt.

The rest of this article proceeds as follows: Section 2 reviews the literature; Section 3 discusses the connection between servicescape and engagement, emphasizing the mediating influence of place attachment; Section 4 outlines the research design; Section 5 presents the empirical results; and Section 6 concludes with key discussions, implications, and recommendations for future inquiry.

Literature Review

S-O-R Model

The Stimulus–Organism–Response (S–O–R) framework, first introduced by Mehrabian and Russell [15], explores how surroundings shape consumer reactions. As explained by Lin and Mattila [36], a stimulus (S) represents an environmental trigger that influences the organism (O)—that is, an individual's internal state encompassing attitudes, emotions, and beliefs—thereby leading to a response (R), such as approach or withdrawal. Within hospitality research, this model has become a central theoretical foundation for analyzing how the servicescape influences guest responses and behaviors [2, 3, 10, 36]. In the current investigation, the hotel servicescape is viewed as the stimulus, place attachment represents the organism, and customer engagement functions as the response.

Servicescape

The idea of servicescape originated from Kotler's [37] term atmospherics, which focused on intentionally designing consumption settings that evoke desired emotional experiences. Later, Bitner [10] introduced the concept of servicescape to describe the physical environment where service encounters occur, emphasizing its influence on how both employees and customers behave. Bitner identified three primary dimensions: ambient conditions (e.g., lighting, temperature, air quality, background music), spatial layout and functionality (e.g., interior design, equipment, furnishings), and signs, symbols, and artifacts (e.g., décor, signage, style). Her model established servicescape as a fundamental component shaping behavioral outcomes in consumption contexts.

Building on this, Tombs and McColl-Kennedy [11] highlighted that social interactions within a service space can significantly alter consumers' perceptions. Since then, the social servicescape has received attention equal to the physical one. Dong and Siu [34] described the social dimension as the way customers interpret and experience a service environment through interpersonal exchanges with employees and others, influenced by behavior, image, and cultural values. Within the literature, some scholars conceptualize servicescape as single-dimensional, focusing on either physical [33, 38] or social factors [26, 27], while others approach it as two-dimensional, merging both perspectives [34, 39, 40]. Following recent hospitality studies [29, 41, 42], the present work adopts this integrated, dual-view approach.

Place attachment

The concept of place attachment refers to the affective and psychological relationship between an individual and a specific location [43]. This connection arises through interactions and experiences tied to that environment [44]. According to Yuksel *et al.* [45], place attachment encompasses cognitive, functional, and emotional links between people and meaningful places. The idea of attachment involves affective bonds, whereas place signifies the physical or symbolic space where these bonds form. As attachment intensifies, a person's sense of belonging to that environment strengthens [38].

Scholars such as Loureiro and Sarmento [16], Sun *et al.* [42], and Williams and Vaske [46] divided the construct into two major dimensions: place identity and place dependence. Place identity represents the emotional and symbolic ties individuals hold toward a place, while place dependence refers to how well a location satisfies personal goals and functional needs. These two aspects have been widely examined in tourism and hospitality research [16, 42, 47]. Based on this review, the current study adopts both as core elements of place attachment.

Customer engagement behaviors

In marketing and service management research, customer engagement has been conceptualized from multiple viewpoints. Brodie *et al.* [4] observed that most studies treat it as a multi-dimensional construct, while roughly 40% take a single-dimensional stance. Within the multi-dimensional framework, engagement consists of behavioral and attitudinal dimensions, the latter encompassing cognitive and affective elements [4, 31]. Hollebeek *et al.* [31] provided a comprehensive definition of customer engagement, identifying three components:

- Cognitive engagement—the degree of mental focus and thought directed toward a firm during interaction.
- Affective engagement—the emotional intensity and attachment experienced by the customer.
- Behavioral engagement—the amount of time, effort, and energy invested by the individual during the interaction.

Although many single-dimensional studies emphasize the behavioral side [3, 32], scholars still debate what this term fully entails. Van Doorn *et al.* [32] defined engagement as behavior extending beyond transactions, while Kumar and Pansari [7] described it as value-adding customer actions, either direct (e.g., repeat purchases) or indirect (e.g., referrals, feedback, advocacy).

Within hospitality research, customer engagement continues to be a dominant and evolving topic [48]. Current and future works aim to identify its drivers from a variety of angles. So *et al.* [48] defined engagement as a dynamic interaction between a consumer and a brand that involves cognitive, affective, and behavioral responses beyond purchase acts. In line with this definition, the present study considers all three dimensions but focuses on behavioral engagement through non-transactional outcomes highlighted by Choi and Kandampully [3]—namely, willingness to suggest (WTS) and word-of-mouth (WOM). These two indicators are examined in more detail in the following section.

Willingness to suggest

As mentioned previously, behavioral engagement may manifest through various non-transactional acts performed by customers. The first form includes behaviors aimed at other consumers, such as influencing peers on digital platforms through posts, blogs, product reviews, and referrals. The second form targets the organization itself, where customers share experiences, offer feedback, or recommend operational improvements [7, 32]. Choi and Kandampully [3] referred to this latter type as “Willingness to Suggest (WTS).” Although the terminology varies, similar notions appear in other tourism and hospitality studies. For instance, Li and Wei [29] described WTS as a customer’s tendency to provide both requested and unsolicited feedback that assists hotels in enhancing their services. Likewise, Zhang and Xu [49] interpreted it as actions that directly benefit the destination, such as giving travel advice or reporting visitor experiences.

Encouraging suggestion-making can generate substantial value for companies, as consumers hold distinctive insights derived from their service experiences [50]. Grissemann and Stokburger-Sauer [51] emphasized that engaged customers constitute a vital intangible resource—they are generally more likely to repurchase, endorse the brand, and contribute useful recommendations for refining products and services. Furthermore, Van Dyne *et al.* [52] noted that customers who actively exchange ideas and information, notify firms of service issues, and propose corrective measures play an essential role in supporting organizational advancement and continuous improvement.

Word-of-Mouth

Among the different forms of non-transactional engagement, Word-of-Mouth (WOM) serves as a major communication route for spreading knowledge about offerings [3, 53]. According to Hanks and Line [26] and Yen and Tang [53], WOM operates as a dual-edged mechanism, revealing customers’ attitudes toward a brand. This informal exchange can target both prospective and existing customers [49] and may involve either recommendations or discouragements from purchasing [54]. Within the hospitality field, WOM critically shapes consumer decision-making since many services cannot be accurately evaluated before consumption [55]. When customers are deeply engaged, they often voluntarily share positive experiences, recommending hotels and resorts to friends and family members [41].

Hypotheses Development

Servicescape and customer engagement behaviors

Within service settings, servicescape plays a decisive role in determining customer behavior, satisfaction, and loyalty. For instance, Tran *et al.* [9] revealed that the environmental design of Vietnamese coffee shops significantly strengthened visitors’ satisfaction and loyalty levels. In another context, Tubillejas-Andrés *et al.* [12] demonstrated that a pleasing atmosphere at Spanish opera houses positively influenced attendees’ satisfaction and loyalty. Similarly, Taheri *et al.* [35] found that an appropriately designed environment helped reduce dissatisfaction and misconduct among Iranian travelers. These findings correspond to Hightower *et al.* [25], who identified the servicescape as a key antecedent to consumers’ perceptions and future behavioral patterns.

Recognizing the relationship between servicescape and customer engagement is vital for enhancing service performance and stimulating active consumer participation [29]. Research in hospitality consistently supports this connection, indicating that the physical and social environment substantially affects multiple engagement components. For example, Kim and Moon [30] observed that restaurant patrons display cognitive, emotional, and behavioral responses to environmental stimuli. Islam *et al.* [6] further demonstrated a positive relationship between service quality (physical and staff-related) and engagement among hotel guests. Li [29] reported that customers exposed to enjoyable physical and social settings experience higher cognitive activation, emotional involvement, and behavioral commitment. In the same vein, Li and Wei [41] confirmed that thoughtfully designed environmental features encourage customers to establish deep cognitive, affective, and behavioral relationships with hotels.

The literature also consistently links servicescape to behavioral intentions, showing that it influences several post-consumption actions. For instance, Durna *et al.* [28] established that customers’ perceptions of environmental features directly shape intentions to revisit or engage in positive word-of-mouth. Similar results emerged from restaurant and hotel research by Hanks and Line [26] and Line and Hanks [27], where both physical and social servicescapes were major predictors of revisit and communication intentions (including e-WOM). Peng *et al.* [14] found comparable evidence within integrated resorts, indicating that a favorable environment boosts satisfaction and behavioral intentions to return or recommend. Tran *et al.* [9] also highlighted that servicescape design can either facilitate or restrict the sharing of knowledge between staff and guests. Supporting these findings, Choi and Kandampully [3] confirmed that both physical and social atmospheres substantially contribute to guest satisfaction and positive behavioral outcomes in luxury hotel contexts.

Given this evidence, it is reasonable to expect that an appealing servicescape within premium hotels and resorts enhances overall customer engagement. Thus, the study proposes the following hypotheses:

H1: The servicescape has a positive direct impact on the following components of customer engagement:

- H1a: cognitive engagement,
- H1b: affective engagement,
- H1c: willingness to suggest (WTS), and
- H1d: word-of-mouth (WOM).

Servicescape and place attachment

Environmental psychology explores how people respond to their surroundings and how the built environment influences emotional connections to places [13]. Within hospitality research, recognizing which aspects of the environment shape customers' emotional ties has become essential. A substantial number of studies have examined how the characteristics of the servicescape contribute to the development of such bonds. Line *et al.* [33] observed that when individuals view a servicescape as attractive and empathetic, their sense of connection to that setting intensifies. Isa *et al.* [18] likewise demonstrated that the ambiance and structural qualities of a tourist location enhance feelings of belonging, social closeness, and ownership. Xu and Gursoy [13] further noted that in short-term lodging contexts, the servicescape acts as a key determinant of attachment. More recently, Sun *et al.* [42] found that a pleasant environment strengthens the interaction between staff and visitors, shapes emotions positively, and reinforces attachment to the place.

Given the centrality of servicescape in fostering attachment, the following hypothesis is presented:

- H2: Servicescape has a direct and positive relationship with place attachment.

Place attachment and customer engagement behaviors

Rosenbaum and Montoya [38] described place attachment as "the bonding between a person and a place." This concept entails both identification with physical settings and the interpersonal ties formed within them [47]. Rather *et al.* [8] demonstrated that stronger attachment translates into higher engagement—specifically, the intent to return and to recommend. Loureiro and Sarmento [16] added that emotionally attached visitors tend to share ideas for improvement, encourage others to visit, and participate in positive discussions.

Empirical evidence from hospitality and leisure studies supports that place attachment leads to favorable behavioral engagement. Loureiro [47] showed that satisfaction and preference derived from being in a location significantly enhance the likelihood of returning or recommending it. Similarly, Line *et al.* [33] found that restaurant guests who feel deeply connected are more inclined to talk about the experience. Isa *et al.* [18] reported that attachment dimensions have significant positive effects on customer intentions, while Tsai *et al.* [17] confirmed that in the hotel sector, attachment fosters intentions to revisit and advocate for the establishment.

On the basis of this evidence, we suggest:

- H3: Place attachment exerts a positive influence on (a) cognitive engagement (H3a), (b) affective engagement (H3b), (c) willingness to stay (WTS; H3c), and (d) word-of-mouth (WOM; H3d).

Mediating role of place attachment

Bitner [10] emphasized that both cognitive and affective mechanisms mediate the impact of the servicescape, while Hightower *et al.* [25] proposed analyzing models that extend beyond simple two-variable relationships. Later research has developed this perspective further.

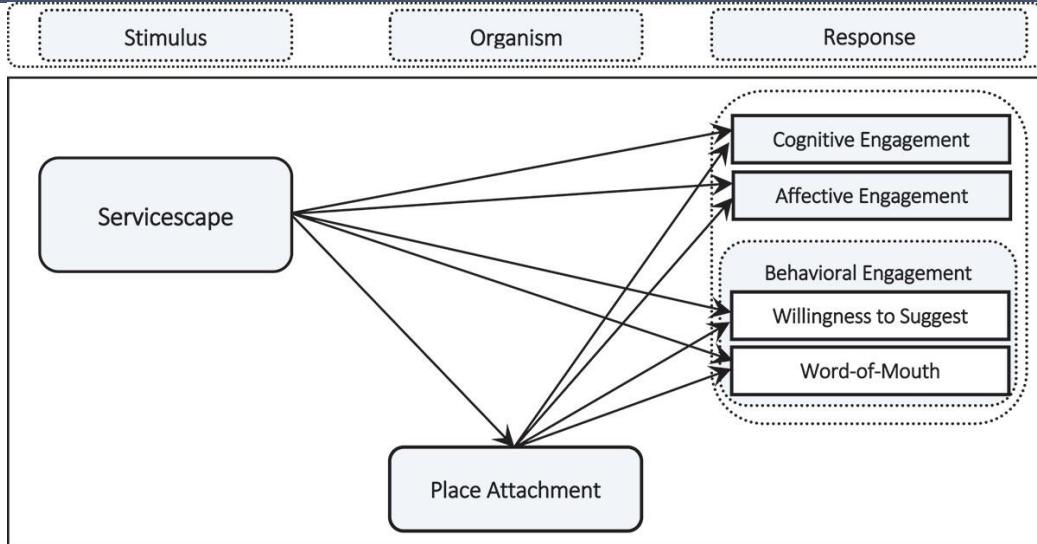
Kim and Moon [30] argued that sensory cues from the environment affect behaviors indirectly through pleasure and perceived service quality. In hotel studies, Durna *et al.* [28] observed that elements of the servicescape influence customer intentions via their perceptions. Dedeoglu *et al.* [2] identified emotional reactions to physical and social cues as mediators between setting and behavior. Line *et al.* [33] concluded that warm and appealing environmental elements evoke positive emotions, producing a sense of comfort and belonging. Tsai *et al.* [17] positioned place attachment as an intermediary between experiential quality and behavioral outcomes. Loureiro and Sarmento [16] noted that guests with strong attachment actively promote the location and provide constructive feedback. Li and Wei [41] added that both physical and social aspects of the servicescape can indirectly prompt customers to recommend a property. Similarly, Isa *et al.* [18] viewed the environment as a stimulus that builds attachment, which subsequently guides behavioral intentions.

Previous work based on the Stimulus–Organism–Response (S–O–R) paradigm reinforces these interactions [2, 3, 10, 42]. Within this model, servicescape functions as the stimulus, place attachment represents the organism, and engagement outcomes are the responses.

Accordingly, to assess whether attachment serves as a bridge between the environment and engagement, we propose:

- H4: Place attachment mediates the relationship between servicescape and (a) cognitive engagement (H4a), (b) affective engagement (H4b), (c) WTS (H4c), and (d) WOM (H4d).

Figure 1 presents the conceptual framework summarizing both direct and indirect links among servicescape, place attachment, and engagement.

**Figure 1.** Conceptual framework

Research Methodology

Data collection and sampling

Egypt, the most heavily populated state in the Middle East and the third largest in Africa, currently counts around 104 million inhabitants. The nation's population expands by nearly 2.28% each year, with approximately 43% living in cities and towns. Urbanization progresses at a rate of about 1.86% annually. Despite the worldwide downturn in 2020, Egypt still maintained a positive economic expansion, and its GDP was anticipated to reach 400 billion USD in 2021 [56].

To determine the number of respondents, Cochran's formula for an infinite population was employed:

$$SS = [Z^2 p (1 - p)] / C^2 [57].$$

The parameters used were a confidence interval (C) of 0.05, a 95% confidence level ($z = 1.96$), and a population proportion (p) of 0.5. According to these values, a total of 385 valid responses would provide 95% certainty that the true values lie within $\pm 5\%$ of the sample statistics.

Following Choi and Kandampully [3] and Line and Hanks [27], the research concentrated on high-end hotels and resorts, as such settings allow better examination of the study's variables. Because Egypt lacks a formal registry of hotel guests from the last three years, drawing a direct random sample was unfeasible. Therefore, non-probability (convenience) sampling was selected, emphasizing participants' availability, location, and willingness to respond [58].

Data collection was conducted using an online Google Form, and the questionnaire link was shared on Facebook. This medium was suitable because (1) it can reach a demographically varied population, (2) hotel clients are geographically dispersed, and (3) there is no official list of previous visitors. To maintain relevance, only individuals who had stayed in an upscale hotel or resort within the past three years were invited to respond.

The procedure began with convenience sampling but gradually transitioned into snowball sampling as participants referred others. Each survey required about 10–15 minutes to complete. Out of 411 total responses, 6 were removed due to being multivariate outliers, resulting in 405 usable questionnaires, an amount sufficient for statistical evaluation. **Table 1** summarizes the demographic composition of respondents.

Table 1. Respondent characteristics

Variable	Category	Frequency	Percentage (%)
Gender	Male	136	34
	Female	269	66
Age	18–24	103	25
	25–34	117	29
	35–44	151	37
	45–54	24	6
	55 or above	10	3
Education	High/technical school	33	8
	Junior college	15	4
	Bachelor's degree	192	47
	Postgraduate degree	148	37
	Other	17	4
Occupation	Government official	132	33
	Private official	62	15

	Self-employment	41	10
	Retired	3	1
	Not employed	86	21
	Student	81	20
Repeat visit over the last 3 years	New customer: 1 time	160	40
	Repeat customer: 2–3 times	181	45
	Repeat customer: 4–6 times	38	9
	Repeat customer: More than 6 times	26	6
Number of nights stayed per visit	1 night	28	7
	2 nights	102	25
	3 nights	133	33
	4 nights	82	20
	More than 4 nights	60	15
Reason for the visit	Leisure and recreation	300	74
	Visiting relatives and friends	15	4
	Business reasons	50	12
	Attending culture or sports events	17	4
	Other	23	6

As displayed in **Table 1**, 66% of participants were female, while 34% were male, proportions comparable to earlier findings (e.g., Li & Wei [41]; Taheri *et al.* [35]; Xu & Gursoy [13]). In terms of age, the largest segment (37%) fell between 35–44 years, followed by 29% aged 25–34, and 25% aged 18–24, aligning with previous research (e.g., Isa *et al.* [18]; Line & Hanks [27]).

Regarding education level, 84% possessed at least a bachelor's degree, similar to previous results (e.g., Tubillejas-Andrés *et al.* [12]; Line & Hanks [27]). Around 85% of respondents had stayed in an upscale accommodation three times or fewer over the previous three years, with 40% reporting one-time visits. For length of stay, the most frequent duration was three nights (33%), followed by two nights (25%). Most visitors spent three nights or less, consistent with Choi and Kandampully [3], who found over 80% of stays of similar duration. Likewise, Li and Wei [41] observed that 75% of guests stayed one or two nights. Roughly three-quarters of all participants stated leisure and recreation as their main purpose of travel, reaffirming the essential role of environmental and recreational features in stimulating positive customer attitudes, similar to Choi and Kandampully [3].

Questionnaire and measures

The research employed an online survey to gather information. The instrument consisted of items measuring servicescape, place attachment, and customer engagement, which included cognitive, affective, and behavioral components (specifically WTS and WOM). All variables were rated through multi-item 5-point Likert scales. Demographic data covered gender, age, education, and occupation, along with questions about repeat visits, number of nights, and trip motivation.

Measurement items were drawn from prior validated studies to preserve content accuracy. The servicescape construct utilized the Dong and Siu [34] instrument, recognized for its reliability across multiple investigations (e.g., Dedeoglu *et al.* [2]; Durna *et al.* [28]; Li [29]; Meng & Choi [40]). Place attachment was assessed using the Williams and Vaske [46] framework, also applied by Loureiro [47], Rather *et al.* [8] and others.

Cognitive and emotional engagement dimensions were measured with the Hollebeek *et al.* [31] scale, extensively used in Islam *et al.* [6], Li [29] and Li & Wei [41]. The behavioral engagement component consisted of two indicators:

1. Willingness to share (WTS), adapted from Choi and Kandampully [3] and Van Doorn *et al.* [32], as well as Kumar and Pansari's [7] framework on knowledge sharing, applied in Behnam *et al.* [59] and Loureiro & Sarmento [16].
2. Word-of-mouth (WOM), assessed through the Zeithaml *et al.* [60] measure, which has been implemented in several studies (e.g., Dedeoglu *et al.* [2]; Durna *et al.* [28]; Hanks & Line [26]; Line & Hanks [27]).

Results

In structural equation modeling, the analysis followed two primary phases to assess the conceptual framework. Initially, the measurement model was applied to verify the consistency and accuracy of the constructs used in the study. Subsequently, the structural model was employed to assess model adequacy and hypothesis validation [61].

Preliminary and descriptive analysis

A confirmatory factor analysis (CFA) was carried out, and the outcomes presented in **Table 2** revealed that the items SC1, SC6, SC10, and SC21 were excluded from the servicescape dimension, and PA10 was dropped from place attachment, as their factor loadings fell below 0.6. The loadings were evaluated to determine indicator reliability, and all retained items met the required level of 0.6 or above, confirming the model's reliability criteria [62].

Cronbach's alpha was computed to test internal reliability, and as shown in **Table 2**, all coefficients were above 0.70, satisfying standard guidelines [62]. Descriptive data, including means and standard deviations, are also detailed in the same table. The second-order constructs had mean/SD values as follows: servicescape (4.356 / 0.511) and place attachment (3.819 / 0.687). The first-order constructs recorded: cognitive engagement (3.45 / 0.871), affective engagement (4.090 / 0.651), willingness to suggest (4.140 / 0.623), and word-of-mouth (4.320 / 0.617).

Table 2. Confirmatory factor analysis

Constructs and Items	Code	Loading	Mean	S.D.	Cronbach's Alpha
Servicescape (SC)			4.356	0.511	0.943
The hotel has a pleasant aroma.	SC2	0.652	4.50	0.657	
The hotel's atmosphere is lively and upbeat.	SC3	0.600	4.44	0.692	
The hotel is spotless.	SC4	0.725	4.57	0.639	
The hotel features modern equipment.	SC5	0.725	4.28	0.763	
The signage in the hotel is useful for me.	SC7	0.615	4.26	0.710	
The facility layout is convenient to navigate.	SC8	0.704	4.34	0.680	
The hotel's color palette is appealing.	SC9	0.667	4.34	0.695	
The facilities are well-maintained.	SC11	0.774	4.22	0.815	
Overall, the physical surroundings delight me.	SC12	0.675	4.31	0.746	
The hotel staff are eager to assist.	SC13	0.786	4.48	0.647	
The hotel staff are courteous and amicable.	SC14	0.789	4.52	0.621	
The hotel staff offer individualized attention to guests.	SC15	0.714	4.34	0.731	
The hotel staff are enthusiastic.	SC16	0.748	4.23	0.754	
The staff offered reassurance and comfort when I felt restless due to waiting for service.	SC17	0.765	4.37	0.720	
The staff are tidy and elegantly attired.	SC18	0.655	4.29	0.736	
The staff appear appealing.	SC19	0.670	4.37	0.659	
The hotel's symbols are charming.	SC20	0.700	4.19	0.708	
Place Attachment (PA)			3.819	0.687	0.938
I feel as though this hotel is part of my identity.	PA1	0.674	3.67	0.867	
This hotel holds great significance for me.	PA2	0.713	4.10	0.766	
I strongly identify with this hotel.	PA3	0.738	4.05	0.756	
I have a strong attachment to this hotel.	PA4	0.826	3.92	0.817	
Staying at this hotel reveals much about my personality.	PA5	0.762	3.77	0.854	
This hotel is very meaningful to me.	PA6	0.834	3.76	0.909	
This hotel is ideal for my preferred activities.	PA7	0.785	3.88	0.840	
No other hotel matches this one.	PA8	0.797	3.51	0.960	
Visiting this hotel provides greater satisfaction than any other.	PA9	0.822	3.90	0.831	
I wouldn't replace this hotel's experience with any other.	PA11	0.798	3.63	0.958	
Cognitive Engagement (CE)			3.450	0.871	0.818
Staying at the hotel prompts me to reflect on it.	CE1	0.764	3.38	1.055	
I frequently think about the hotel during my stay.	CE2	0.836	3.35	1.036	
Staying at the hotel sparks my curiosity to learn more about the brand.	CE3	0.815	3.62	0.959	
Affective Engagement (AE)			4.090	0.651	0.872
I experience very positive emotions when staying at the hotel.	AE1	0.827	4.04	0.780	
Staying at the hotel brings me joy.	AE2	0.834	4.22	0.718	
I feel great when staying at the hotel.	AE3	0.781	4.27	0.680	
I take pride in staying at the hotel.	AE4	0.737	3.82	0.872	
Willingness to Suggest (WTS)			4.140	0.623	0.855
If opportunity arises, I am ready to share feedback on my hotel experiences.	WTS1	0.785	4.23	0.632	
If opportunity arises, I am ready to offer ideas for enhancing the hotel's service quality.	WTS2	0.772	4.20	0.710	
If opportunity arises, I am ready to suggest new products and services for the hotel.	WTS3	0.665	4.14	0.764	
If opportunity arises, I am ready to propose developments for new products and services at the hotel.	WTS4	0.681	3.97	0.861	
Word-of-Mouth (WOM)			4.320	0.617	0.920
I would speak positively about this hotel to others.	WOM1	0.877	4.34	0.632	
I would advise this hotel to anyone seeking my recommendation.	WOM2	0.912	4.30	0.675	
I would urge friends and family to visit (stay at) this hotel.	WOM3	0.888	4.32	0.684	

In this model, servicescape was defined as a second-order formative variable, following prior frameworks [9, 12, 30]. Similarly, place attachment was modeled as a formative second-order construct, consistent with previous studies [7, 8, 16, 17, 33, 42, 47]. The four customer engagement components were considered latent reflective constructs, following earlier research approaches [2, 3, 16, 26, 28, 29, 41].

Measurement model validation

The survey's psychometric soundness was confirmed through reliability and validity checks. As per Nunnally and Bernstein [63], construct reliability involves composite reliability (CR) and Cronbach's alpha. **Table 2** demonstrates that all alpha values surpassed 0.70, while **Table 3** confirms that CR values also exceeded 0.70.

Table 3. Composite reliability and convergent validity

	Composite reliability	AVE
Servicescape (SC)	0.944	0.501
Place Attachment (PA)	0.938	0.603
Cognitive Engagement (CE)	0.847	0.649
Affective Engagement (AE)	0.873	0.633
Willingness to Suggest (WTS)	0.817	0.530
Word-of-Mouth (WOM)	0.921	0.796

Following Henseler *et al.* [64], convergent and discriminant validity were examined. Average Variance Extracted (AVE) served as the convergent validity metric [62]. All AVE values listed in **Table 3** were above 0.50, indicating satisfactory convergence. For every construct, CR > AVE > 0.50, alongside significant factor loadings (**Table 2**), affirming convergent validity [33].

Discriminant validity was assessed via the Fornell–Larcker criterion [65]. In **Table 4**, the square root of each AVE exceeded its correlations with other latent variables, verifying discriminant validity. Overall, the measurement model demonstrated robust reliability and validity across all constructs.

Table 4. Correlation matrix and discriminant validity

	SC	PA	CE	AE	WTS	WOM
Servicescape (SC)	0.705					
Place Attachment (PA)	0.591	0.777				
Cognitive Engagement (CE)	0.319	0.701	0.806			
Affective Engagement (AE)	0.534	0.776	0.784	0.796		
Willingness to Suggest (WTS)	0.429	0.553	0.611	0.691	0.728	
Word-of-Mouth (WOM)	0.487	0.646	0.522	0.778	0.661	0.892

Note: The square roots of AVE are the diagonal elements. Other elements represent the simple bivariate correlations between the constructs.

Structural model and hypotheses testing

To test the hypotheses, Structural Equation Modeling (SEM) and bootstrapping were performed using AMOS 23.0. Path coefficients are shown in **Table 5**. Model fit was evaluated using several indices — Chi-square (χ^2), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) [66].

Table 5. Path coefficients of the structural model

Direct Effects					
Direct Path	Coefficient	p-Value	Results	Supported/Not Supported	
H1:					
H1a: SC → CE	-0.100	0.052		Not Supported	
H1b: SC → AE	0.126	0.007**		Supported	
H1c: SC → WTS	0.152	0.012*		Supported	
H1d: SC → WOM	0.144	0.008**		Supported	
H2:					
SC → PA	0.568	0.001**		Supported	
H3:					
H3a: PA → CE	0.716	0.001**		Supported	
H3b: PA → AE	0.653	0.001**		Supported	
H3c: PA → WTS	0.384	0.001**		Supported	
H3d: PA → WOM	0.534	0.001**		Supported	
Indirect Effects					
Indirect Path	Coefficient	p-Value	LL 95% CI	UL 95% CI	Results
H4:					Mediation
H4a: SC → PA → CE	0.407	0.001**	0.309	0.502	Full mediation
H4b: SC → PA → AE	0.371	0.001**	0.276	0.459	Partial mediation
H4c: SC → PA → WTS	0.218	0.001**	0.147	0.292	Partial mediation

H4d: SC → PA → WOM	0.304	0.001**	0.228	0.388	Partial mediation
Note: *p < .01; p < .05					

SEM outcomes were as follows: $\chi^2/df = 1530.52/713 = 2.147$, $p < .001$, which is an acceptable ratio (typically between 2.0–5.0). Model indices indicated good fit: CFI = 0.917, IFI = 0.918, TLI = 0.904, all above 0.90, and RMSEA = 0.061, within the acceptable range (≤ 0.07). Collectively, these metrics confirm a satisfactory model fit [62, 66, 67].

As shown in **Table 5**, servicescape (SC) had a significant positive impact on most customer engagement behaviors, partially supporting H1. Among the four engagement types, cognitive engagement (CE) was not significantly associated with SC ($\beta = -0.100$, $p = 0.052$); thus, H1a was not confirmed. This opposes Bitner's [10] and Li's [29] observations, suggesting that a pleasant service environment stimulates cognitive activity.

However, SC positively influenced affective engagement (AE) ($\beta = 0.126$, $p < .01$), supporting H1b, consistent with earlier research [29, 30]. Similarly, willingness to suggest (WTS) was significantly affected ($\beta = 0.152$, $p < .05$), validating H1c. Word-of-mouth (WOM) also displayed a strong positive link ($\beta = 0.144$, $p < .01$), supporting H1d. These findings align with prior literature emphasizing the influence of the physical environment on customer behaviors [26, 27, 29, 30].

A positive and statistically significant link was detected between servicescape (SC) and place attachment (PA), with a path coefficient of $\beta = 0.568$ ($p < .01$), verifying H2. This outcome agrees with earlier findings in the hospitality literature (e.g., Line *et al.* [33]; Sun *et al.* [42]; Xu & Gursoy [13]). Consistent with H3, PA showed a noteworthy impact on all dimensions of customer engagement, with each pathway reaching significance. Specifically, the effect of PA on cognitive engagement (CE) was $\beta = 0.716$ ($p < .01$), supporting H3a, while the relationship between PA and affective engagement (AE) was also significant and positive ($\beta = 0.653$, $p < .01$), confirming H3b. These outcomes support previous research that underscores the connection between place attachment and engagement behavior (e.g., Rather *et al.* [8]). Moreover, PA demonstrated significant positive links with willingness to suggest (WTS) ($\beta = 0.384$, $p < .01$) and word-of-mouth (WOM) ($\beta = 0.534$, $p < .01$), lending support to H3c and H3d. Overall, the results are consistent with prior studies suggesting that place attachment plays a key role in shaping behavioral engagement (e.g., Loureiro [47]; Loureiro & Sarmento [16]; Rather *et al.* [8]; Tsai *et al.* [17]).

The bootstrapping procedure proposed by Jose [68] was employed to examine mediation, using 2,000 samples and a 95% confidence level. The bias-corrected bootstrap method introduced by Demming *et al.* [69] was chosen, as it performs well for large data sets, adjusts confidence interval bias, and is considered the most reliable approach for mediation testing. The findings summarized in **Table 4** confirm that servicescape indirectly affects all engagement dimensions via place attachment, thus verifying H4.

Mediating strength was estimated using the Variance Accounted For (VAF) metric [70], which represents the proportion of the total effect due to the mediator. A VAF above 80% signals full mediation, below 20% means no mediation, and between 20–80% denotes partial mediation.

For example, PA exhibited a complete mediation effect between SC and CE, confirming H4a. The total, direct, and indirect effects were 0.307, -0.100, and 0.407 (95% CI: 0.309–0.502), respectively. This indicates that PA mediated 132.57% (0.407/0.307) of the overall influence, showing a full mediation process between SC and CE.

Likewise, PA exerted a partial mediating effect in the associations between SC and AE, WTS, and WOM, supporting H4b–H4d. For AE, total, direct, and indirect effects were 0.497, 0.126, and 0.371 (95% CI: 0.276–0.459), leading to a VAF of 74.64% (0.371/0.497). For WTS, the corresponding coefficients were 0.370, 0.152, and 0.218 (95% CI: 0.147–0.292), yielding a VAF of 58.91% (0.218/0.370). For WOM, the total, direct, and indirect effects were 0.448, 0.144, and 0.304 (95% CI: 0.228–0.388), resulting in a VAF of 67.85% (0.304/0.448). Therefore, AE, WTS, and WOM are influenced through both direct and mediated effects of servicescape via place attachment.

The results demonstrate that place attachment significantly strengthens the pathway through which servicescape influences customer engagement. This aligns with Xu and Gursoy [13], who highlighted that place attachment mediates the connection between environmental design and visitors' recommendation intentions. The findings also echo earlier research emphasizing that affective and cognitive mechanisms act as intermediaries between environmental cues and customer experience outcomes. For instance, Hightower *et al.* [25] noted that servicescape affects behavioral outcomes through intervening psychological constructs, and Isa *et al.* [18] showed that environmental elements influence place attachment and subsequent revisit intentions.

Discussion and Conclusions

Discussion

The conceptual model was developed to explore how servicescape influences customer engagement through place attachment within Egypt's luxury hotel and resort industry.

The findings verify that servicescape has a positive effect on engagement outcomes. Specifically, significant direct effects were observed on affective engagement and the behavioral dimensions (WTS and WOM), whereas the cognitive dimension did not exhibit a direct link. This pattern implies that guests who perceive appealing physical and ambient conditions tend to respond emotionally and behaviorally—by recommending the property or offering suggestions—rather than through cognitive evaluation. These observations support Li and Wei [41], who emphasized that hotel design plays a pivotal role in encouraging guest engagement. Likewise, Hanks and Line [26] and Line and Hanks [27] reported that the environmental, physical, and social dimensions of a hotel significantly affect post-stay perceptions and behaviors.

Additionally, place attachment emerged as a powerful determinant of engagement. Comprising place identity and place dependence, it fosters emotional connection and belongingness, motivating guests to share feedback and positive referrals. This finding corroborates Loureiro and Sarmento [16], who observed that travelers who experience emotional or social identification with a location are more likely to develop deeper engagement and advocacy behaviors.

The proposed model demonstrates that place attachment functions as a mediating factor between servicescape and customer engagement behaviors. The evidence suggests that when guests perceive the hotel's servicescape positively, they form stronger emotional bonds with the property and are consequently more inclined to engage in various behaviors—particularly cognitive engagement. Such attachment manifests through identification with and reliance on the hotel, fostering enhanced engagement responses. Drawing from attachment theory, this emotional connection stimulates favorable cognitive evaluations, which, in turn, encourage proactive behavioral and interactive responses [16].

In a related context, Choi and Kandampully [3] found that although satisfied guests are likely to share positive feedback about a hotel, they may be less willing to offer suggestions for improvement. This observation raises an interesting question regarding the post-consumption patterns of satisfied, attached customers. The present findings indicate that visitors react to both physical environments and social interactions in proportion to their level of place attachment. Customers who are emotionally invested and aim to sustain long-term connections with the destination tend to exhibit stronger willingness-to-suggest (WTS) behaviors. The descriptive results also show that servicescape achieved the highest mean score (4.356), implying that respondents viewed the environment as pleasant and felt appreciated, respected, and well cared for.

In summary, the results reveal that servicescape directly shapes place attachment and customer engagement, while place attachment plays a pivotal mediating role in strengthening engagement outcomes. Overall, place attachment mediates the link between servicescape and the multiple engagement dimensions, including two dominant behavioral aspects.

Theoretical implications

This research contributes several theoretical insights. First, it addresses the call by Al Halbusi *et al.* [39] and Li and Wei [41] to conceptualize servicescape as a two-dimensional construct—encompassing both physical and social components. Such an approach provides a more comprehensive perspective on the consumption setting and offers improved predictive capacity for consumer responses. Moreover, this study adds empirical depth to servicescape scholarship by examining how these physical and social dimensions jointly influence place attachment and customer engagement behaviors in hotel contexts.

Second, the study expands the theoretical understanding of how servicescape elements nurture customers' sense of belonging. Prior research [33, 71] largely concentrated on the physical aspects of the environment while neglecting the social surroundings. In contrast, the present analysis highlights that both dimensions shape emotional and perceptual reactions within consumers.

Third, this research advances customer engagement literature by incorporating its cognitive, affective, and behavioral aspects. The behavioral facet was examined through two non-transactional behaviors. Unlike previous studies [26-28, 33], which primarily explored customer-to-customer interactions, the present study investigates both customer-to-customer (WOM) and customer-to-firm (WTS) engagement types. These findings complement Choi and Kandampully's [3] framework, which underscores customers' improvement-oriented feedback toward hotels.

Finally, this research stands among the few that empirically validate place attachment as a mediating variable between servicescape features and engagement behaviors. While Xu and Gursoy [13] focused on its role between servicescape and recommendation intentions, the current study broadens the scope by examining how place attachment channels the effects of servicescape across multiple engagement outcomes.

Practical implications

From a managerial perspective, the results provide several actionable recommendations for the hospitality sector. The evidence confirms that an effective servicescape—encompassing both physical and social cues—positively affects place attachment and diverse engagement behaviors. Hence, hotels should design appealing physical environments characterized by a welcoming ambiance, elegant design, modern and well-maintained facilities, pleasant aromas, harmonious background music, appealing color schemes, and tastefully furnished rooms.

For the social servicescape, managers should ensure that front-line staff are well trained in courteous communication, empathetic service, and a guest-oriented mindset. Cultivating a service culture that prioritizes guest comfort and emotional

satisfaction can transform the hotel environment into a meaningful and memorable experience that fosters belonging and promotes active engagement.

Additionally, results show that guests who feel deeply attached to a hotel demonstrate higher levels of behavioral engagement—such as sharing positive reviews and offering constructive feedback. Therefore, marketing teams should identify these highly attached guests through targeted surveys and encourage them to post about the hotel's physical and social environments. Engaged customers can serve as authentic advocates by sharing their experiences on social media platforms, thereby motivating potential visitors.

Managers can further promote engagement by inviting suggestions for improvement and rewarding valuable contributions—for instance, offering discounts or complimentary stays for the best ideas. Hotels could also motivate guests to share official web pages or social media posts (on Facebook, Instagram, Twitter) through short-term promotional contests that reward users who reach specific numbers of likes or shares. Finally, providing incentives for those who spread positive word-of-mouth (WOM)—such as discounts or special offers—can strengthen loyalty while simultaneously attracting new clientele.

Limitations and future directions

This research entails several limitations that simultaneously point to directions for future inquiry. First, the study was carried out within a single national context, which may restrict the generalizability of the findings. Subsequent research could incorporate cross-cultural or multi-country samples to better capture the moderating effects of cultural differences.

Second, as the proposed framework was validated only among upscale hotels, the results might not be fully applicable to other hotel categories. Third, since the investigation was limited to the hotel industry, future scholars could extend the model to alternative service contexts, such as universities (private or public), service stations, gyms, cafés, or tourism sites.

Fourth, this study utilized cross-sectional data, which limits causal inference; therefore, a longitudinal research design is recommended for future work. Fifth, the use of a convenience sampling technique may pose representativeness issues; thus, employing random sampling could improve the reliability of subsequent findings.

Sixth, future investigations may also analyze the link between hotel servicescape and additional constructs, such as customers' perceived experience, image perception, or citizenship behavior. Finally, upcoming studies might consider testing the moderating influence of variables, including purpose of visit, demographic traits, visit frequency, and duration of stay, to provide more nuanced insights.

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