

RESEARCH ARTICLE

A Competitive Comparison of Personal and Historical Nostalgia: Influencing Visitor Satisfaction and Support Intention through Perceived Authenticity and Place Attachment

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ABSTRACT

This study validates a "Dual-Path Nostalgia Model" at Kaohsiung's Qishan Old Street, comparing the effects of personal and historical nostalgia on satisfaction and support, mediated by perceived authenticity and place attachment. Based on 743 valid samples and analyzed via SEM, the model demonstrated an excellent fit.

Results indicate Personal Nostalgia is the dominant pathway, significantly enhancing both Perceived Authenticity and Place Attachment. Historical Nostalgia had a comparatively weak influence. Perceived Authenticity and Place Attachment positively affected Visitor Satisfaction, while both Satisfaction and Place Attachment drove Willingness to Support.

This study clarifies that existential authenticity (from personal memory) is a stronger driver of visitor evaluations than objective history. Managerially, prioritizing sensory cues that trigger personal memories, supplemented by historical narratives, is recommended. Avoiding "nostalgia betrayal" by aligning experiences with memories is crucial.

Keywords: Personal Nostalgia; Historical Nostalgia; Perceived Authenticity; Place Attachment; Visitor Satisfaction; Willingness to Support; Structural Equation Modeling (SEM); Qishan Old Street

1. Introduction

In the context of the rapid transformation of global heritage tourism, "historical streets," as living heritage sites that carry both daily life and historical narratives, are not merely collections of architecture and objects. They are places where emotions are evoked and meanings are reproduced. Visitors walking through them are often drawn by two forms of nostalgia simultaneously: one is a longing for an unexperienced "golden age" (Historical Nostalgia), and the other is the warmth and scent from personal memories (Personal Nostalgia). However, how these two emotional currents are respectively transformed into overall evaluations and behavioral commitments via "Perceived Authenticity" and "Place Attachment" is not adequately explained by existing research. This has also led to a strategic tug-of-war in management practice between "recreating history" and "evoking memory."

Based on this, this study, using Qishan Old Street in Kaohsiung as its empirical site, proposes and tests a

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"Dual-Path Nostalgia Model." It places Personal Nostalgia and Historical Nostalgia within the same structural framework for a competitive comparison, aiming to clarify the differentiated mechanisms through which they influence "Visitor Satisfaction" and "Willingness to Support" via Perceived Authenticity and Place Attachment. The study hopes to theoretically respond to the long-standing "authenticity vs. fantasy" debate and, on a practical level, provide precise management strategies that integrate "memory cue curation" with "historical narrative reinforcement," assisting historical streets in achieving a dynamic balance between preservation, experience, and sustainability.

1.1. Research background

In the global tourism landscape, Heritage Tourism has become a prominent field. Its core is no longer just the static preservation of assets, but how to manage and deepen the visitor experience ^[1, 2]. In Taiwan, "historical streets" (Lao Jie), which carry collective memory and local stories, are key arenas for this trend. Visitors frequent historical streets seeking an emotional resonance that connects the past with the present, making "Nostalgia" a central variable for understanding the historical street experience ^[3].

However, in the unique setting of a historical street, "nostalgia" is not a singular emotion. As established by Stern ^[4] seminal research, nostalgia must be distinguished into two distinct types:

- Historical Nostalgia : A longing for a "golden age" not personally experienced.
- Personal Nostalgia : A reminiscence of memories stemming from one's own real experiences.

Kaohsiung's "Qishan Old Street" provides an excellent setting for examining this dual concept: its historical narrative as the "Banana Kingdom" strongly evokes visitors' "Historical Nostalgia." Simultaneously, as a shared memory across generations and a popular family outing destination in southern Taiwan, it also carries a significant amount of "Personal Nostalgia."

When these two nostalgic emotions are triggered, visitors naturally "evaluate" what they see and hear. The academic community generally agrees that the core of this evaluation process is "Perceived Authenticity"^[5, 6], which is used to judge whether the current experience meets their expectations of the past (whether real or imagined). This series of psychological processes—the triggering of nostalgia and the assessment of authenticity—is regarded as a key antecedent in shaping the emotional bond between visitors and the place, i.e., "Place Attachment"^[7].

Ultimately, these complex psychological constructs converge to determine the visitor's summative evaluation, "Visitor Satisfaction" ^[8], and further influence their final "Willingness to Support" ^[9]; Wang, Xie, Zhang, Huang, Yang and Zhang ^[10] Therefore, clarifying the intricate causal mechanisms among these six key variables—Personal Nostalgia, Historical Nostalgia, Perceived Authenticity, Place Attachment, Visitor Satisfaction, and Willingness to Support—has become an unavoidable core issue in heritage tourism research.

1.2. Research motivation and problem

Although recent studies ^[10, 11] have confirmed the necessity of this dichotomy and verified the impact of nostalgia on place attachment and support behavior, research in the "historical street" context has rarely placed both types of nostalgia into a single model for a "competitive comparison" to clarify their unique psychological pathways.

The path of personal nostalgia seems more intuitive: it is likely an "Emotion-Driven" path that directly and strongly enhances visitors' "Place Attachment" ^[10]. Concurrently, the psychological mechanism of historical nostalgia presents an unresolved "theoretical puzzle" in academia, especially in its relationship with "Perceived Authenticity."

On one hand, some scholars argue that nostalgia-seeking tourists become stricter "authenticity-seekers," carefully evaluating whether the site is true to its historical context [6, 12]. On the other hand, foundational theories in tourism also suggest that what visitors seek in heritage sites may be a "negotiable" or "staged" authenticity [13, 14]. They may even readily embrace "invented traditions" [15] that satisfy their imagination.

These two major theoretical gaps—(1) the "authenticity vs. fantasy" puzzle within Historical Nostalgia's internal mechanism, and (2) the lack of "competitive comparison" regarding the external effects of Personal Nostalgia vs. Historical Nostalgia—jointly lead to a "strategic dilemma" for historical street managers and a significant risk of resource misallocation. If marketing resources are concentrated on "evoking personal memories" (appealing to Personal Nostalgia), they might lose the customer segment attracted by "historical splendor" (Historical Nostalgia). Conversely, if huge sums are invested in "recreating history," they may disconnect from mainstream visitors who are only seeking a personal emotional connection.

In view of this, the core motivation of this study is to simultaneously address this theoretical puzzle and management dilemma. We will construct "A Dual-Path Nostalgia Model" aimed at clarifying how these two nostalgic emotions, through the two distinct mediating pathways of "Place Attachment" and "Perceived Authenticity," ultimately influence visitor "Satisfaction" and "Willingness to Support."

1.3. Research objectives

Based on the aforementioned motivation, the specific objectives of this study are as follows:

1. To empirically compare the direct impact strength of "Personal Nostalgia" and "Historical Nostalgia" on "Place Attachment" and "Perceived Authenticity" in the context of Qishan Old Street.
2. To examine the differentiated mediating roles played by "Place Attachment" and "Perceived Authenticity" in this dual-path nostalgia model, clarifying the complete mechanism of their transmission to "Visitor Satisfaction" and "Willingness to Support."
3. Based on the empirical results, to respond to the theoretical puzzle proposed in Section 1.2 and to provide "differentiated" management implications for the marketing strategy of Qishan Old Street.

1.4. Research questions

To achieve the above objectives, this study intends to explore the following research questions:

1. In the context of Qishan Old Street, is "Personal Nostalgia" a stronger predictor of "Place Attachment"?
2. Between "Personal Nostalgia" and "Historical Nostalgia," which emotion is the primary antecedent driving the evaluation of "Perceived Authenticity"? Is this mechanism significantly different?
3. Do "Place Attachment" and "Perceived Authenticity" play critical mediating roles between the "dual nostalgia pathways" and "Willingness to Support"?

2. Literature review and hypothesis development

2.1. Research background and purpose

This chapter aims to construct the theoretical foundation for the research framework proposed in Chapter 1. The core objective of this study is to elucidate how the dual constructs of "Personal Nostalgia" and "Historical Nostalgia" ultimately influence "Visitor Satisfaction" and "Willingness to Support" through two distinct mediating pathways: "Perceived Authenticity" and "Place Attachment". This section will review the definitions of the core constructs and develop the research hypotheses accordingly.

2.2. Core construct exploration

Nostalgia and Its Binary Division

Nostalgia is defined as a "bittersweet longing for the past" [3]. Drawing upon the seminal research of Stern [4], nostalgia is distinguished into:

1. Personal Nostalgia : Rooted in an individual's autobiographical memory.
2. Historical Nostalgia: An imagined longing for a "golden age" that the individual has not personally experienced^[2].

Perceived Authenticity

Authenticity is a central concept in heritage tourism research [5]. Kolar and Zabkar [6] define it as a visitor's subjective evaluation of whether a heritage site is "true to its origins." The core theoretical puzzle of this study stems from this: are visitors seeking objective authenticity defined by historical facts [6], or are they seeking existential authenticity that aligns with personal experiences, even tolerating "staged" fantasies [13, 14].

In tourism models, Personal Nostalgia is not merely a cognitive evaluation but a critical antecedent driving subsequent emotions and behaviors. Research confirms that Personal Nostalgia is a key antecedent of Place Attachment [16], and this pathway (Personal Nostalgia → Place Attachment) is a crucial mechanism in shaping long-term visitor loyalty [17]. This finding also supports this study's framework of extending loyalty to "Willingness to Support." Furthermore, Personal Nostalgia has been shown to simultaneously influence both Place Attachment and Visitor Satisfaction, which jointly mediate the impact of authenticity experiences on visitor well-being [18]. Therefore, Personal Nostalgia plays a pivotal role as a "cognitive transformation" hub in this study's dual-pathway model.

Place Attachment (PLA)

Place Attachment refers to the "emotional bond" an individual forms with a specific place [7]. This bond has been proven to be a key factor in shaping long-term visitor loyalty [3].

Place Attachment serves as a critical mediating hub in tourism models. First, it captures the visitor's deep-seated experiences. Recent research has confirmed that Place Attachment is the core mechanism for transforming Personal Nostalgia into visitor "loyalty" or "support behavior (Willingness to Support)" [17, 19]. Second, Place Attachment is also the bridge linking nostalgic emotions to final outcomes. Recent studies explicitly indicate that Place Attachment is the core mediating variable that transforms the emotions of Personal Nostalgia and Historical Nostalgia into "visitor citizenship/support behavior" [10]. Thus, Place Attachment acts as an "emotional solidification" hub in this research model.

Visitor Satisfaction (SAT)

Visitor Satisfaction is conceptualized as a visitor's post-consumption overall evaluation of their experience [20, 21]. Visitor Satisfaction is widely regarded as a key mediating variable linking experiential antecedents to behavioral outcomes [22].

Recent heritage tourism research confirms that Visitor Satisfaction is significantly influenced by deeper cognitive and emotional constructs. Both Personal Nostalgia [20, 23] and Place Attachment [20, 23] have been identified as key antecedents of Visitor Satisfaction. Concurrently, Visitor Satisfaction is also the key mechanism for translating these cognitive (Personal Nostalgia) and emotional (Place Attachment) evaluations into subsequent outcome behaviors, such as willingness to support [21, 23]. Therefore, Visitor Satisfaction is positioned as an essential "evaluative hub" in this model.

Willingness to Support

Willingness to Support is often conceptualized in tourism literature as "pro-destination behavior" or "destination loyalty," signifying future actions a visitor is willing to take that benefit the destination [9].

In the context of heritage tourism, the connotation of this construct has expanded from the traditional "revisit intention" or "recommendation intention" [9] to encompass a visitor's commitment to local sustainable development. This is specifically manifested in "cultural conservational intentions" [23] and even "Willingness to Pay" [24]. Therefore, this study adopts Willingness to Support as the core outcome construct, operationalizing it as a multi-dimensional composite indicator that includes recommendation, revisitation, local consumption, and cultural preservation.

2.3. Hypothesis Development

The Dual Nostalgia Pathways (H1-H4)

The central argument of this study is that Personal Nostalgia and Historical Nostalgia will activate two theoretically distinct psychological pathways, thereby verifying their heterogeneity in the heritage tourism context.

Personal Nostalgia is rooted in a visitor's true autobiographical memories [4]. This emotion is essentially one of Affective Congruity: the visitor projects the emotional value of past positive experiences onto the current place. When specific cues evoke these personal memories [25], a "direct place-emotion link" is formed. This connection, which does not require complex cognitive verification, is the cornerstone for forming the affective dimension of Place Attachment [3] and is a key emotional source driving pro-destination behavior [10].

H1: Personal Nostalgia has a significant positive effect on Place Attachment.

Historical Nostalgia is a longing for an "idealized, unexperienced past" [4], a form of "vicarious nostalgia" recognized as core to the heritage tourism experience [2]. This motivation is not emotional projection but a cognitive "history-seeking" or "story-building" [12]. Visitors will actively assess whether the heritage site (e.g., Qishan Old Street's architecture, narratives) can objectively verify the "golden age" they have imagined [26, 27]. Therefore, the intensity of Historical Nostalgia will directly influence the cognitive evaluation of Personal Nostalgia, i.e., whether the place is "true to its origins" [6].

H2: Historical Nostalgia has a significant positive effect on Perceived Authenticity.

While Personal Nostalgia is a primary source of emotional attachment, Historical Nostalgia can also influence Place Attachment through a different mechanism. Historical Nostalgia drives an identification with "Collective Symbolism." The visitor becomes attached not to their own childhood, but to the "Spirit of Place" or the cultural symbolism embodied by the heritage site. This "Symbolic Attachment" has been shown to exist within the attachment mechanisms of heritage sites [2, 10].

H3: Historical Nostalgia has a significant positive effect on Place Attachment.

This hypothesis aims to compete with H2 (Historical Nostalgia -> Personal Nostalgia) to clarify which construct, Personal Nostalgia or Historical Nostalgia, is the primary driver of Personal Nostalgia. Unlike the "objective historical accuracy" [6] sought by Historical Nostalgia, Personal Nostalgia seeks "Existential Authenticity" [5]—a verification of "whether the present experience is true to my fond personal memories." We argue that this emotional verification demand, stemming from "autobiographical memory" (Personal Nostalgia), will have a stronger driving force than the abstract pursuit of "collective history" (Historical

Nostalgia) due to its high self-relevance. Recent studies also confirm that subjective, self-connected authenticity is key to influencing visitor cognition ^[26, 27].

H4: Personal Nostalgia has a significant positive effect on Perceived Authenticity.

Core Mediating Pathways (H5-H9)

Personal Nostalgia is considered a prerequisite for visitors to develop deep emotions for a place. When a heritage site's objective cues and intrinsic experiences are confirmed as authentic ^[16], this "cognitive affirmation" stimulates a sense of identification with the culture ^[6]. Literature consistently confirms that Personal Nostalgia is a key antecedent in shaping Place Attachment ^[17, 19].

H5: Perceived Authenticity has a significant positive effect on Place Attachment.

Within the heritage tourism framework, Personal Nostalgia is a core need for visitors seeking cultural experiences. High Personal Nostalgia implies that the visitor's "cultural goals" have been met. Literature has confirmed that Personal Nostalgia is a key driver of Visitor Satisfaction ^[18, 20], and this sense of goal achievement translates directly into a positive summative evaluation ^[23].

H6: Perceived Authenticity has a significant positive effect on Visitor Satisfaction.

Place Attachment is a deep emotional bond between an individual and a place ^[7]. This strong connection leads visitors to grant the place greater latitude and positive expectations when making satisfaction judgments. Research confirms a strong positive relationship between Place Attachment and Visitor Satisfaction^[3, 18, 20].

H7: Place Attachment has a significant positive effect on Visitor Satisfaction.

Place Attachment is a stable, long-term emotion that transcends short-term satisfaction, establishing a "psychological sense of belonging" or "responsibility." This emotional drive translates directly into Willingness to Support, demonstrating a deeper commitment to pro-destination behavior ^[10, 19].

H8: Place Attachment has a significant positive effect on Willingness to Support.

According to classic models in tourism, Visitor Satisfaction, as a summative evaluation, is the most direct predictor of future behavioral intentions (i.e., Willingness to Support) ^[21, 28]. Recent research also confirms the significance of the Visitor Satisfaction -> Willingness to Support (conservation intention) pathway ^[23].

H9: Visitor Satisfaction has a significant positive effect on Willingness to Support.

Mediating Roles of Core Constructs (H10-H12b)

H10 examines the "emotional transformation mechanism" of historical cognition. Historical Nostalgia is an abstract emotion based on collective memory, which may first require objective cognitive verification (Personal Nostalgia). When a visitor's historical expectations are affirmed by Personal Nostalgia, this recognition is expected to stimulate an emotional connection, transforming into Place Attachment ^[17, 19]. Therefore, Personal Nostalgia is expected to play a mediating role in the path from Historical Nostalgia to Place Attachment.

H10: Perceived Authenticity mediates the relationship between Historical Nostalgia and Place Attachment.

Conversely, the emotional pathway examines the "long-term commitment mechanism" of emotional connection. Personal Nostalgia is a strong emotion driven by true memories, requiring a "stable, present-day mediating vehicle" to anchor it. Place Attachment fulfills this role, transforming the strong emotions evoked

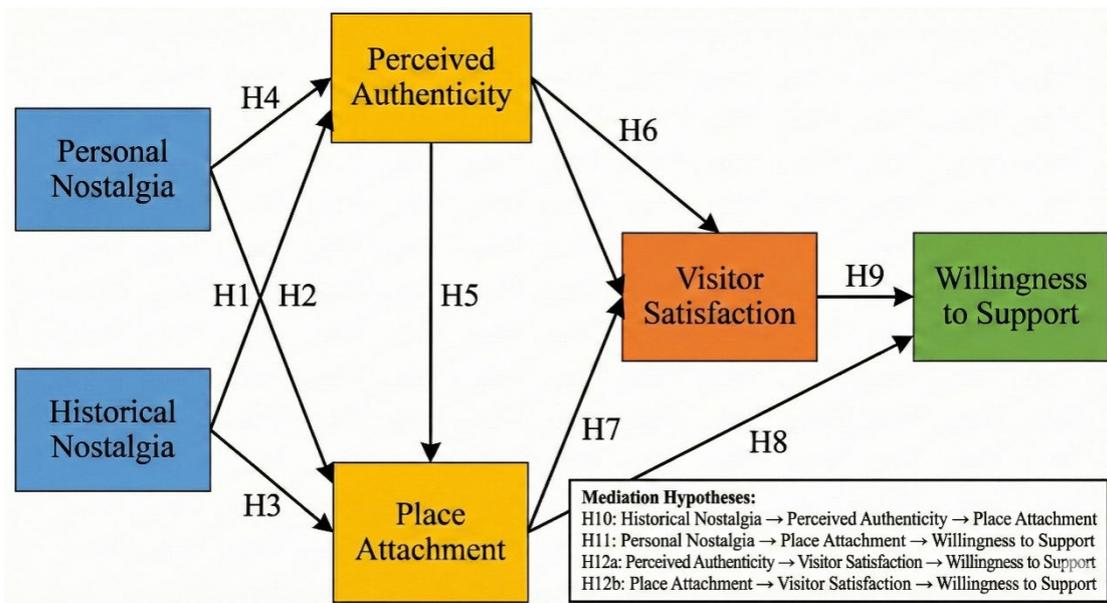
by Personal Nostalgia into a "psychological responsibility" for the place. Literature confirms that Place Attachment is the key mediating hub for converting nostalgic emotions into Willingness to Support [10, 29].

H11: Place Attachment mediates the relationship between Personal Nostalgia and Willingness to Support.

Finally, this study explores the mediating role of Visitor Satisfaction in the latter part of the model (linking Personal Nostalgia/ Place Attachment to Willingness to Support). Although Personal Nostalgia and Place Attachment provide cognitive and emotional commitment, these "internal states" must pass through a summative value judgment (Visitor Satisfaction) before translating into "external action" (Willingness to Support). Heritage site research confirms that both Personal Nostalgia and Place Attachment are key antecedents of Visitor Satisfaction [20, 23], and Visitor Satisfaction, in turn, is a key driver of final loyalty or conservation intentions (Willingness to Support) [21, 23]. Therefore, Visitor Satisfaction plays a critical final mediating role in both pathways.

H12a: Visitor Satisfaction mediates the relationship between Perceived Authenticity and Willingness to Support.

H12b: Visitor Satisfaction mediates the relationship between Place Attachment and Willingness to Support.



2.4. Research Method

All core constructs in this study were assessed using a seven-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree), aiming to explore how the dual paths of nostalgia influence visitor behavioral intentions.

The division of Personal Nostalgia and Historical Nostalgia is theoretically grounded in Stern [4] and was measured using an adapted scale from Marchegiani and Phau [11]. Marchegiani and Phau [11], with three items each, to accurately capture the heterogeneous emotions of visitors towards authentic memories versus historical imagination.

Perceived Authenticity measures visitors' evaluations of the old street's objective history and internal experiences. Its four items were primarily adapted from Kolar and Zabkar [6] model, intended to explore how it, as a cognitive evaluation, responds to nostalgic motives.

Place Attachment measures the deep emotional connection and sense of belonging visitors have with the site. It employed four items adapted from Yuksel, Yuksel and Bilim [7] to examine the solidifying effect of the emotional path.

As the outcome variables in the latter part of the model, Visitor Satisfaction was measured with three items adapted from the standards of Yoon and Uysal [9] and Oliver [8], serving as a summary value judgment. Finally, Willingness to Support utilized four items, integrating loyalty elements from Yoon and Uysal [9] with deeper sustainable commitments, such as local support and civic behaviors proposed by Wang, Xie, Zhang, Huang, Yang and Zhang [10].

Lastly, the questionnaire included nine items to record visitors' demographic information and travel behaviors, serving as the basis for sample description and analysis.

2.5. Data analysis methods

The data analysis for this study was conducted sequentially using SPSS 26.0 and AMOS 26.0 statistical software. The first stage of preliminary data processing (using SPSS) included descriptive statistics to analyze the sample profile, and calculating Cronbach's Alpha (α) coefficients to ensure the internal consistency of all constructs (Personal Nostalgia, Historical Nostalgia, Willingness to Support, Perceived Authenticity, Place Attachment, Visitor Satisfaction) was above the 0.70 threshold. Furthermore, the results of the normality test (skewness and kurtosis) indicated that the data was non-normal; therefore, adopting the Bootstrap 5000 sampling method in the AMOS stage was a necessary and robust procedure.

The second stage, Structural Equation Modeling (SEM) analysis (using AMOS), followed the "two-stage analysis approach" recommended by Anderson & Gerbing [30]. Given that all scales in this study were "adapted" from mature, classic literature (e.g., Stern, [4]; Kolar & Zabkar, [6]), this study adopted a "theory-driven" strategy, omitting EFA (Exploratory Factor Analysis) and proceeding directly to CFA (Confirmatory Factor Analysis). The CFA stage aimed to "validate" the measurement model by examining the convergent validity (Factor Loadings > 0.50, CR > 0.70, AVE > 0.50) and discriminant validity (Square root of AVE > inter-construct correlations) of all constructs.

After confirming the good reliability and validity of the measurement model, the study transitioned to the structural model to test all hypotheses from H1 to H12b. This stage first assessed the overall model fit indices (e.g., χ^2/df , CFI, TLI, RMSEA), followed by examining the path coefficients (Estimate) and p-values for the direct effects (H1 to H9). Finally, the Bootstrap 5000 sampling method was used to examine whether the 95% Bias-Corrected Confidence Intervals (BC CI) for the mediation hypotheses (H10-H12b) did not contain 0.

2.6. Pretest and validity assessment

To ensure the completeness, precise wording, and reliability of the questionnaire items, this study invited two experts with rich practical experience in the tourism and cultural heritage fields to evaluate the questionnaire's content and item validity.

The pretest questionnaire was distributed in the area surrounding Qishan Old Street from June to early July 2025. After excluding invalid responses (those with missing values or consecutive identical answers), 42 valid questionnaires were collected from a total of 50 distributed, yielding a valid response rate of 84%. The pretest results showed reliability analyses as follows: Personal Nostalgia (0.749), Historical Nostalgia (0.797), Perceived Authenticity (0.786), Place Attachment (0.742), and Visitor Satisfaction (0.712). Therefore, all scale reliabilities in this study were above 0.7, demonstrating a good standard of reliability.

2.7. Participants and sampling method

This study employed a convenience sampling method, targeting visitors who had visited Kaohsiung's Qishan Old Street within the past six months. The questionnaire was distributed at various entry and exit points around the old street to ensure sample diversity, covering both weekday and weekend visitors. Respondents completed the questionnaire based on their recall of their most recent experience at Qishan Old Street. We provided each respondent with a gift valued at USD 2 (a cold beverage) as a token of appreciation and an incentive.

The formal survey was conducted from June to September 2025. A total of 800 questionnaires were distributed, and 743 valid questionnaires were successfully collected, resulting in a valid response rate of 92.9%. This high response rate is primarily attributed to the on-site sampling method and the appropriate incentive mechanism.

The final sample for this study included 743 respondents. The gender distribution was largely balanced (52.0% female). The age structure was concentrated in the young adult and middle-aged groups, with visitors aged 20-44 accounting for the largest proportion (56.2% combined). In terms of education level, the majority of respondents held a college or university degree (54.8%). The occupational distribution was dominated by the service industry (23.7%), industry/business (19.0%), and students (17.9%). Geographically, visitors primarily came from the nearby Kaohsiung-Pingtung area (35.9%) and Northern Taiwan (24.6%), indicating both regional and cross-regional appeal. Regarding travel behavior, first-time visitors accounted for slightly less than half (48.6%); the most common duration of stay was 1-3 hours (48.5%); and the most common travel companions were friends/colleagues (29.9%) and family (28.1%).

Table 1. Demographic Profile and Travel Characteristics of the Sample (N=743)

Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	357	48
	Female	386	52
	Total	743	100
Age	Under 19	63	8.5
	20 - 29	204	27.5
	30 - 44	213	28.7
	45 - 64	187	25.2
	65 and above	76	10.2
	Total	743	100
Education Level	High School and below	136	18.3
	College/University	407	54.8
	Master's	169	22.7
	Ph.D.	31	4.2
	Total	743	100
Occupation	Student	133	17.9
	Military/Civil Servant/Educator	88	11.8
	Service Industry	176	23.7
	Industry/Business	141	19
	Freelancer	71	9.6
	Homemaker	79	10.6
	Retired	55	7.4
	Total	743	100

Variable	Category	Frequency (N)	Percentage (%)
Place of Residence	Kaohsiung-Pingtung Area	267	35.9
	Tainan, Chiayi, Yunlin	123	16.6
	Central Taiwan	137	18.4
	Northern Taiwan	183	24.6
	Eastern Taiwan and Outlying Islands	33	4.4
	Total	743	100
Number of Visits	First Visit	361	48.6
	Second Visit	211	28.4
	Third Visit and above	171	23
	Total	743	100
Duration of Stay	1 hour and below	81	10.9
	1 to 3 hours	360	48.5
	3 to 5 hours	181	24.4
	Half day and above	121	16.3
	Total	743	100
Travel Companions	Alone	99	13.3
	Partner/Spouse	157	21.1
	Friends/Colleagues	222	29.9
	Family	209	28.1
	Group Tour	56	7.5
	Total	743	100

Table 1. (Continued)

3. Result

3.1. Analysis of factor appropriateness

This study first executed the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity.

The results showed that Bartlett’s test was significant (Approx. Chi-Square = 5305.698, $df = 210$, $p < .001$), and the KMO value was 0.882. This KMO value is significantly higher than the commonly accepted minimum threshold (≥ 0.60)^[31].

Taken together, the findings of $KMO > 0.60$ and a significant Bartlett's test confirm that there is sufficient common variance among the items. This indicates the data is appropriate and adequate to support the subsequent factor analysis.

3.2. Model fit indicators of the confirmatory factor analysis

First, an assessment of the overall model fit was conducted. As the data normality test indicated that some observed variables did not fully meet the assumption of normal distribution (e.g., SAT1 skewness c.r. = -4.075), this study employed the Maximum Likelihood (ML) estimation method while additionally performing the Bollen-Stine bootstrap procedure (Bootstrap samples = 5000) to correct for potential biases in the chi-square value.

The result of the Bollen-Stine bootstrap ($p = 0.786$) was well above the 0.05 significance level. This result strongly confirms that even after accounting for the influence of data non-normality, the model fit of this study remains ideal. The original chi-square test result (CMIN = 163.106, $DF = 177$, $p = 0.765$) is highly credible and robust.

Other goodness-of-fit indices for this model also met or far exceeded the recommended academic standards (as shown in Tables 2, 3, and 4). Regarding Absolute fit measures, the chi-square/degrees of freedom ratio (CMIN/DF) was 0.922 (below the acceptable standard of 5). The Goodness-of-Fit Index (GFI) was 0.980 (above the 0.90 standard), the Adjusted Goodness-of-Fit Index (AGFI) was 0.973 (above the 0.90 standard), the Standardized Root Mean Square Residual (SRMR) was 0.037 (below the 0.08 standard), and the Root Mean Square Error of Approximation (RMSEA) was 0.000 (below the 0.10 standard, PCLOSE = 1.000).

Regarding Relative fit measures, the Comparative Fit Index (CFI) was 1.000, the Incremental Fit Index (IFI) was 1.003, the Normed Fit Index (NFI) was 0.970, and the Relative Fit Index (RFI) was 0.964, all of which are higher than the strict standard of 0.90.

It is worth noting that the model fit indices (e.g., CFI = 1.000, RMSEA = 0.000) indicate an exceptional fit. This result is largely attributed to the non-significant Chi-square value (chi-square = 163.106, DF = 177, $p = 0.765$), which suggests that the observed covariance matrix is not significantly different from the estimated covariance matrix. We confirm that no post-hoc modifications (such as correlating error terms based on modification indices) were applied to artificially improve the fit. The model structure relies strictly on the theoretical framework derived from Stern ^[4] and Kolar & Zabkar ^[6].

Finally, regarding Parsimonious fit measures, the Parsimonious Normed Fit Index (PNFI) was 0.817, and the Parsimonious Goodness-of-Fit Index (PGFI) was 0.751, both exceeding the recommended standard of 0.50. In summary, all the aforementioned indices demonstrate that the theoretical model proposed in this study has a high degree of consistency with the observed data and exhibits excellent goodness-of-fit, making it suitable for subsequent path analysis and hypothesis testing.

Table 2. Absolute fit measures

	Criteria	Indices
CMIN/DF	1~5	0.922
GFI	≥ 0.90	0.980
AGFI	≥ 0.90	0.973
RMR	< 0.08	0.037
RMSEA	≤ 0.10	0.000

Table 3. Relative fit measures.

	Criteria	Indices
NFI	≥ 0.90	0.970
CFI	≥ 0.90	1.000
IFI	≥ 0.90	1.003
RFI	≥ 0.90	0.964

Table 4. Parsimonious fit measures.

	Criteria	Indices
PNFI	≥ 0.50	0.817
PGFI	≥ 0.50	0.751

This study utilized Confirmatory Factor Analysis (CFA) to assess the quality of the measurement model. Reliability was examined using Cronbach’s α and Composite Reliability (CR).

As shown in Table 5, the Cronbach’s α values for the latent constructs ranged from 0.753 (Historical Nostalgia) to 0.829 (Perceived Authenticity), and the CR values ranged from 0.858 (Historical Nostalgia) to 0.886 (Perceived Authenticity). All values exceeded the recommended threshold of 0.70 [32], indicating that the scales possess good internal consistency.

Furthermore, regarding convergent validity, this study assessed it using the Average Variance Extracted (AVE). All AVE values ranged from 0.603 (Willingness to Support) to 0.709 (Personal Nostalgia), all of which are above the recommended value of 0.50 [33]. This indicates that each construct can sufficiently explain the variance in its indicators, supporting convergent validity.

At the item level, all factor loadings ranged from 0.767 (PLA3) to 0.865 (PN1). These are clearly higher than the 0.50 benchmark, further reinforcing the convergent validity of the measurement model.

Table 5. Confirmatory Factor Analysis (CFA): Reliability and Validity Test

Item	Factor Loading	Cronbach's alpha	CR	AVE
HN1	0.814	0.753	0.858	0.668
HN2	0.844			
HN3	0.793			
PA1	0.794	0.829	0.886	0.659
PA2	0.808			
PA3	0.837			
PA4	0.810			
PLA1	0.794	0.790	0.864	0.613
PLA2	0.795			
PLA3	0.767			
PLA4	0.777			
PN1	0.865	0.796	0.880	0.709
PN2	0.836			
PN3	0.824			
SAT1	0.825	0.770	0.867	0.685
SAT2	0.840			
SAT3	0.818			
SUP1	0.786	0.781	0.859	0.603
SUP2	0.777			
SUP3	0.774			
SUP4	0.768			

Note: CR (Composite Reliability) and Cronbach's Alpha should be ≥ 0.70 . AVE (Average Variance Extracted) should be ≥ 0.50 . Factor loadings should be ≥ 0.50 .

This study examined discriminant validity based on the Fornell–Larcker [33] criterion. This criterion requires that the square root of the Average Variance Extracted (AVE) for each latent construct must be greater than its correlation coefficients with other constructs.

As shown in Table 6, the bold values on the diagonal represent the square root of the AVE for each construct, while the off-diagonal values are the inter-construct correlations. The results indicate that all square roots of the AVEs (ranging from 0.776 to 0.842) are higher than their corresponding correlation coefficients (ranging from 0.380 to 0.620).

Based on this, it can be confirmed that all constructs are sufficiently distinct, and discriminant validity is supported.

Table 6. Correlation Matrix and Discriminant Validity

	HN	PA	PLA	PN	SAT	SUP
HN	0.817					
PA	0.164	0.812				
PLA	0.225	0.340	0.783			
PN	0.400	0.242	0.448	0.842		
SAT	0.107	0.420	0.387	0.297	0.827	
SUP	0.141	0.375	0.385	0.214	0.439	0.776

3.3. Structure model analysis

After determining that the measurement model of the research framework has good reliability and validity, the structural model was analyzed as follows.

Evaluating Common Method Bias

Since responses for all measurement items in this study (including independent and dependent variables) were collected from the same respondents, there is a potential risk of Common Method Variance (CMV). Following the recommendations of Podsakoff et al., this study employed Harman’s single-factor test to assess this issue.

The criterion for Harman's single-factor test is that significant CMV exists if the Exploratory Factor Analysis (EFA) results yield only a single factor, or if a single factor explains the majority of the variance (typically defined as over 50%).

The EFA results for all measurement items in this study (as shown in Table 7) indicated that a total of six factors with eigenvalues greater than 1 were extracted. Furthermore, the first factor explained only 28.077% of the total variance. As the variance explained by the first factor is far below the 50% threshold, this result confirms that significant Common Method Variance (CMV) is not a concern in this study, and the data possesses good reliability.

Table 7. Exploratory Factor Analysis (EFA): Total Variance Explained

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.896	28.077	28.077
2	2.283	10.872	38.949
3	1.703	8.110	47.058
4	1.530	7.284	54.343
5	1.240	5.905	60.247
6	1.098	5.230	65.477

Table 7. (Continued)

Structural Model Analysis and Direct Effects Hypothesis Testing

To test the nine direct effect hypotheses (H1 to H9) proposed in this study, we conducted a Structural Equation Modeling (SEM) path analysis. The detailed standardized coefficients (Estimate) and p-value results are shown in Table 8.

Overall, among the nine hypotheses, eight received statistically significant support. The only hypothesis not supported was H3: The direct influence of Historical Nostalgia on Place Attachment was non-significant (Estimate = 0.049, $p = 0.291$).

Regarding the model's antecedent variables, this study clarified the different impacts of the two types of nostalgia:

H1 and H4 (Personal Nostalgia): Personal Nostalgia exhibited a significant and strong positive influence on Place Attachment (H1: Estimate = 0.475, $p < 0.001$), and it also had a significant positive influence on Perceived Authenticity(H4: Estimate = 0.260, $p < 0.001$).

H2 and H3 (Historical Nostalgia): In contrast, Historical Nostalgia only had a marginally significant positive influence on Perceived Authenticity(H2: Estimate = 0.100, $p = 0.050$), while its influence on Place Attachment did not reach a significant level.

Regarding the paths of the mediating variables, the results show:

H5 and H6 (Perceived Authenticity): Perceived Authenticity significantly and positively influenced Place Attachment (H5: Estimate = 0.262, $p < 0.001$) and also produced a strong positive influence on Visitor Satisfaction (H6: Estimate = 0.382, $p < 0.001$).

H7 and H8 (Place Attachment): Place Attachment likewise significantly and positively influenced "Visitor Satisfaction Visitor Satisfaction (H7: Estimate = 0.345, $p < .001$) and Willingness to Support (H8: Estimate = 0.278, $p < 0.001$).

Finally, regarding the model's final outcome variable, Visitor Satisfaction exhibited a significant and strong positive influence on "Willingness to Support"(H9: Estimate = 0.350, $p < 0.001$).

Table 8. Results of Structural Equation Modeling (SEM) and Hypothesis Testing

	IV→DV	Estimate	P Values
H1	Personal Nostalgia →Place Attachment	0.475	<0.001
H2	Historical Nostalgia →Perceived Authenticity	0.100	0.050
H3	Historical Nostalgia →Place Attachment	0.049	0.291
H4	Personal Nostalgia →Perceived Authenticity	0.260	<0.001
H5	Perceived Authenticity →Place Attachment	0.262	<0.001
H6	Perceived Authenticity → Visitor Satisfaction	0.382	<0.001
H7	Place Attachment → Visitor Satisfaction	0.345	<0.001
H8	Place Attachment→ Willingness to Support,	0.278	<0.001
H9	Visitor Satisfaction → Willingness to Support,	0.350	<0.001

Table 8. (Continued)

PN: Personal Nostalgia, HN : Historical Nostalgia, SUP : Willingness to Support, PA : Perceived Authenticity, PLA : Place Attachment, SAT : Visitor Satisfaction

Mediation Effect Analysis

This study further employed the bootstrapping method to examine the mediation effects within the model (H10 to H12b), using Bias-Corrected (BC) confidence intervals for determination. The analysis results (as shown in Table 9) provide deeper support for the hypotheses.

H10: Mediation Effect of Historical Nostalgia

Hypothesis H10 examined the mediating role of Perceived Authenticity between Historical Nostalgia and Place Attachment. The analysis results indicated that this indirect effect path (Historical Nostalgia → Perceived Authenticity → Place Attachment) did not reach a significant level (Estimate = 0.026, $p = 0.084$), and the 95% BC confidence interval [-.001 ~ .059] contained 0. Simultaneously, the direct effect (Personal Nostalgia → Place Attachment) was also non-significant (Estimate = 0.05, $p = 0.343$). Therefore, H10 was not supported, as the data show that Perceived Authenticity does not have a mediating effect in this path.

H11: Mediation Effect of Personal Nostalgia

Hypothesis H11 examined the influence of Personal Nostalgia on Willingness to Support. The results showed that the total indirect effect of Personal Nostalgia on Willingness to Support was significant (Estimate = 0.247, $p = 0.004$), and the 95% BC confidence interval [0.193 ~ 0.322] did not contain 0. However, the direct effect of Personal Nostalgia on Willingness to Support was non-significant (Estimate = -0.057, $p = 0.150$). This result confirms a "Full Mediation" effect, indicating that the influence of Willingness to Support on Willingness to Support is transmitted entirely through the mediating variables in the model (such as Place Attachment, Perceived Authenticity, and Visitor Satisfaction).

H12a and H12b: The Mediating Hubs for Willingness to Support This study further examined two key mediating paths influencing Willingness to Support, both of which exhibited "Partial Mediation" effects:

H12a: The total indirect effect of Perceived Authenticity on Willingness to Support was significant (Estimate = 0.209, $p = 0.010$), with the 95% BC CI [0.160 ~ 0.261] not containing 0. Simultaneously, its direct effect was also significant (Estimate = 0.165, $p = 0.012$).

H12b: The indirect effect transmitted from Place Attachment through Visitor Satisfaction was significant (Estimate = 0.109, $p = 0.012$), with the 95% BC CI [0.075 ~ 0.153] not containing 0. Simultaneously, its direct effect was also significant (Estimate = 0.25, $p = 0.003$).

Summarizing the results of H12a and H12b, since both the direct and indirect effects were significant, this confirms the existence of multiple and robust "partial mediation" paths within the model.

Table 9. Results of Mediation Analysis and Mediating Effects Test

Hypothesis	Path	Effect Type	Estimate	P Value	95% CI (Lower ~ Upper)	Finding
H10	HN → PLA	Direct effect	0.05	0.343	-0.042 ~ 0.119	No Mediation
	HN → PA → PLA	Indirect effect	0.026	0.084	-0.001 ~ 0.059	
	HN → PLA	Total effect	0.076	0.205	-0.022 ~ 0.150	
H11	PN → SUP	Direct effect	-0.057	0.15	-0.129 ~ 0.014	Full Mediation
	PN → PLA → SUP	Indirect effect	0.247	0.004	0.193 ~ 0.322	
	PN → SUP	Total effect	0.19	0.01	0.120 ~ 0.255	
H12a	PA → SAT → SUP	Indirect effect	0.209	0.01	0.160 ~ 0.261	Partial Mediation
	PA → SUP	Direct effect	0.165	0.012	0.084 ~ 0.221	
	PA → SUP	Total effect	0.374	0.007	0.307 ~ 0.435	
H12b	PLA → SAT → SUP	Indirect effect	0.109	0.012	0.075 ~ 0.153	Partial Mediation
	PLA → SUP	Direct effect	0.25	0.003	0.165 ~ 0.367	
	PLA → SUP	Total effect	0.358	0.004	0.273 ~ 0.487	

Table 9. (Continued)

PN: Personal Nostalgia, HN: Historical Nostalgia, SUP : Willingness to Support, PA: Perceived Authenticity, PLA: Place Attachment, SAT: Visitor Satisfaction

4. Research Conclusions

This study aims to respond to the "theoretical puzzle" and "managerial dilemma" concerning nostalgic emotions within the field of heritage tourism. The research objective is to construct and validate a "dual-path model of nostalgia," using a "competitive comparison" approach to clarify how the emotional path of Personal Nostalgia and the cognitive path of Historical Nostalgia differentially influence visitors' Perceived Authenticity and Place Attachment, and how this influence is ultimately transmitted to Visitor Satisfaction and Willingness to Support.

To achieve this, the study conducted an SEM analysis using 743 valid samples from Kaohsiung's Qishan Old Street. The model fit was found to be ideal (CMIN/DF = 0.922, CFI = 1.000, RMSEA = 0.000), and the Bollen-Stine test ($p = .786$) confirmed that this fit was not affected by data non-normality, indicating the model's high robustness.

Based on this robust foundation, the study provides a concise competitive comparison between the two nostalgia pathways. The results clearly demonstrate an asymmetrical dominance: Personal Nostalgia acts as a comprehensive driver, significantly activating both the emotional pathway (Place Attachment, $\text{Beta} = 0.475$) and the cognitive pathway (Perceived Authenticity, $\text{Beta} = 0.260$). In stark contrast, Historical Nostalgia functions strictly within a weaker cognitive scope ($\text{Beta} = 0.100$ on Authenticity) and fails to directly trigger Place Attachment. This finding clarifies that in the context of living heritage streets, visitors prioritize "existential resonance" (memory verification) over "objective historical appreciation."

4.1. Conclusion

The key empirical conclusions are as follows:

"Personal Nostalgia" is the absolute dominant path: The most important finding of this study is that Personal Nostalgia strongly dominates both the "emotional" and "cognitive" paths simultaneously. Personal Nostalgia not only exerts the strongest direct influence on Place Attachment (H1: $\text{Beta} = 0.475$, $p < .001$), but it is also the primary antecedent driving Perceived Authenticity evaluations (H4: $\text{Beta} = 0.260$, $p < .001$).

"Historical Nostalgia's" cognitive path is confirmed, but its efficacy is secondary: In stark contrast to Personal Nostalgia, the influence of Historical Nostalgia is significant but limited. The data show that Historical Nostalgia can significantly influence Perceived Authenticity (H2: $\text{Beta} = 0.100$, $p = 0.050$), confirming its cognitive path does exist. However, this path did not effectively translate into a significant mediation effect on Place Attachment (H10: $p = 0.084$), and the direct influence of Historical Nostalgia on Place Attachment was also non-significant (H3: $p = 0.291$). This confirms that Historical Nostalgia is a real, but secondary, path with far weaker efficacy than Personal Nostalgia.

Mediation mechanism reveals Personal Nostalgia's "negative suppression effect": The model's subsequent transmission mechanism was validated. Personal Nostalgia was the only antecedent variable capable of producing a significant total effect ($p = 0.010$) and ultimately enhancing Willingness to Support. However, an in-depth analysis of H11 revealed that this path presents a complex "full mediation with a negative suppression effect." The data show that although Personal Nostalgia produced a strong positive total indirect effect ($p=0.004$) via Perceived Authenticity, Place Attachment, and Visitor Satisfaction, its direct effect, after accounting for the mediation, actually showed a negative trend ($\text{Beta} = -0.069$, $p = .150$). This implies that Personal Nostalgia may be a double-edged sword (see Section 5.2 for details).

4.2. Theoretical Implications

The results of this study have three key implications for heritage tourism and nostalgia theory:

Clarifies the authenticity puzzle and points to the dominance of "Existential Authenticity": This study responds to the "reality vs. fantasy" puzzle raised in Section 4.3. **The empirical data provide a clear answer: the primary driver of Perceived Authenticity is Personal Nostalgia** (H4: $p < .001$), which is far stronger than Historical Nostalgia (H2: $p = .050$). This result strongly supports this study's proposition that in "living heritage" contexts like "old streets," the "authenticity" pursued by visitors has shifted from a rigorous examination of objective historical facts (Historical Nostalgia) ⁶ to a pursuit of "Existential Authenticity"—that is, "whether the present experience is faithful to my positive personal memories (Personal Nostalgia)."

Confirms an "Asymmetrical Dual-Path Model" of nostalgia and its "Context-dependency": This study confirms "An Asymmetrical Dual-Path Model" of nostalgia. This model reveals that, in the Qishan Old Street context, Personal Nostalgia is the absolute primary path, driving both emotion (H1) and cognition (H4); whereas Historical Nostalgia is merely a weaker, secondary cognitive path (H2 significant, H10 marginally significant). While this finding refines Stern ⁴ dual model, this study must also emphasize the "context-dependency" of this model. Qishan Old Street is inherently a Personal Nostalgia -driven site centered on "life" and "family memories." Whether this conclusion of "Personal Nostalgia's dominance" can be generalized to Historical Nostalgia -driven sites (e.g., historical museums, war memorials) remains unknown (see Section 5.4).

Reveals the potential for "Nostalgia Betrayal" and highlights statistical complexities: The mediation analysis for H11 provides the most profound, yet complex, insight of this study. The total effect of Personal Nostalgia on Willingness to Support is significant ($p = .010$), but this effect is "fully mediated." A deeper analysis reveals that its direct effect shows a negative trend (Beta = -0.069, $p = 0.150$), contrasting with the strong positive indirect effect ($p = 0.004$).

We offer a theoretical interpretation for this: This may imply the possibility of "Nostalgia Betrayal." That is, when Personal Nostalgia is evoked, but the on-site experience (Perceived Authenticity/Place Attachment) fails to "deliver on" the memory, Personal Nostalgia might exert a direct negative force to suppress Willingness to Support.

However, we must also remain methodologically cautious: As Perceived Authenticity and Place Attachment are theoretically highly correlated, this "statistical negative suppression effect" could also merely be a "statistical artifact" caused by high multicollinearity between variables, rather than a true negative psychological mechanism. Although the p-value for H11 did not reach significance, this "negative trend" is in itself highly informative. It provides a critical preliminary clue for future research (e.g., using experimental methods) to clarify this complex "suppression" or "betrayal" mechanism.

4.4. Managerial Implications

The conclusions of this study offer heritage street managers strategic guidelines that are both more precise and more challenging:

Core Strategy: Prioritize resources on Personal Nostalgia and "precisely deliver" on the experience. The most robust and strongest finding of this study is the path for H1 (Personal Nostalgia -> Place Attachment) and H4 (Personal Nostalgia -> Perceived Authenticity). This provides managers with a clear strategic direction: marketing resources should be prioritized to "trigger" visitors' autobiographical memories (Personal Nostalgia) rather than "educate" them on objective history (Historical Nostalgia).

However, the analysis of the "negative suppression effect" in H11 ($p = 0.150$), while not statistically significant, offers a critical "potential warning": Personal Nostalgia may be a double-edged sword. This risk of "nostalgia betrayal" reminds managers that evoking Personal Nostalgia is only the first step. If the on-site experience (i.e., Perceived Authenticity and Place Attachment) fails to "deliver on" these evoked positive memories, then the stronger the Personal Nostalgia stimulated by marketing activities (e.g., "Do you still remember?"), the greater the visitor's potential disappointment (i.e., a potential direct negative impact on Willingness to Support) might be.

Managing "Authenticity": Prioritize "memory cues" over "historical hardware." This study confirms ($H4 > H2$) that the core criterion visitors use to evaluate "authenticity" is "whether the present experience is faithful to my memory (Personal Nostalgia)." This suggests to managers that the focus of authenticity management should not be 100% historical accuracy or physical replication ^[6], but rather the strategic maintenance and management of "sensory and experiential cues" that trigger Personal Nostalgia.

For example, the "tastes" (specific local snacks), "sounds," "smells," or "social atmosphere" (e.g., scenes of families enjoying themselves) from a visitor's memory are the core standards they use to evaluate "whether Qishan Old Street is still authentic." This is not to encourage "fabrication," but to emphasize that managers should strive to "curate" an experience that resonates with the visitor's need for "existential authenticity."

Historical Nostalgia as a "Support," Not a "Lead": Given that the cognitive path for Historical Nostalgia does exist ($H2$ significant, $H10$ marginally significant), managers should not abandon Historical Nostalgia narratives (e.g., "Banana Kingdom"). However, given that its efficacy is far weaker than that of Personal Nostalgia, Historical Nostalgia should play a "supplementary narrative" role. It should be used to reinforce the site's uniqueness and sense of Perceived Authenticity, but it should not be expected to independently create strong Place Attachment.

4.5. Limitations and future research

First, this study utilized convenience sampling and focused solely on a single site, "Qishan Old Street." Whether these findings can be generalized to other types of heritage sites (such as museums, historical monuments, or war memorials)¹ awaits further research.

Second, the cross-sectional data used in this research can only reveal correlations between variables, thus limiting the ability to draw causal inferences.

Future research should prioritize an in-depth investigation of the "negative suppression effect" found in H11. For instance, an experimental design could be used to manipulate "high nostalgia/low experience" scenarios to verify the specific mechanism of "nostalgia betrayal." Furthermore, this "competitive model" could be applied to sites where Historical Nostalgia is the primary attraction (such as the National Palace Museum or historical museums) to test whether the Personal Nostalgia dominance identified in this study still holds true.

Conflict of interest

The authors declare no conflict of interest

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