Digital Transformation and Sustainable Tourism: An Integrated Model for Heritage Destination Revisitation in the Service Innovation Era

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ABSTRACT

This research examined the interrelationships between destination image, visitor experience, social media marketing, and destination revisitation in the context of heritage tourism's digital transformation. Despite the growing economic significance of heritage tourism and the increasing implementation of digital technologies at heritage sites, limited research has investigated how digital factors interact with traditional tourism constructs to influence revisitation behavior. The study developed and empirically tested an integrated model using data collected from 236 heritage tourists who had experienced digital technologies during their visits. Partial least squares structural equation modeling revealed that destination image strongly influenced visitor experience, significantly affecting revisitation intention. Social media marketing positively impacted both visitor experience and revisitation intention. The findings highlighted the dual role of digital transformation in heritage tourism: enhancing visitor experiences through engaging interactions with heritage sites and directly influencing revisitation through ongoing digital engagement, providing valuable implications for heritage destination management in the digital era.

Keywords: Heritage tourism, digital transformation, visitor experience, social media marketing, destination revisitation.

1   Introduction

Heritage tourism represents a significant and growing segment of the global tourism industry, accounting for approximately 40% of international tourism consumption (Rasoolimanesh et al., 2021). Heritage tourism involves visiting locations, artifacts, and activities that genuinely reflect the narratives and individuals of both past and present (Jia et al., 2023). It enables visitors to interact with tangible and intangible cultural assets while delivering economic development, cultural preservation, and community revitalization advantages to destinations. The United Nations World Tourism Organization (UNWTO) recognizes heritage tourism as a significant aspect of global tourism, with over 40% of tourists selecting destinations based on cultural heritage attractions (Rasoolimanesh et al., 2021). Simultaneously, the global tourism industry is undergoing a significant digital transformation that fundamentally alters how destinations market, interact with travelers and provide tourism experiences. This transformation involves the methodical industrialization of data components, digital technologies, and diverse digital formats executed via networks, algorithms, and big data (Tran & Khoa, 2025). In this context, digital technologies, including artificial intelligence (AI), immersive technologies (AR/VR/MR), 3D modeling, blockchain, and social media platforms, are progressively utilized to improve visitor experiences and destination management in heritage tourism environments (Bui Thanh Khoa & Tran Trong Huynh, 2024).

The intersection of heritage tourism and digital transformation presents opportunities and challenges for destinations seeking to attract visitors and encourage repeat visitation. As Bec et al. (2019) note, there has been a qualitative shift in heritage tourism demand, moving beyond mere quantitative growth toward an increasing quest for meaningful cultural experiences. Digital technologies can enhance these meaningful experiences by providing personalized, interactive, and immersive engagement with heritage sites across the entire visitor journey—from pre-visit planning and on-site experiences to post-visit reflection and sharing (Liritzis et al., 2015).

Comprehending the determinants that influence return intentions among historic tourists is crucial for the sustainability and competitiveness of destinations. Revisit intention, characterized as an individual's readiness and willingness to make a repeat visit (Pai et al., 2021), constitutes a pivotal behavioral outcome for destinations, as retaining current visitors generally necessitates fewer marketing resources than acquiring new ones. Furthermore, devoted patrons who frequently return to destinations tend to participate in affirmative electronic word-of-mouth (eWOM), characterized as any positive or negative statements made by potential, actual, or former customers about a product or company, which is disseminated to a broad audience via the Internet (Filieri et al., 2021), thereby enhancing destination marketing initiatives. In the digital transformation era, heritage places progressively utilize digital technology, mainly social media marketing, to improve tourist experiences and encourage revisiting intentions. The intricate relationship among traditional destination qualities (e.g., destination image), experiential elements (visitor experience), and digital marketing tactics (social media marketing) in influencing heritage tourists' intent to revisit is not yet fully comprehended (Hung & Khoa, 2022). This study seeks to fill this void by formulating and empirically evaluating a comprehensive model that investigates these interconnections within the framework of heritage tourism and digital change.

Social media marketing has become increasingly vital in influencing visitor experiences and behavioral intents within the digital transformation framework. Digital technologies, mainly social media platforms, profoundly affect how tourists identify, interact with, and experience heritage places (Bui Thanh Khoa, 2024). Empirical research indicates that enhanced visitor involvement, frequently enabled by digital platforms, significantly influences the overall visitor experience and can elevate the level of MTE (Chen & Rahman, 2018). Additionally, social media platforms are essential conduits for data valuation within the digital economy, allowing heritage sites to gain insights about visitor preferences and behaviors through digital traces and interactions. The Technology-Destination Interaction (TDI) framework introduced by Jia et al. (2023) offers an extensive perspective for analyzing the dynamic relationship among technologies, travelers, tourism activities, and destinations throughout the three phases of travel consumption: pre-travel, during-travel, and post-travel. This approach highlights the capacity of digital technology to improve destination image and visitor experience while fostering interaction during physical visits, potentially affecting intentions to revisit. The tourism consumption system theory (Woodside & Dubelaar, 2002) asserts that tourists' evaluation of their destination experience affects their overall assessment of the destination and subsequent behavior, establishing a theoretical basis for comprehending how visitor experiences influence intentions to revisit.

Despite the increasing significance of legacy tourism and digital transformation in the global tourism sector, a substantial gap persists in comprehending how digital elements interact with traditional tourism frameworks to affect heritage tourists' intentions to revisit. Lin et al. (2024) note that the cultural and tourism sectors have been largely neglected in digital transformation research, primarily in manufacturing businesses. This oversight has led to a constrained comprehension of the impact of digital technologies, mainly social media marketing, on historic tourist experiences and plans to revisit them. Current studies have generally analyzed destination image, visitor experience, and digital marketing separately, without a cohesive framework that elucidates their intricate interconnections within heritage tourism settings. Furthermore, although prior research has identified connections between specific constructs, such as

destination image and visitor experience (Rasoolimanesh et al., 2021)(Rasoolimanesh et al., 2021) or visitor experience and revisit intention (Kim & Ritchie, 2014), limited empirical investigations have examined comprehensive models that integrate both traditional and digital elements influencing heritage tourists' intentions to revisit. The methods by which social media marketing affects revisit intentions in historic tourism are poorly comprehended. Although previous studies indicate that digital involvement may improve visitor experiences (Khoa et al., 2022), the potential direct and indirect impacts of social media marketing on intentions to revisit remain insufficiently investigated. The disparity is particularly noteworthy considering the growing investments that heritage places allocate to digital marketing tactics, frequently lacking definitive empirical evidence of their efficacy in promoting repeat behavior.

This study's main aim is to explore why customers return to heritage destinations within the context of digital transformation by creating and empirically validating an integrated model that analyzes the interconnections among destination image, visitor experience, social media marketing, and the intention to revisit the destination. This research enhances academic comprehension and practical management of historical tourism in the context of the digital revolution. It theoretically enhances understanding of how traditional tourism constructions interact with digital components to influence heritage tourists' experiences and behavioral intentions. It offers evidence-based recommendations for heritage destination managers aiming to utilize digital technology successfully to improve tourist experiences and promote return visits.

The subsequent sections of this work are structured as follows: Section 2 delineates the theoretical framework and formulates hypotheses grounded in the extant literature. Section 3 delineates the research approach, encompassing measuring scales, sampling strategies, and data-gathering processes. Section 4 delineates the empirical findings of hypothesis testing employing partial least squares structural equation modeling. Section 5 addresses the findings' theoretical and practical ramifications, recognizes limitations, and proposes avenues for future research.

2 Literature Review

2.1 Heritage Tourists and Digital Transformation

Heritage tourism involves visiting or engaging with places, artifacts, and activities that authentically represent the stories and people of the past and present (Guo et al., 2024). It represents a significant portion of cultural tourism, ranking among the largest, most widespread, and rapidly expanding segments of the tourism business. Bec et al. (2019) identified a qualitative transformation in heritage tourism demand, progressing from simple quantitative expansion to a heightened pursuit of significant cultural experiences.

Simultaneously, digital development has drastically changed the realm of historical tourism. In the swiftly changing global digital economy, nations emphasize the digital enhancement of their local industries, as the digital economy's contribution to GDP consistently increases and is anticipated to reach (Bui Thanh Khoa & Tran Trong Huynh, 2024). Digital transformation in heritage tourism is the methodical industrialization of data components, digital technologies, and diverse digital formats achieved through networks, algorithms, and big data (Lin et al., 2024). This transition incorporates advanced technologies, including artificial intelligence (AI), immersive technologies (AR/VR/MR), 3D modeling, blockchain, and big data analytics to elevate visitor experiences and optimize heritage site management (Tran & Khoa, 2025).

The incorporation of technology in historical tourism is evident throughout the entire visitor experience—pre-travel, during travel, and post-travel—generating novel chances for interaction and participation (Khoa, 2021). Knezevic et al. (2020) observed that digitizing the touristic experience has impacted heritage tourism's pre-travel, during-travel, and post-travel phases. Despite the extensive integration of digital technologies, the cultural and tourism sectors have been largely neglected in digital transformation studies, primarily on manufacturing industries.

2.2   Hypotheses development

The destination image, characterized as the aggregate of knowledge, beliefs, ideas, and general views a visitor holds regarding a location (Rasoolimanesh et al., 2021), profoundly impacts the perceptions and experiences of heritage tourists at sites. The cognitive aspect of destination image pertains to tourists' perceptions and understanding of a destination's characteristics, directly influencing their engagement with the location (Tienken et al., 2023). In the digital transformation era, destination image development has grown increasingly intricate, with digital technologies significantly influencing visitors' preconceptions and expectations. Prior research has established that destination image substantially influences tourist satisfaction and the quality of experience (Hoa, 2024). Kim and Ritchie (2014) examined the destination qualities linked to Memorable Tourism Experiences (MTE) and indicated that destination image directly affects MTE. The Technology-Destination Interaction (TDI) framework introduced by Jia et al. (2023) clarifies how digital technologies might improve destination image and influence tourist experience by generating immersive pre-visit expectations and enhancing on-site interactions. Therefore, this study posited the hypothesis:

H1: Destination Image has a positive impact on Visitor Experience in Heritage tourists

The visitor experience, especially when noteworthy, has become a significant predictor of behavioral intentions in historic tourism (Hoang & Khoa, 2024). Li et al. (2023) assert that experience is a significant predictor of visitor behavioral intent and greatly influences memory formation, which is the principal objective of tourism professionals. Empirical research robustly substantiates this link. Marschall (2012) asserts that tourists are more inclined to return to areas with significant experiences. B. T. Khoa (2024); Lu et al. (2022) discovered that tourists are inclined to revisit locations associated with favorable memories, whereas Pai et al. (2021) proposed that long-term recollections exert the most significant influence on visitors' intentions to return. In digital transformation, technology can improve memorable experiences via personalization, interactivity, and immersion (Tran & Khoa, 2025). Therefore, this study posited the hypothesis:

H2: Visitor Experience has a positive impact on Destination Revisiting Intention in Heritage tourists

Social media marketing has been essential in influencing visitor experiences in historical tourism, especially within the digital transformation framework. Digital technologies, mainly social media platforms, profoundly affect how tourists identify, interact with, and experience heritage places (Linh et al., 2024). Heritage locations can utilize social media platforms to generate captivating content, disseminate genuine narratives, and promote visitor engagement that enriches the whole experience.

Integrating social media marketing with extensive digital transformation efforts in cultural tourism enhances tourist engagement, a crucial element of the tourism experience (Hagerborn et al., 2024). Empirical research indicates that enhanced tourist interaction favorably influences the entire visitor experience and can elevate the quality of Memorable Tourism Experiences (Chen & Rahman, 2018; Khoa & Huynh, 2025). Social media marketing is an effective instrument for enhancing engagement, especially during the pre-trip and journey periods. Likewise, mobile applications and digital platforms promoted through social media can offer a more immersive, tailored, and easy experience for heritage tourists (Shahzad et al., 2023). Consequently, this study posited the hypothesis:

H3: Social media marketing has a positive impact on the Visitor Experience in Heritage tourists

Social media marketing profoundly affects the intention of heritage visitors to revisit destinations through various mechanisms within the digital transformation framework. According to Lin et al. (2024), social media platforms are essential conduits for enhancing data value in the digital economy, allowing heritage sites to get insights into visitor preferences and behaviors via their digital footprints and interactions. This insight enables destinations to customize their offers to align with visitor expectations, enhancing the

probability of repeat visits. Incorporating emerging technologies such as ChatGPT, the Metaverse, and Geo AI into social media marketing strategies significantly enhances the potential to influence revisitation intentions by establishing immersive virtual environments that sustain visitor engagement between physical visits (Zhang et al., 2025). These technologies enable tourists to socially 'return' to locations in virtual environments alongside other visitors, offering a more immersive post-trip experience than conventional social media sharing, thus reinforcing the bond between visitors and destinations. Consequently, this study posited the hypothesis:

H4: Social media marketing has a positive impact on Destination Revisiting Intention in Heritage tourists.

3 Method

The study employs established scales from prior tourism and digital transformation research, adapting them to the specific context of heritage tourism. All constructs were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), consistent with methodological approaches utilized in previous studies on heritage tourism experience. The scales were carefully selected to ensure content validity and reliability.

Destination image was conceptualized as the sum of knowledge, beliefs, ideas, and overall perceptions tourists have about a heritage destination (Ramseook-Munhurrun et al., 2015). This research modified three items that emphasize the cognitive aspect of the destination image. This component was chosen for its explicit visibility, conciseness, tangibility, and ability to convey information about a destination's uniqueness. The scale includes elements such as This cultural heritage monument, which has cultivated a positive reputation among its visitors and embodies its historical ambiance and cultural amalgamation. The visitor experience was defined as a multidimensional concept that captures the memorability of tourism encounters. This study, utilizing the Memorable Tourism Experiences (MTE) framework established by Tran and Khoa (2025), identified three critical dimensions pertinent to heritage tourism in a digital context: hedonism, local culture, and meaningfulness. MTE is characterized as a tourist experience that is pleasantly remembered and recalled post-event, selectively formed from tourism experiences based on the individual's evaluation of the experience. Examples of goods comprise I immersed myself in the local culture, engaged in a significant activity, and thoroughly appreciating this tourism experience. Social media marketing was assessed using a four-item scale from research on electronic word-of-mouth (eWOM) and digital engagement within tourism settings. According to Linh et al. (2024), eWOM is any affirmative or negative remarks made by prospective, current, or former customers regarding a product or company disseminated to a broad audience through the Internet. The intention to revisit the destination was assessed using a three-item scale modified by Lu et al. (2022). Revisit intention denotes an individual's preparedness and eagerness to return and is a significant behavioral intention in tourism studies. The scale comprises items, including the fact that I will revisit this location. If afforded the opportunity, I will return to this location, and the probability of my return to this heritage site for further heritage travel is high.

This study utilized a purposive sampling method to gather data from heritage visitors to investigate memorable tourism experiences within heritage settings. Purposive sampling was suitable since it enabled researchers to focus on visitors who had interacted with heritage sites and utilized digital technology during their trips. This methodology corresponds with recognized approaches in tourism research, especially when examining phenomena that necessitate specialized visitor experiences. The target market was visitors to five prominent heritage sites adopting diverse digital transformation projects, including immersive technology (AR/VR/MR), smartphone applications, and social media interaction tactics.

 Data were gathered by self-administered questionnaires delivered to tourists at designated heritage sites from May to August 2023. Before data collection, the questionnaire underwent thorough development and validation procedures. 285 questionnaires were disseminated, with 254 returned, yielding an 89.1% response rate. After assessing for completeness and eliminating questionnaires with significant missing data

(exceeding 10%) and straight-lining responses, 236 valid questionnaires were retained for analysis, yielding an effective response rate of 82.8%.

Table 1: Demographic Characteristics of Respondents (N=236)

Characteristic	Category	Frequency	Percentage (%)
Gender	Female	130	55.1
	Male	106	44.9
Age	18-24	42	17.8
	25-34	85	36
	35-44	65	27.6
	45-54	29	12.3
	55+	15	6.3
Education	High school or below	25	10.6
	Technical/vocational	50	21.2
	Undergraduate degree	102	43.2
	Postgraduate degree	59	25
Heritage site visits (past year)	None	28	11.9
	1-2 times	100	42.4
	3-5 times	84	35.6
	More than 5 times	24	10.1
Social media usage	Daily	172	72.9
	Several times weekly	51	21.6
	Occasionally	13	5.5

Subsequent to data collection, partial least squares structural equation modeling (PLS-SEM) was utilized for data analysis. PLS-SEM was considered suitable because of its capacity to manage intricate models with numerous constructs and its resilience with non-normally distributed data (Hair et al., 2017). The investigation utilized SmartPLS 4.0 software, employing a two-stage analytical approach: initially examining the measurement model for reliability and validity, followed by evaluating the structural model to test the proposed relationships.

4   Results and Discussion

4.1   Results

The reliability and convergent validity of the measuring model were evaluated using four principal metrics: individual item loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). Table 2 demonstrates that the outer loadings of all measuring items surpassed the threshold of 0.708, varying from 0.732 to 0.921, hence confirming adequate item dependability. The minimum outer loading values were 0.812 for Destination Image (DEI), 0.834 for Visitor Experience (VIE), 0.732 for Social Media Marketing (SMM), and 0.868 for Destination Revisiting Intention (DRI).

Cronbach's alpha scores for all constructs significantly exceeded the recommended threshold of 0.7, ranging from 0.832 to 0.911, signifying good internal consistency dependability. Composite reliability (CR) ratings, offering a more rigorous assessment of internal consistency than Cronbach's alpha, varied from 0.889 to 0.926, all beyond the recommended threshold of 0.7.

Table 2: Reliability and Convergent Validity Assessment

Construct	Outer Loadings (Min-Max)	Cronbach's Alpha	CR	AVE
Destination Image (DEI)	0.812-0.876	0.87	0.911	0.718
Visitor Experience (VIE)	0.834-0.912	0.852	0.909	0.769
Social Media Marketing (SMM)	0.732-0.904	0.832	0.889	0.667
Destination Revisiting Intention (DRI)	0.868-0.925	0.882	0.926	0.808

The average variance extracted (AVE) values for all constructs surpassed the suggested criterion of 0.5, varying from 0.667 to 0.808, signifying that each construct accounts for over 50% of the variance in its indicators. The highest AVE recorded was on Destination Revisiting Intention (0.808), indicating that this construct possesses the greatest convergent validity among the four constructs in the model.

The elevated reliability and convergent validity metrics identified in this study demonstrate that the measurement scales effectively encapsulate the intended constructs within the realm of historic tourism. This is especially significant due to the multifaceted character of terms such as visitor experience in heritage tourism contexts. The uniformity in measurement qualities across all four constructs reinforces the reliability of the research instrument and bolsters trust in subsequent hypothesis testing.

Discriminant validity, which confirms the empirical distinctiveness of each construct within the model, was evaluated using the Fornell-Larcker criterion, as illustrated in Table 3. This table demonstrates that the square root of the AVE for each construct (indicated in bold on the diagonal) exceeds its correlation with any other construct in the model. The square root of AVE for Destination Image (0.847) exceeds its correlations with Visitor Experience (0.689), Social Media Marketing (0.485), and Destination Revisiting Intention (0.607). This pattern applies universally to all constructs, demonstrating that each construct exhibits greater variance with its indicators than with other constructs in the model.

Table 3: Discriminant Validity Assessment - Fornell-Larcker Criterion

| Construct	DEI	VIE	SMM	DRI
Destination Image (DEI)	**0.847**			
Visitor Experience (VIE)	0.689	**0.877**		
Social Media Marketing (SMM)	0.485	0.567	**0.817**	
Destination Revisiting Intention (DRI)	0.607	0.712	0.635	**0.899**

Note: The bold diagonal elements represent the Average Variance Extracted (AVE) square root. Off-diagonal elements represent the correlations between constructs.

Before examining the structural relationships, the Variance Inflation Factor (VIF) assessed collinearity among the predictor constructs. As shown in Table 4, the VIF values for all predictor constructs ranged from 1.308 to 2.748, well below the threshold of 5, indicating the absence of problematic collinearity. The highest VIF (2.748) was observed for the path from Social Media Marketing to Destination Revisiting Intention, indicating a moderate degree of shared variance with other predictors but still within acceptable limits. The relatively low VIF values confirm that multicollinearity is not a concern in this model, allowing for reliable estimation of path coefficients and their statistical significance.

Table 4: Collinearity Assessment (VIF) and Effect Sizes (f²)

Relationship	VIF	Path Coefficient	t-value	p-value	f²
DEI → VIE	1.308	0.573	8.427	<0.001	0.487
VIE → DRI	1.947	0.487	6.328	<0.001	0.412
SMM → VIE	1.308	0.289	4.126	<0.001	0.124
SMM → DRI	2.748	0.262	3.865	<0.001	0.135

Table 4 presents the path coefficients, t-values, p-values, and effect sizes (f^2) for all proposed associations, whereas Figure 1 illustrates the entire model with path coefficients. All proposed associations were positive and statistically significant at $p < 0.001$, robustly supporting all four hypotheses.
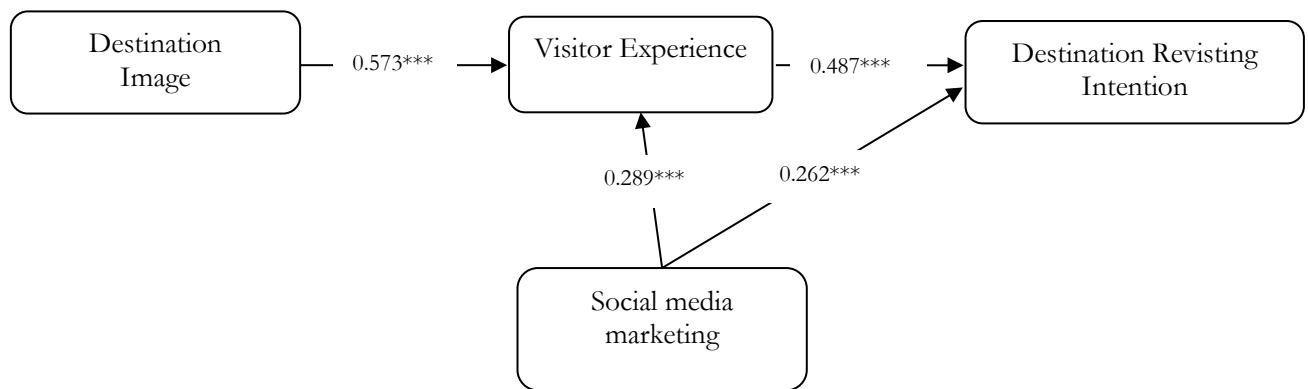
Figure 1: PLS-SEM model with path coefficients (***p<0.001)

Hypothesis 1 (H1), which posited that Destination Image positively influences Visitor Experience among heritage visitors, received robust support with a path coefficient of 0.573 (t = 8.427, p < 0.001). A favorable destination image significantly improves the visitor experience at heritage sites. The effect size ($f^2 = 0.487$) is deemed significant per Cohen (2013), underscoring the practical importance of destination image for visitor experience. Hypothesis 2 (H2), positing that Visitor Experience positively influences Destination Revisiting Intention among heritage tourists, received robust support with a path coefficient of 0.487 (t = 6.328, p < 0.001). The effect size for this connection is substantial ($f^2 = 0.412$), signifying that a memorable visitor experience is a significant determinant of plans to revisit heritage sites. Hypothesis 3 (H3), which posited that Social Media Marketing positively influences the Visitor Experience among heritage visitors, was corroborated with a path coefficient of 0.289 (t = 4.126, p < 0.001). The effect size for this connection is minor to medium ($f^2 = 0.124$), indicating that although social media marketing favorably affects visitor experience, its influence is less significant than that of the destination image. Hypothesis 4 (H4) posited that Social Media Marketing positively influences Destination Revisiting Intention among heritage tourists, a claim substantiated by a path coefficient of 0.262 (t = 3.865, p < 0.001). The effect size for this association is minor to medium ($f^2 = 0.135$), signifying that social media marketing directly impacts revisit intentions, surpassing its indirect effects via visitor experience. The model's explanatory capability was evaluated by the coefficient of determination (R^2), while its predictive relevance was examined using Stone-Geisser's Q^2 values, as presented in Table 5. The R^2 score for Visitor Experience is 0.583, signifying that roughly 58.3% of the variance in visitor experience is accounted for by destination image and social media marketing. Hair et al. (2019) assert that this R^2 value signifies considerable explanatory strength in tourism research. The R^2 value for Destination Revisiting Intention is 0.678, signifying that roughly 67.8% of the variance in revisit intentions is accounted for by visitor experience, social media marketing, and the direct influence of the destination image. The elevated R^2 value indicates the model's robust explanatory capacity for forecasting heritage tourists' plans to revisit.

Table 5: R² and Q² Values

Endogenous Construct	R²	R² Adjusted	Q²
VEI	0.583	0.579	0.445
DRI	0.678	0.674	0.539

The Q^2 values, obtained through a blindfolding procedure with an omission distance of 7, are 0.445 for Visitor Experience and 0.539 for Destination Revisiting Intention. According to Hair et al. (2019), Q^2 values

greater than 0 indicate the model has predictive relevance for the endogenous constructs, with values above 0.35 indicating immense predictive relevance. The Q^2 values in this study substantially exceed this threshold, demonstrating that the model has strong predictive relevance for both visitor experience and revisit intentions.

4.2 Discussion

The findings supported H1, demonstrating that destination image significantly influences visitor experience in heritage tourism contexts ($\beta = 0.573$, $p < 0.001$, $f^2 = 0.487$). This substantial effect aligns with the theoretical foundation established by Kim and Ritchie (2014) and extends understanding within the digital transformation era. The Technology-Destination Interaction framework proposed by Jia et al. (2023) helps interpret this finding, suggesting digital technologies enhance destination image and subsequently impact visitor experience by creating immersive pre-visit expectations and enriching on-site interactions. Interestingly, destination image exerts both direct and indirect effects on revisit intentions, with the indirect effect through visitor experience being stronger, underscoring the pivotal role of experiential factors in heritage tourism (Long et al., 2023).

In support of H2, visitor experience strongly influenced destination revisiting intention ($\beta = 0.487$, $p < 0.001$, $f^2 = 0.412$), highlighting the critical role of memorable experiences in driving heritage tourists' behavioral intentions. This finding corroborates Manyangara et al. (2023); Rasoolimanesh et al. (2021) assertion that tourists intend to revisit places they have good memories of, specifically within heritage tourism and digital transformation contexts. The relationship can be theoretically grounded in tourism consumption system theory (Woodside & Dubelaar, 2002), which posits that tourists' evaluation of the destination experience influences their overall destination assessment and subsequent behavior. The importance of visitor experience in driving revisit intentions is further amplified in the digital transformation era, where technologies can significantly enhance these memorable experiences through personalization, interactivity, and immersion.

The significant positive effect of social media marketing on visitor experience ($\beta = 0.289$, $p < 0.001$, $f^2 = 0.124$) confirmed H3, aligning with the findings of Chen and Rahman (2018); Hang et al. (2023)) that better visitor engagement positively affects the overall visitor experience. The small to medium effect size indicates that while social media marketing positively influences visitor experience, its impact is less pronounced compared to the destination image. This finding is consistent with the hierarchy of effects in tourism experience formation, where destination attributes often have primacy in shaping experiences, with digital elements serving as enhancers rather than primary determinants (B. T. Khoa & T. T. Huynh, 2024). The multi-group analysis revealed that digitally engaged tourists were more responsive to social media marketing in their experience formation, highlighting the importance of audience segmentation in digital marketing strategies.

The direct effect of social media marketing on destination revisiting intention ($\beta = 0.262$, $p < 0.001$, $f^2 = 0.135$), confirming H4, represents a novel contribution to the literature, suggesting social media marketing influences revisit intentions through multiple mechanisms: by enhancing visitor experience and by directly influencing revisit intentions through ongoing digital engagement (Wang & Luo, 2024). This finding aligns with Jia et al.'s (2023) observation that emerging technologies integrated with social media marketing strategies offer significant potential for influencing revisitation intentions by maintaining visitor engagement between physical visits.

5 Conclusion

This study makes several significant theoretical contributions to heritage tourism and digital transformation literature. First, it advances understanding the interplay between traditional tourism constructs (destination image and visitor experience) and digital elements (social media marketing) in shaping heritage tourists' revisit intentions. By empirically testing an integrated model that incorporates both traditional and digital

factors, this research responds to Lin et al. (2024) observation that the cultural and tourism sectors have been relatively overlooked in digital transformation research. Our findings demonstrate that digital transformation, mainly through social media marketing, significantly influences heritage tourism's experiential and behavioral dimensions, providing a more comprehensive theoretical framework for understanding heritage tourism in the digital era. Second, this research contributes to the evolving theoretical conceptualization of memorable tourism experiences in heritage contexts. As Rasoolimanesh et al. (2021) noted, the knowledge of potential influencers of MTE in the context of heritage tourism is limited, and the MTE framework is context-based (Sthapit et al., 2022). Our study addresses this gap by identifying destination image and social media marketing as significant antecedents of the visitor experience in heritage tourism, with destination image having a powerful influence. Moreover, our findings on the strong relationship between visitor experience and revisit intention extend the theoretical understanding of the behavioral consequences of MTE in heritage tourism, supporting and expanding upon previous work by Kim and Ritchie (2014). Third, this research advances the theoretical understanding of the mechanisms through which digital transformation influences heritage tourism by empirically testing the direct and indirect effects of social media marketing on revisit intentions. The finding that social media marketing impacts revisit intentions directly and indirectly through visitor experience extends existing theoretical frameworks that typically posit a fully mediated relationship between marketing efforts and behavioral intentions. This dual-path influence suggests a more complex theoretical model of how digital marketing affects tourism behavior, with implications for broader technology adoption theories and consumer behavior in digital contexts. Furthermore, the differential impact of social media marketing across tourist segments with varying levels of digital engagement, revealed in our post-hoc analysis, contributes to the theoretical understanding of heterogeneity in tourists' responses to digital transformation initiatives, addressing the call of Jia et al. (2023) for more nuanced theoretical models that account for individual differences.

From a practical perspective, this research offers valuable insights for heritage tourism managers and marketers seeking to enhance visitor experiences and encourage repeat visitation in the digital era. First, the strong influence of destination image on visitor experience underscores the importance of cultivating and maintaining a positive image of heritage sites. Heritage site managers should highlight their sites' unique historical, cultural, and architectural elements in their marketing communications, as these attributes significantly shape visitors' experiences. The authenticity of heritage sites, which contributes to the destination image, substantially impacts visitors' experiences and behavioral intentions. Heritage site managers should prioritize experience design and delivery to enhance revisit intentions while maintaining strong destination images. Second, the significant effects of social media marketing on both visitor experience and revisit intention highlight the importance of developing comprehensive digital marketing strategies for heritage sites. Heritage site managers should leverage social media platforms to engage with potential and past visitors, share authentic stories about the site's history and cultural significance, and facilitate visitor interactions. These digital engagement efforts can enhance visitors' experiences during their visit and maintain their connection with the site after their visit, ultimately influencing their decision to return. Emerging technologies integrated with social media can create immersive virtual environments that maintain visitor engagement between physical visits, strengthening the connection between visitors and destinations. Third, the finding that visitor experience strongly influences revisit intention highlights the importance of creating memorable, engaging, and authentic experiences for heritage tourists. Heritage site managers should focus on enhancing the experiential aspects of heritage tourism, such as storytelling, interactive exhibits, educational programs, and authentic cultural immersion, to create more memorable experiences for visitors. Digital technologies can be crucial in enhancing these experiences, highlighting how AR, VR, and other immersive technologies can significantly improve visitors' learning outcomes and engagement with heritage sites. The decisive mediating role of visitor experience in the relationship between destination image and revisit intention further emphasizes the importance of translating positive destination

images into actual memorable experiences at heritage sites. Fourth, the multi-group analysis results, which revealed more substantial effects of social media marketing for digitally engaged tourists, suggest the need for segmented digital marketing strategies. Heritage site managers should recognize the heterogeneity in visitors' digital engagement levels and develop targeted marketing approaches for different segments. For digitally savvy visitors, comprehensive social media campaigns, immersive virtual experiences, and interactive digital content can significantly enhance their experience and influence their revisit intentions. For less digitally engaged visitors, traditional marketing channels and on-site digital experiences with lower barriers to entry may be more effective.

This study offers significant insights into the determinants affecting heritage visitors' intents to revisit within the context of digital transition; nevertheless, numerous limitations must be recognized, which also create avenues for further research. The cross-sectional design of the data restricts causal inferences and fails to reflect the temporal evolution of visitor experiences and behavioral intentions. Future research may utilize longitudinal designs to investigate the impact of digital engagement with heritage sites on return behaviors over prolonged durations, especially considering the growing significance of sustaining visitor engagement through digital channels between physical visits. The emphasis on five heritage sites within a particular geographic context may restrict the applicability of findings to other heritage tourism scenarios; thus, cross-cultural comparative studies could elucidate how cultural factors influence the relationships identified in this research, particularly in light of the cultural specificity of heritage tourism experiences. Notwithstanding the methodological safeguards implemented, reliance on self-reported measures for all constructs may still engender common method bias; subsequent research could integrate objective data from social media analytics, visitor tracking systems, and actual revisit behavior to enhance the validity of the findings. This study analyzed social media marketing as a cohesive entity. Future research could decompose this variable to examine the distinct effects of particular social media platforms, content types, and engagement strategies of emerging technologies such as ChatGPT, Metaverse, and Geo AI, which present novel opportunities for heritage tourism marketing. Ultimately, while our study examined the moderating effect of digital engagement levels in a post hoc analysis, future research should more rigorously explore additional potential moderators, including age, cultural background, travel motivation, and technology readiness, that may impact the efficacy of digital transformation initiatives in heritage tourism settings.

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