

Personalisation in tourism: The role of mobile technology and artificial intelligence in enhancing visitor experience - Evidence from Hoi An Ward

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Abstract:

Mobile technology and artificial intelligence (AI) have become increasingly important in tourism. Their integration allows destinations to better understand tourist needs and deliver more relevant forms of support. This study examines the role of mobile technology and AI in shaping tourist experiences in Hoi An Ward, with particular attention to how personalised travel experiences in a heritage destination are formed, perceived and interpreted. To address these objectives, the research employs a primarily quantitative exploratory descriptive design informed by a preliminary qualitative phase of expert interviews. Survey results from 144 tourists indicate that although visitors demonstrate a relatively high level of interest in AI-supported travel assistance, the value of personalisation lies not only in technological responsiveness, but also in its capacity to enhance tourists' sense of meaning and connection with the heritage setting. The preliminary qualitative phase further provides contextual insight into the cultural specificity of Hoi An and the practical conditions under which personalisation can be understood as an interpretive experiential process embedded within the destination context, thereby contributing to a more cautious and in-depth approach to technology integration in heritage tourism. These findings provide exploratory evidence from Hoi An Ward for future research on AI-supported personalisation in heritage tourism.

Keywords: artificial intelligence in tourism, Hoi An Ward tourism, mobile technology in tourism, personalisation, tourist experience.

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1. Introduction

Tourism is widely regarded as a strategic “smokeless industry”, functioning as a cross-sectoral springboard for employment and economic diversification [1]. Recent UNWTO data highlight a significant resurgence in global mobility, with international arrivals reaching 1.3 billion [2], indicating why tourism has become a prioritised sector in many countries. Contemporary travel patterns increasingly depend on mobile ecosystems for journey navigation [3], creating a need for destinations to integrate technology in ways that better align with individual visitor needs. However, much existing research on personalisation in tourism has largely focused on technology and consumer behaviour [4, 5], while insufficiently considering heritage contexts, where experiences are intertwined with historical spaces, community life and intangible cultural values. Since this study also examines tourists’ readiness to accept AI-supported applications, it adopts a technology-acceptance perspective alongside an experiential one [6, 7].

From the perspective of the experience economy, tourism value is created through memorable experiences shaped within a specific setting rather than through service efficiency alone [8]. Therefore, personalisation in a heritage destination should not be reduced to technical optimisation, but must remain sensitive to visitors’ experiential autonomy and the socio-cultural authenticity of the destination.

This study addresses that gap by approaching AI not as a prescriptive authority, but as a mediating layer that may support tourists’ engagement with the cultural rhythm of Hoi An Ward. As a UNESCO-recognised World Heritage destination, Hoi An Ward is a relevant case because visitors’ experiences are shaped by technological factors, heritage urban structure and local community life.

The objective of this study is to identify the role of mobile technology and AI in facilitating personalised travel experiences in Hoi An Ward. On that basis, this study raises the research question: “How can AI facilitate personalised travel experiences in a heritage destination like Hoi An Ward while preserving the destination’s socio-cultural authenticity and the visitor’s experiential autonomy?”

2. Research methods

2.1. Research area

The study was conducted in Hoi An Ward, Da Nang City. Historically, a trading hub connecting the Sa Huynh Culture with international maritime routes, Hoi An was recognised as a UNESCO World Cultural Heritage site in 1999 and currently preserves over 1,350 heritage assets. Statistical data show transformative growth, with visitor arrivals surging from 202,000 in 1999 to 4.426 million by the end of 2024. Despite this success, recent scholarship suggests the market requires qualitative catalysts, such as “personalised travel experiences”, to maintain its competitive edge [9, 10]. Therefore, this setting provides a relevant context for evaluating how AI can be harmoniously embedded within a sensitive socio-cultural context without diminishing its authenticity.

2.2. Sampling and sample size

The study adopts a non-probability convenience sampling technique [11]. This approach was selected because the target population consists of tourists in an open-access heritage destination where visitors are highly mobile, dispersed across multiple locations and difficult to capture through a stable sampling frame.

Accordingly, this study is positioned as an exploratory descriptive study rather than as a population-representative survey. The final valid sample (n=144) was therefore used to identify and describe patterns of tourists’ perceptions, technology-use habits and interest in AI-supported personalisation in Hoi An Ward.

2.3. Research design and data collection

The study employed a primarily quantitative cross-sectional design informed by a preliminary qualitative phase of expert interviews. The qualitative phase was used to clarify the cultural-tourism context of Hoi An, identify key conditions affecting the meaningful application of personalisation and support the interpretation of the subsequent survey findings. Data collection was conducted from January 2025 to June 2025 through both direct (face-to-face) and indirect (Google Forms) methods.

The survey participants were domestic and international tourists who had travelled to Hoi An within the most recent six months, in order to ensure the accuracy of experiential recall and reduce recall bias.

2.4. Preliminary qualitative phase: Expert interviews

A preliminary qualitative phase was conducted through face-to-face semi-structured interviews with five experts from fields relevant to the study, including

culture and heritage, tourism and services, UX and design, and software/system development. Each interview lasted between 30-60 minutes and focused on personalisation in the context of cultural tourism in Hoi An Ward, the potential role of mobile technology and AI in improving tourist experience and identifying foundational conditions affecting the effectiveness of personalisation, including socio-cultural context, user behaviour, information reliability and practical conditions of use (Table 1). The interview data were summarised, coded by participant (E1-E5) and reviewed thematically in order to extract recurring insights that could support the interpretation of the quantitative findings.

Table 1. Summary of expert interview participants.

Code	Participant type	Expertise area	Broad professional role
E1	Expert	Culture/heritage	Museum/heritage specialist
E2	Expert	Art/design education	Academic specialist
E3	Expert	Tourism service	Tourism practitioner
E4	Expert	UX/design	Design specialist
E5	Expert	Software/system development	Technical specialist

2.5. Survey instrument and scale structure

The survey instrument was a bilingual (Vietnamese-English) questionnaire designed to capture a multi-dimensional view of the tourist experience in Hoi An Ward. To improve content and contextual validity, the survey design was informed by the preliminary expert interview phase described above. A pilot test (n=15) was also conducted prior to the primary data collection. Feedback from the pilot participants led to minor linguistic adjustments to ensure the terminology was accessible to a broad range of domestic and international tourists.

The final questionnaire was structured into five primary sections: demographic information and trip characteristics; difficulties when travelling in Hoi An; mobile application usage habits and AI acceptance (DA); interest in tourism-support applications in Hoi An (APN); and inconveniences in using tourism applications (INC).

The DA section used a 5-point Likert scale to assess the frequency of using travel apps, virtual assistant usage, demand for preference-based recommendations and readiness to adopt an AI-supported assistant specifically for Hoi An. In this study, the

four DA items were treated as conceptually related indicators for exploratory descriptive interpretation and a preliminary internal consistency check, rather than as a fully validated latent construct.

The APN section captured the practical value tourists attach to AI-supported functions such as real-time Q&A, AI-generated destination and cultural recommendations, verified reviews and mobility support within the heritage urban structure. The INC section captured usability barriers, including irrelevant recommendations, difficult-to-use interfaces, lack of support and missing features.

Accordingly, the instrument does not measure a formal TAM model, but it allows the study to interpret tourists' responses through a TAM-informed lens in relation to usefulness, usability and adoption readiness [6, 7]. All participants were informed of the research objectives and data collection strictly followed protocols for respondent anonymity and voluntary participation.

2.6. Data processing and analysis methods

After data collection, the qualitative interview material and the quantitative survey data were processed separately in accordance with their respective analytical purposes. These qualitative insights were used to support the interpretation of the quantitative findings rather than to serve as a standalone qualitative results strand. Based on the quantitative survey data collected, invalid questionnaires were removed and the remaining data were analysed using SPSS software.

The analytical steps included: descriptive statistics to present sample characteristics, Cronbach's Alpha reliability testing for the four-item digital acceptance (DA) scale, one-way ANOVA to examine differences across respondent groups and mean and standard deviation analysis to clarify trends in personalised tourism and AI acceptance levels within the survey context.

Given the non-probability sampling strategy, the statistical analysis was used primarily to describe patterns within the surveyed sample and to support exploratory interpretation, rather than to make population-level generalisations beyond the study context. In addition, the DA items were interpreted at the item level for exploratory descriptive purposes, with Cronbach's Alpha reported only as a preliminary internal consistency check.

3. Theoretical foundations and conceptual framework

3.1. Theoretical foundations

3.1.1. User experience (UX)

According to the ISO standard (2019), “UX is a person’s perceptions and responses that result from the use or anticipated use of a system, service or product” [12]. Existing literature suggests that UX is fundamentally linked to emotional factors such as joy, happiness, excitement and visual appeal [13]. Furthermore, B. Solis (2015) [14] defines UX as the way an individual responds when interacting with a product, system or service. These perspectives underscore that UX transcends technical specifications, functioning as a holistic construct encompassing perceptions, emotions and expectations throughout the digital interaction.

Current tourism research on UX generally follows two primary trajectories: one prioritises functional efficiency and decision-making support, while the other explores emotional dimensions, positioning UX as a mediator for satisfaction, revisit intentions and destination advocacy. However, both approaches often isolate the user-system relationship from the socio-cultural landscape. From the perspective of the Experience Economy, value is created not merely through service delivery but through the staging of memorable experiences within a specific setting [8]. B. Schmitt (1999) [15] further argues that experiential value is generated through sensory, affective, cognitive, behavioural and relational dimensions, while A. Walls, et al. (2011) [16] emphasise that hospitality and tourism experiences are context-dependent and shaped by the interaction among the physical environment, human encounters, situational factors and personal meaning-making. In this sense, UX in tourism should not be viewed only as interface efficiency, but also as part of the broader experiential value that tourists derive from engaging with place.

In Hoi An Ward, UX must be conceptualised as a context-dependent experience. “UX is the outcome of users’ internal states, system characteristics and the interaction context” [17]. In a heritage setting, experiences are shaped by interactions among tourists, physical spaces, cultural contexts and local social practices. Therefore, UX in Hoi An is not merely an interface concern but an interpretive process where technology

serves as an intermediary layer supporting engagement with cultural values while remaining sensitive to the rhythms, meanings and lived character of the destination.

3.1.2. Personalisation

Personalisation optimises experiences by aligning service with individual preferences, thereby enhancing loyalty. J. Kramer, et al. (2000) [18] categorise personalisation as a suite of tools and technologies used to design end-user experiences. At the technical level, this understanding of personalisation is rooted in the logic of recommender systems, which are designed to generate suggestions by matching user data, preferences and behavioural patterns [4]. Within the broader development of smart tourism, such forms of personalisation are increasingly embedded in data-driven tourism environments where destinations, technologies and users interact through digital infrastructures [5].

However, subsequent studies suggest that personalisation becomes more meaningful when recommendations are perceived as relevant within the specific context of use [19]. This distinguishes data-driven personalisation, which focuses on algorithmic efficiency, from experience-oriented personalisation, which emphasises contextual relevance and perceived meaning. In this study, personalisation is therefore understood not only as a technical output, but also as a form of support whose value depends on whether tourists perceive it as relevant and meaningful within their travel experience.

This perspective is particularly appropriate in Hoi An Ward, a cultural tourism space within a living heritage environment. In this setting, experiential value does not arise only from knowing where to go or what to do, but also from how visitors actively engage with the destination and co-create meaning through personalised experiences [20]. Therefore, personalisation in Hoi An becomes meaningful only when technology does not replace direct experience, but instead supports visitors in reaching the cultural depth of the destination in ways that are better aligned with their motivations and needs [19].

While personalisation is generally viewed positively, excessive reliance on AI-driven algorithms may lead to the homogenisation of experiences, potentially diminishing the spontaneity essential to heritage exploration. In the smart tourism era, Z. Torabi, et al. (2022) [21] emphasise the role of AI in predicting tourists' needs based

on behavioural data. Yet in a heritage destination such as Hoi An Ward, personalisation should not be reduced to algorithmic efficiency alone, but should also support the ways in which tourists interpret and connect with local culture. This is particularly important in heritage tourism, where visitors may seek meaningful and authentic engagement with place rather than efficient recommendation alone [22].

This perspective is also consistent with foundational heritage tourism scholarship. Heritage tourism is not simply tourism that takes place at heritage sites, but involves the management, interpretation and presentation of heritage in ways that shape how visitors encounter cultural value within a destination [23]. In heritage cities, cultural meanings are not always singular or neutral, which makes context-sensitive interpretation especially important [24]. Therefore, in the case of Hoi An Ward, personalisation should not merely optimise travel choices, but should help visitors access, interpret and connect with the cultural meanings that distinguish the destination as a living heritage space.

3.2. Conceptual framework

Based on the two core concepts of UX and personalisation, this study proposes a conceptual framework to analyse the role of mobile technology and AI in enhancing tourist experiences in Hoi An Ward (Fig. 1).

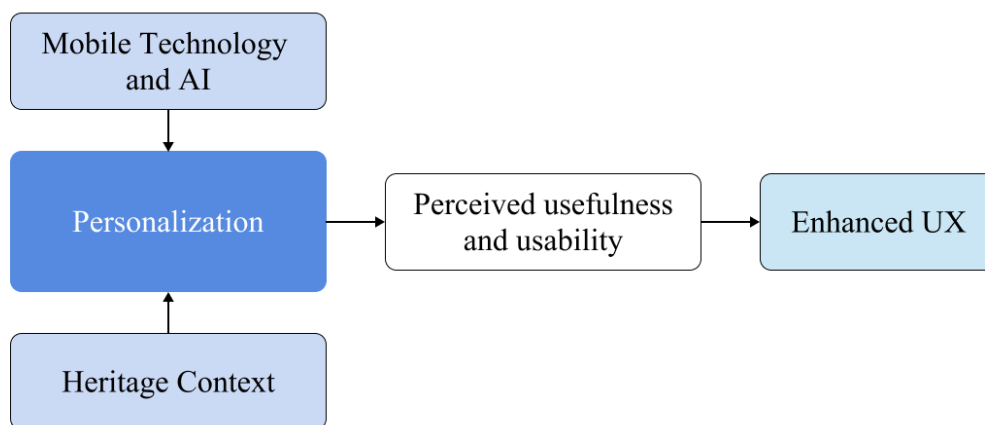


Fig. 1. Conceptual framework of the study.

Mobile technology and AI serve as the technical foundation for personalising travel experiences by processing data on tourists' behaviours, preferences and needs. On that basis, they generate individualised information and recommendations that influence how users perceive, interact with and evaluate their journey from the planning stage to

the on-site experience. Within this framework, the effect of AI-supported personalisation is not assumed to be automatic, but is interpreted through tourists' evaluations of the usefulness and usability of digital support across different stages of the journey [6].

When applied to the case of Hoi An Ward, this framework positions the socio-cultural context as a critical contextual condition. In a heritage destination, tourist experiences are shaped not only by digital interaction but also by the physical environment, local rhythms of life and the meanings attached to cultural space. Therefore, personalisation should connect individual experiences with local heritage in ways that respect the destination's cultural identity and support meaningful engagement with place. Within this logic, tourists' readiness to accept AI-assisted services depends not only on their interest in personalisation, but also on whether such services are perceived as useful, usable and appropriate to the heritage context.

Accordingly, UX in this study is conceptualised as the outcome of the interaction among AI-supported digital tools, personalisation and the heritage-destination context. The value of AI does not lie solely in recommendation accuracy, but also in whether the support provided is relevant, non-intrusive and meaningful within the visitor's experience of Hoi An Ward. In this study, the travel experience is understood as a process that extends from the early stage of trip inspiration and information search, to planning, on-site engagement and post-trip reflection. Such an approach is especially important in a destination where many tourists seek cultural learning, place-based interpretation and flexible support during relatively short stays.

On this basis, the conceptual framework is used to clarify the relationships among mobile technology and AI, personalisation support and UX within the context of Hoi An Ward. It also incorporates a behavioural adoption perspective by considering how perceived usefulness, usability and readiness to adopt influence tourists' responses to AI-assisted services. It therefore guides the design of the quantitative questionnaire by focusing on tourists' application usage habits, interest in personalised support, the perceived usefulness of AI-supported functions, usability-related barriers and readiness to accept AI-assisted services while travelling in the heritage destination.

4. Results and discussion

4.1. Qualitative insights from expert interviews

Drawing on five expert interviews (Table 1), the qualitative phase suggests that personalisation in Hoi An Ward should not be understood merely as a technical function, but as a process shaped by context, user behaviour and the cultural specificity of the destination.

The experts emphasised three conditions for meaningful personalisation: practical value, including tourism utility, ease of use, reliable information and system stability; the creation of destination-specific value through local cultural identity; and AI-supported assistance that can adapt to user behaviour, travel purpose, time constraints, budget and practical conditions of use. These qualitative insights provide contextual grounding for the interpretation of the quantitative findings presented in the following sections.

4.2. Demographic information

Descriptive demographic statistics are presented to provide context for analysing travel behaviours and tourism experiences in Hoi An Ward.

Table 2. Descriptive statistical results of the distribution of respondents' origin.

Coding	Category	Frequency	Valid percentage (%)
OR1	Domestic tourists (Vietnam)	76	52.8
OR2	International tourists	64	44.4
OR3	Local residents & workers	4	2.8
Total		144	100

The distribution of respondents' origin (OR) (Table 2) consists of n=144 valid observations. Domestic tourists (OR1) represent the majority at 52.8%, followed by international tourists (OR2) at 44.4% and local residents or workers (OR3) make up 2.8%. These results indicate that the surveyed sample includes the main groups involved in tourism activities within the heritage site.

Table 3. Descriptive statistical results of the occupations of survey respondents.

Coding	Occupation	Frequency	Valid percentage (%)
OC1	Students	28	19.4
OC2	Office employees	56	38.9

OC3	Freelancers	25	17.4
OC4	People working in the tourism industry	12	8.3
OC5	Artists, content creators	15	10.4
OC6	Others	8	5.6
Total		144	100

For occupation (Table 3), office employees (OC2) account for the highest proportion (38.9%). The presence of other categories, including students, freelancers, tourism workers and content creators indicates relatively diverse composition of the survey sample across different respondent groups, which is appropriate for the diverse tourism context of Hoi An.

Table 4. Descriptive statistical results of the age distribution of survey participants.

Coding	Age group	Frequency	Valid percentage (%)
AG1	Under 18 years old	3	2.1
AG2	18-35 years old	112	77.8
AG3	36-60 years old	26	18.1
AG4	Over 60 years old	3	2.1
Total		144	100

Regarding age (AG) (Table 4), the dominant group is 18-35 years old (AG2) at 77.8%, followed by the 36-60 years old (AG3) at 18.1%. This suggests that the surveyed sample is concentrated in younger and middle-aged groups, who are also more likely to use mobile technology and tourism applications during travel.

Table 5. Descriptive statistical results of the frequency of visits to Hoi An by survey participants.

Coding	Number of visits to Hoi An	Frequency	Valid percentage (%)
FR1	First time	82	56.9
FR2	Many times (more than twice)	62	43.1
Total		144	100

The data on visit frequency (Table 5) show that first-time visitors (FR1) comprise 56.9% of the sample, while 43.1% have visited Hoi An more than twice (FR2).

4.3. Travel experience and length of stay

The descriptive statistical results of tourists' travel experience characteristics were analysed based on the length of stay in Hoi An (Table 6).

Table 6. Descriptive statistical results of the length of stay in Hoi An.

Coding	Length of stay	Frequency	Valid percentage (%)
RV1	Day trip	30	20.8
RV2	1 - 2 days	41	28.5
RV3	3 - 4 days	51	35.4
RV4	More than 4 days	22	15.3
Total		144	100

The findings show that the 3-4-day group (RV3) accounts for the highest proportion at 35.4%, followed by the 1-2-day group (RV2) at 28.5%. When combined with day trippers (RV1), these results indicate that a substantial proportion of tourists spend only a relatively short time in Hoi An. This temporal pattern suggests a practical need for quick, accurate and itinerary-appropriate information during the trip. In this context, the demand for efficient forms of support, including AI-assisted mobile applications, may become more pronounced because visitors with limited time are more likely to value tools that help them organise and prioritise their travel experience.

4.4. Evaluation of travel experience and habits of using travel applications

4.4.1. Reliability analysis

Cronbach's Alpha was calculated for the four DA items as a preliminary check of internal consistency among conceptually related indicators. The analysis yielded a value of $\alpha=0.776$ for the four-item set (Table 7), indicating an acceptable level of internal consistency for exploratory purposes [25, 26]. All 144 cases were valid and the corrected item-total correlations ranged from 0.471 to 0.671, supporting the retention of the items for subsequent descriptive analysis. These results should therefore be interpreted in relation to the exploratory and descriptive role of the DA items, which capture related but not identical aspects of tourists' engagement with digital and AI-supported travel support.

Table 7. Preliminary internal consistency of the digital acceptance indicators.

Index	Cronbach's Alpha	Number of items	Valid cases
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Digital acceptance indicators	0.776	4	144
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4.4.2. Analysis of variance (ANOVA)

A one-way ANOVA was conducted to examine whether the desire to use an AI virtual assistant specifically for Hoi An Ward (DA4) differed across age groups. In Table 8, Levene's test indicated that the assumption of homogeneity of variances was not violated, i.e., $F(3,140)=1.67$, $p=0.176$. The ANOVA results showed a statistically significant difference among the age groups with $F(3,140)=9.59$, $p<0.001$. The effect size was estimated at $\eta^2=0.170$, indicating a large practical effect [27]. Post-hoc Tukey comparisons showed that the 18-35 age group reported significantly higher DA4 scores than the 36-60 age group ($MD=1.12$, $p=0.001$) and the over 60 age group ($MD=2.20$, $p=0.009$). The remaining pairwise comparisons were not statistically significant. These findings suggest that readiness to accept AI-assisted travel support in Hoi An Ward differed across age groups within the surveyed sample, with respondents aged 18-35 showing a more positive orientation than older groups.

Table 8. One-way ANOVA results for DA4 across age groups.

Source of variation	<i>df</i>	<i>F</i>	Sig. (<i>p</i>)	η^2
Between groups	3	9.59	<0.001	0.170
Within groups	140			

4.4.3. Descriptive statistics of digital acceptance indicators

The DA items were interpreted at the item level to distinguish different but related aspects of tourists' engagement with digital support. In this logic, DA1 and DA2 reflect current usage behaviour, whereas DA3 and DA4 reflect interest in personalisation and readiness to accept AI-assisted support in Hoi An Ward.

The mean values and standard deviations for the DA indicators (Table 9) reveal a gap between tourists' interest in personalised and AI-supported assistance and their actual usage behaviour. DA3, which refers to the desire for travel recommendations based on personal preferences, recorded the highest mean score ($M=3.94$), followed closely by DA4, which measures the desire for an AI virtual assistant specifically for Hoi An Ward ($M=3.92$). By contrast, DA2 recorded a moderate mean score ($M=3.66$), while DA1 had the lowest mean score ($M=3.32$), suggesting that the use of general travel

applications and virtual assistants remains less pronounced than expressed interest in personalised and AI-supported assistance. The standard deviations ranged from 1.18 to 1.31, indicating a moderate and relatively consistent spread of responses across the sample.

Table 9. Mean values and standard deviations of digital acceptance indicators (n=144).

Coding	Indicator	Mean value <i>M (Mean)</i>	Standard deviation <i>(SD)</i>
DA1	Frequent use of general travel applications	3.32	1.18
DA2	Frequent use of virtual assistants for trip planning	3.66	1.21
DA3	Desire for travel recommendations based on preferences	3.94	1.20
DA4	Desire for an AI virtual assistant specifically for Hoi An	3.92	1.31

4.4.4. Summary of the quantitative findings

The quantitative analysis of 144 valid responses provides an overview of patterns in tourists' engagement with digital and AI-supported travel support in Hoi An Ward. The sample reflects diversity in demographic characteristics and travel behaviours, which is appropriate for an exploratory descriptive study in a specific heritage tourism context.

Overall, the findings indicate a generally positive orientation toward personalised and AI-supported tourism services, particularly preference-based recommendations and virtual assistant support. However, the actual use of general travel applications and virtual assistants remains more moderate, suggesting a gap between tourists' expressed interest in AI-supported personalisation and their actual usage behaviour within the surveyed context.

4.5. Discussion

The study shows that tourists in Hoi An Ward demonstrate a relatively high level of interest in personalised and AI-supported travel assistance. The high mean scores for DA3 ($M=3.94$) and DA4 ($M=3.92$) indicate that respondents are receptive to preference-based recommendations and AI-supported travel assistance. From a TAM-informed perspective, this suggests that tourists are receptive to AI-supported services when they are perceived as useful and relevant to practical travel needs within the heritage destination [6]. At the same time, from the perspective of the experience economy, the value of such support does not lie only in functional efficiency, but also in its contribution to more meaningful and memorable travel experiences within a culturally distinctive setting [8]. This interpretation is also supported by the preliminary expert interviews, which emphasised that meaningful personalisation in Hoi An depends not only on technical functionality, but also on practical utility, cultural specificity and sensitivity to real conditions of use.

However, the gap between the high level of interest in personalisation and the moderate frequency of using tourism-support applications (DA1, $M=3.32$) and virtual assistants (DA2, $M=3.66$) suggests that interest in AI-supported personalisation does not automatically translate into frequent use in practice. In TAM terms, favourable attitudes toward personalisation and AI support do not necessarily lead to greater usage when the practical usefulness of digital support remains incomplete or when usability barriers are still present [6]. This finding is consistent with previous research suggesting that a readiness to adopt information technology does not necessarily imply that such technology generates genuine experiential value for tourists [28, 29].

This gap should not be interpreted simply as reluctance toward technology, but as a result of several mechanisms. First, tourists may value AI-supported travel assistance as modern and useful, yet only use it when it becomes necessary at specific moments of the trip [30]. Second, digital fatigue may limit continuous interaction with mobile devices, especially in a living heritage destination such as Hoi An, where visitors experience the Ancient Town through its rhythms of life, architecture, crafts, sounds, lighting and physical presence. If digital support follows a logic of behavioural optimisation without matching the rhythm of experience, emotional engagement and cultural context of the destination, it may fragment rather than meaningfully personalise

the experience. Third, algorithmic trust and privacy concerns may also restrict usage, as tourists may hesitate to rely on AI for cultural information, itinerary suggestions or real-time decisions if recommendations are generic, inaccurate or insufficiently destination-specific. Because context-aware personalisation relies on in-depth user and contextual information, limited willingness to share personal data may constrain the system's ability to generate highly relevant recommendations and reduce the perceived value of personalised support [31, 32].

A further explanatory mechanism may lie in the misalignment between personalisation designed from initial input data and the actual conditions of on-site experience. AI may generate relevant suggestions based on information users provide before the trip, such as preferences, time availability, budget or travel purpose. However, once tourists actually arrive in Hoi An, situational conditions may shift because of weather, health, visitor density, opening hours, travel companions or changing needs during the journey. As a result, recommendations generated from initial inputs may no longer remain optimal at the moment of actual use.

In addition, actual usage is shaped by habitual behaviour and previous experience with digital tools. Many tourists still prefer familiar practices such as searching on Google, consulting social media, asking acquaintances or planning independently, which means that AI-based functions may generate initial interest without easily becoming repeated habits of use. Finally, personalisation can only function effectively when the system has sufficient input data but users may be unwilling to provide extensive information about their preferences, time, budget or trip purpose. Concerns about privacy and data sharing should therefore also be considered an important mechanism influencing the transition from stated interest to actual usage behaviour [32].

In this sense, the paradox between high interest and only moderate usage does not reflect a rejection of technology, but suggests that AI-supported assistance in tourism is accepted only under certain conditions. Beyond perceived usefulness, acceptance may also depend on broader psychological and experiential factors, including perceived performance, motivation, facilitating conditions and emotional responses to AI-supported service encounters [32, 33]. It also shows that the value of AI support lies less in continuous interaction throughout the trip than in the ability to provide context-aware

and timely suggestions that match users' needs, preferences and current situation [31]. From this perspective, personalisation should be understood as an interpretive and co-created experiential process, in which value is determined not only by the system's recommendation capacity, but by how digital support is received in relation to the specific cultural context of the destination [19, 20]. This interpretation is also consistent with psychological and sociological views that tourism experience is shaped through perception, engagement, socially embedded meanings and practices rather than through technology alone [34, 35].

A critical perspective also suggests that mobile technology and AI in this study should be understood as supportive tools for addressing practical difficulties that tourists may encounter from the trip-planning stage to on-site experience in Hoi An, rather than as solutions capable of replacing the experiential process as a whole [36]. From this perspective, only moderate levels of actual usage do not necessarily indicate an implementation gap, but may also reflect a form of selective engagement in which tourists rely on digital tools when they are genuinely useful, while leaving other parts of the journey open to direct exploration, social interaction and place-based experience [37]. In this context, digital support is valuable only when it does not diminish visitors' sense of authenticity, direct presence and experiential acceptability within the heritage setting [22, 38]. In this sense, personalisation should function as flexible support rather than as a mechanism of total technological control over each user's choices, allowing AI to provide verified information, relevant itinerary suggestions and adaptable planning assistance while still leaving room for spontaneous discovery, interaction with local residents and forms of heritage experience tied to the real environment. Rather, personalisation in a heritage context may be understood as the capacity to negotiate between shared group constraints and individual preferences, thereby creating more flexible experiences without eliminating the collective dimension of the journey [39].

At the same time, a more balanced interpretation should also acknowledge that AI-driven personalisation does not always generate positive outcomes. If it is designed primarily according to the optimisation of popularity, convenience or algorithmic efficiency, it may inadvertently direct tourists toward familiar hotspots and intensify pressure on the heritage core, particularly in the central Ancient Town [40]. From this

perspective, excessive personalisation risks narrowing experience rather than widening it, while also weakening the public and shared dimension of heritage consumption [41]. When designed carefully, AI may also broaden the range of meaningful options available to visitors by suggesting less congested spaces, activities and routes that still match their needs, time constraints and travel purposes. In this sense, personalisation should function as a way of balancing individual relevance with a more even distribution of experience across the destination.

Despite the generally positive orientation toward virtual assistants, the findings suggest that tourists value usefulness and relevance over the mere presence of multiple technological features.

In the case of Hoi An Ward, this point is especially important because many domestic visitors spend only a short time in the Ancient Town and may approach it mainly as a visual check-in space. Some may choose not to enter ticketed heritage sites because of cost concerns or because they assume that the historical spaces inside offer little more than what is already visible from the walking streets outside. If AI-supported personalisation is driven primarily by popularity, convenience and algorithmic efficiency, it may reinforce a superficial consumption of heritage, in which visitors engage with familiar routes and photogenic surfaces rather than with the deeper historical, architectural and socio-cultural meanings of the destination. By contrast, meaningful personalisation in Hoi An should create differentiated pathways into the destination's cultural depth according to visitors' motivations. For example, visitors interested in architecture may be guided toward the layered Vietnamese, Chinese and Japanese influences reflected in Hoi An's architectural heritage, while visitors seeking a deeper understanding of local life may be connected more directly to craft traditions, community life or local cultural rhythms. In this sense, personalisation becomes valuable not when it simply predicts what tourists are likely to consume, but when it helps them access and interpret the cultural meanings that distinguish Hoi An as a living heritage space. This is consistent with previous studies arguing that digital tourism experiences only generate meaningful value when technology serves to support tourists' participation and interpretation of their experiences rather than replacing the actual on-site experience [42].

Beyond tourist participation, this issue also has implications for local stakeholders and heritage governance. AI-supported personalisation in a heritage destination may affect not only tourists' individual experiences, but also the ways in which local culture is selected, framed and made visible through digital mediation. From the perspective of Authorized Heritage Discourse, heritage is never entirely neutral, but is shaped by processes through which certain values, places and narratives are legitimised while others remain less visible [24]. Likewise, heritage governance research also suggests that recognition and misrecognition operate through the uneven inclusion of different voices, practices and interests in shaping how heritage is interpreted and managed [43]. In the context of Hoi An, this implies that if AI-supported recommendation systems repeatedly prioritise particular sites, stories or routes, they may influence not only visitor concentration but also which dimensions of local culture become more visible and repeatable in public circulation, while other spaces, practices or community-linked meanings remain more peripheral. At the same time, aggregated and anonymised preference patterns may also help local stakeholders anticipate visitor needs, prepare more suitable experiences and support a more balanced distribution of attention across the destination, provided that such systems remain accountable to broader heritage-governance objectives and community interests [44].

These results reinforce the perspective that UX in tourism should not be approached as a detached relationship between users and systems, but as a context-dependent and closely integrated interaction process. Experiences at heritage destinations are not solely personal but also constitute processes of learning, emotional engagement and connection between space and social life [45]. Therefore, UX in the context of heritage tourism should be extended from user interface experience to a broader place-based experience, in which technology serves as an intermediary medium that enables tourists to understand, perceive and interpret the cultural values of the destination. This interpretation is also consistent with experiential perspectives in tourism, which emphasise that tourism value is shaped not only by service provision but also by interaction among place, perception and personal meaning [8, 45].

5. Conclusions

This study clarifies the role of mobile technology and AI in supporting tourist UX and personalisation in Hoi An Ward by examining the relationship between tourists' interest in personalised support, their actual digital usage behaviour and readiness to adopt AI-assisted tourism applications in a heritage context. Taken together, the survey results and the preliminary expert interviews indicate that the value of personalisation in Hoi An Ward depends not only on recommendation capability, but also on practical utility, contextual fit and sensitivity to the cultural rhythm of a living heritage destination.

The quantitative survey of 144 valid responses indicates that tourists show a relatively high level of interest in personalised forms of support, particularly AI-generated recommendations. At the same time, the findings reveal that interest in AI-supported personalisation does not automatically translate into frequent use, suggesting that tourists' responses to digital tourism applications should be understood in relation to usability, contextual relevance and the experiential rhythm of a living heritage space.

Unlike studies that approach personalisation primarily from a technical standpoint, this research positions personalisation in heritage tourism as a context-dependent and interpretive process. In this view, technology does not replace the destination experience. Rather, it functions as a bridge between individual tourist needs and the socio-cultural environment of the heritage site. In the case of Hoi An Ward, the value of AI lies not only in improving convenience, but also in supporting access, interpretation and trip planning in ways that remain sensitive to the cultural depth, direct experience and experiential rhythm of a living heritage space.

5.1. Theoretical and practical contributions

From a theoretical perspective, this study contributes to discussions of UX personalisation and the heritage-destination context by linking a technology-acceptance perspective with experiential approaches to tourism. It also shows that preliminary qualitative insight can enrich the interpretation of quantitative patterns when personalisation is approached not simply as an algorithmic output, but as a context-sensitive experiential process through which tourists interpret and engage with place.

From a practical perspective, the findings suggest that in Hoi An Ward and similar heritage destinations, the integration of AI and mobile technology should focus

on context-relevant support rather than on the accumulation of technological features alone. Digital support is likely to be more valuable when it is trustworthy, unobtrusive and sufficiently responsive to tourists' changing needs, while still preserving direct cultural experience at the destination. In this way, AI-assisted tools may contribute to more meaningful visitor experiences and more balanced destination management.

5.2. Limitations and future research

This study has several limitations, particularly in relation to sample size and convenience sampling. As an exploratory descriptive study based on a non-probability sample, the findings should be interpreted within the surveyed context of Hoi An Ward rather than as statistically representative of the broader tourist population. Further validation in broader or more diverse destination contexts is needed before wider generalisation can be made.

In addition, although the study was informed by a preliminary qualitative phase of expert interviews, this qualitative component remains limited in scope and reflects expert perspectives more directly than the lived experiences of tourists on site. Future research should therefore adopt broader mixed-method approaches, including in-depth tourist interviews and other interpretive methods, in order to better understand how personalisation is experienced, negotiated and adjusted in real time within heritage settings.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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