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Revisiting technology acceptance in the age of generative artificial intelligence: The roles of perceived emotional responsiveness and engagement experience in tourism

Tran Tuyen[1,2]

[1]*University of Social Sciences and Humanities, Ho Chi Minh City, Vietnam.*
[2]*Vietnam National University, Ho Chi Minh City, Vietnam.*
[1,2]*Email: tuyentran@hcmussh.edu.vn*

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ABSTRACT

Generative artificial intelligence (GenAI) is rapidly transforming how tourists access, process, and interact with travel information and services. However, the mechanisms underlying GenAI adoption in cross-cultural tourism contexts remain insufficiently understood. This study aims to explain how emotional and experiential factors shape the adoption of GenAI among international tourists by extending the Technology Acceptance Model. In particular, the study integrates perceived emotional responsiveness and engagement experience as novel antecedents, alongside perceived personalization and satisfaction, to capture both cognitive and experiential dimensions of technology use. Drawing on data collected from 541 international tourists visiting Vietnam, the study employs Partial Least Squares Structural Equation Modeling to examine the relationships among these constructs. The results indicate that engagement experience is the strongest predictor of GenAI usage behavior. Perceived emotional responsiveness does not directly influence usage but exerts significant indirect effects through perceived usefulness, satisfaction, and engagement, highlighting the importance of experiential pathways in shaping technology adoption. These findings extend the Technology Acceptance Model by demonstrating that GenAI adoption is driven not only by utilitarian evaluations but also by emotional and experiential interactions with AI systems. From a practical perspective, the results provide guidance for tourism platforms and destination managers to design emotionally responsive and culturally adaptive GenAI systems that enhance user engagement, increase tourist satisfaction, and support sustained technology use across international travel contexts.

Contribution/Originality: This study extends the Technology Acceptance Model by integrating perceived emotional responsiveness and engagement experience as novel antecedents, shifting TAM from a utilitarian to an experiential-emotional framework. It further demonstrates the indirect role of perceived emotional responsiveness of GenAI through cognition, satisfaction, and engagement, based on evidence from international tourists in an emerging destination.

1. INTRODUCTION

The rapid development of generative artificial intelligence (GenAI) is creating profound changes in the global tourism industry (Yu & Meng, 2026). Today's tourists not only seek information from traditional sources but also actively interact with AI systems that are capable of generating content, supporting decision-making, and personalizing experiences in real time (Albashrawi, 2025; Kang, Kim, Kim, & Olya, 2026; Zhu, Song, & Duan, 2025).

However, despite the growing diffusion of GenAI in tourism, existing research has largely focused on general technology acceptance factors, without adequately examining the distinctive experiential characteristics of GenAI. In particular, limited attention has been paid to users' perceived emotional responsiveness of GenAI, that is, their

subjective evaluation of the extent to which AI demonstrates emotional awareness, empathy, and context-sensitive interaction. Likewise, constructs such as perceived personalization and engagement experience remain under-integrated in contemporary tourism behavior prediction models. This theoretical gap highlights the need to move beyond traditional utilitarian technology frameworks and develop extended models that more comprehensively capture emotional and experiential dynamics in the GenAI era.

While GenAI tools are rapidly being adopted in travel planning, their influence on tourist decision-making remains underexplored from a psychological and emotional standpoint. Existing literature focuses heavily on utility and functionality, yet tourists increasingly value empathetic, immersive, and engaging digital interactions. With global tourism recovering post-pandemic and AI adoption accelerating, there is an urgent need for theoretical models that capture not only rational acceptance factors but also the emotional and experiential dimensions of AI-assisted travel. Addressing this knowledge gap is crucial to help tourism providers design AI systems that align with the evolving expectations of digitally empowered tourists, especially international tourists navigating unfamiliar destinations.

On that basis, this study was conducted with three main objectives. First, to build a theoretical model that extends TAM by integrating emotional and experiential variables such as perceived emotional responsiveness, personalization, satisfaction, and engagement experience. Second, to test this model in a specific context: international tourists using GenAI when traveling in Vietnam. Third, to identify the factors that most strongly influence the behavior of using GenAI to support tourism. The theoretical framework of the study is based on TAM as a foundation while integrating theories of perceived emotional responsiveness and engagement experience from the fields of consumer behavior and human-computer interaction. This integrated approach allows for the simultaneous consideration of both the cognitive-rational and emotional-experiential dimensions of technology use, thereby providing a more comprehensive understanding of AI acceptance in tourism.

The remainder of the paper is structured as follows: Section 2 presents a literature review and develops the research hypotheses. Section 3 describes the methodology in detail, including the data collection process, scales, and analytical techniques. Section 4 presents the empirical results, discusses the findings in relation to theory and practice, and highlights the theoretical contributions and managerial implications. Finally, Section 5 draws conclusions, outlines limitations, and suggests suggestions for further research.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Literature Review

The integration of AI into tourism services has created fundamental changes in tourists' approach and travel experience (Skandali, Magoutas, & Tsourvakas, 2024; Yu & Meng, 2026). Against this backdrop, many recent studies have focused on clarifying the factors influencing the acceptance and use of AI in tourism, especially in areas such as hotels, airlines, or autonomous transportation. Factors such as social influence, emotional motivation, performance expectation, humanization of technology, and the level of trust in the system have been identified as core components influencing user behavior (Chi, Gursoy, & Chi, 2022; Manzoor, Ullah, Khattak, Ullah, & Han, 2024; Yu & Meng, 2026). However, most previous studies have focused on traditional forms of AI, such as built-in chatbots, service robots, or basic recommendation systems in tourism applications (Li & Lee, 2025; Yu & Meng, 2026). Very few studies have explored the context of tourists actively using GenAI, such as ChatGPT, Gemini, or interactive content creation applications, to support planning, information search, or interaction during their travel journeys. The outstanding feature of GenAI is its ability to generate flexible, in-depth, and human-like language responses, opening up entirely new experiences that previous studies have not fully addressed (Li & Lee, 2025; Wong, Lai, & Lin, 2025). Furthermore, emotional factors, such as the perceived emotional responsiveness of AI, the level of perceived personalization, or the state of engagement in interactions with AI, although mentioned sporadically, have not really been fully tested in theoretical models of technological behavior (Cheung, Leung, Cheah, & Ting, 2022). In addition,

satisfaction, an important mediator leading to repetitive behavior, has not been exploited simultaneously with emotions and experiences in the context of GenAI. Satisfaction represents a state of positive emotional evaluation arising from users' overall interaction with technology. Prior studies have shown that satisfaction not only increases repeat usage behavior but also enhances users' willingness to recommend and share their experiences with others (Chiru, 2025; Seyfi, Kim, Lee, Jo, & Zaman, 2026; Wu, Yang, Law, Gong, & Xu, 2025). In the context of GenAI-enabled tourism, satisfaction is particularly salient because it reflects tourists' holistic assessment of both functional performance and affective interaction, such as perceived empathy, responsiveness, and contextual relevance. As a result, satisfaction functions as a critical psychological bridge that translates cognitive evaluations and emotional experiences into sustained engagement and continued technology use. Despite the rapid diffusion of GenAI in tourism, existing studies remain theoretically fragmented, as they tend to examine cognitive, emotional, or experiential factors in isolation. There is still a lack of an integrated theoretical framework that systematically extends the Technology Acceptance Model by incorporating perceived emotional responsiveness, personalization, satisfaction, and engagement experience, particularly in cross-cultural tourism contexts. This gap limits our understanding of how cognitive-rational evaluations and emotional-experiential mechanisms jointly shape international tourists' GenAI usage behavior, thereby necessitating a comprehensive model and empirical validation.

2.2. Hypothesis Development

Therefore, this study proposes an extended theoretical model based on the Technology Acceptance Model (TAM), integrating additional emotional and experiential factors such as perceived emotional responsiveness, perceived personalization, satisfaction and engagement experience, thereby examining their impacts on GenAI usage behavior of international tourists in Vietnam. Below is the detailed hypothesis development.

First, perceived emotional responsiveness refers to users' subjective evaluation of the extent to which AI demonstrates emotional awareness, empathy, and context-sensitive responses during interaction (Bouslama, 2024; Zhu et al., 2025). Recent studies have shown that AI with expressive and contextual interaction capabilities can enhance the perception of effectiveness, increase satisfaction, and promote a sense of engagement when using (Chen, Luo, & Gao, 2025; Yu & Meng, 2026). In the context of international tourists in Vietnam, this factor is even more important, as they often have to process new information and overcome language and cultural barriers. GenAI's ability to respond sensitively and put advice in the right context helps reduce cognitive pressure, create a sense of safety and trust, thereby forming a willingness to accept and maintain the use of technology throughout the journey. Therefore, the study proposes the following hypotheses.

H_1: Perceived emotional responsiveness of GenAI (PER) positively affects perceived usefulness (PU).

H_2: Perceived emotional responsiveness of GenAI positively affects satisfaction when using AI (SA).

H_3: Perceived emotional responsiveness of GenAI positively affects engagement experience (EN).

H_4: Perceived emotional responsiveness of GenAI directly affects GenAI usage behavior in tourism (BH).

Next, perceived personalization, the ability of AI to tailor content to the needs and characteristics of each user, is considered a key factor in increasing experience and satisfaction (Jadhav, Kilkarni, Kulkarni, & Gupta, 2024; Seneadza, Arku, Kumi, Boateng, & Boateng, 2025). When users feel that AI "understands them" and provides information that is relevant to their personal context, they tend to rate the usefulness and feel more satisfied (Manzoor et al., 2024; Yu & Meng, 2026). For international tourists, personalization is not just about tailoring content to their interests but also about adapting it to the destination's language, culture, weather conditions, opening hours, or immediate situation. This relevance makes information more useful, increases its practicality, and strengthens the tourist's engagement with the AI tool. Therefore, the study hypothesizes.

H_5: Perceived personalization (PP) positively affects perceived usefulness.

H_6: Perceived personalization positively affects satisfaction with using AI.

H_7: Perceived personalization positively affects GenAI usage behavior in tourism.

In addition, perceived usefulness still plays a central role in the TAM model. Studies have confirmed that when users believe that AI helps them save time, optimize their journey, or improve their decision-making, they are more likely to continue using the technology (Chi et al., 2022; Skandali et al., 2024). In addition, this perception also contributes to the formation of satisfaction and engagement. For international tourists in Vietnam, usefulness is evident in support for finding destinations, booking services, translation, and handling emergencies. These values not only help optimize travel plans but also provide peace of mind, thereby increasing engagement and long-term usage intentions. From there, the following hypotheses are proposed.

H_8: Perceived usefulness positively affects satisfaction when using AI.

H_9: Perceived usefulness positively affects engagement experience.

H_{10}: Perceived usefulness positively affects GenAI usage behavior.

Satisfaction is a state of positive emotional evaluation after using technology. Many studies have demonstrated that satisfaction not only leads to repeat usage behavior but also promotes the intention to share the experience with others (Chiru, 2025; Seyfi et al., 2026; Wu et al., 2025). In addition, satisfaction is also a predictor of engagement, as satisfied users tend to pay attention and continue interacting with AI. In an unfamiliar travel environment, satisfaction also means strengthening tourists' trust in technology, helping them reduce perceived risk and be willing to share positive experiences with others, which is an important foundation for forming lasting bonds with AI. Based on this, the following hypotheses are proposed.

H_{11}: Satisfaction positively affects GenAI usage behavior.

H_{12}: Satisfaction positively affects engagement experience.

Finally, engagement experience represents a state when users are fully focused and absorbed in the process of interacting with AI (Chen et al., 2025; Chiru, 2025). According to Chen et al. (2025), engagement increases perceived value and naturally shapes technology usage behavior (Chen et al., 2025; Manresa, Sammour, Mas-Machuca, Chen, & Botchie, 2025). When AI provides context-rich interactions that combine exploration and entertainment, the engaging experience not only increases immediate interest but also creates a sense of "wanting to come back" to the tool, thereby forming a habit of use in subsequent trips. Therefore, the study proposes the final hypothesis.

H_{13}: Engagement experience positively affects GenAI usage behavior.

With the thirteen hypotheses mentioned above, the study aims to test a new theoretical model that not only inherits the fundamental elements of TAM but also expands in the direction of emotion-experience, clearly demonstrating the academic contribution of the study.

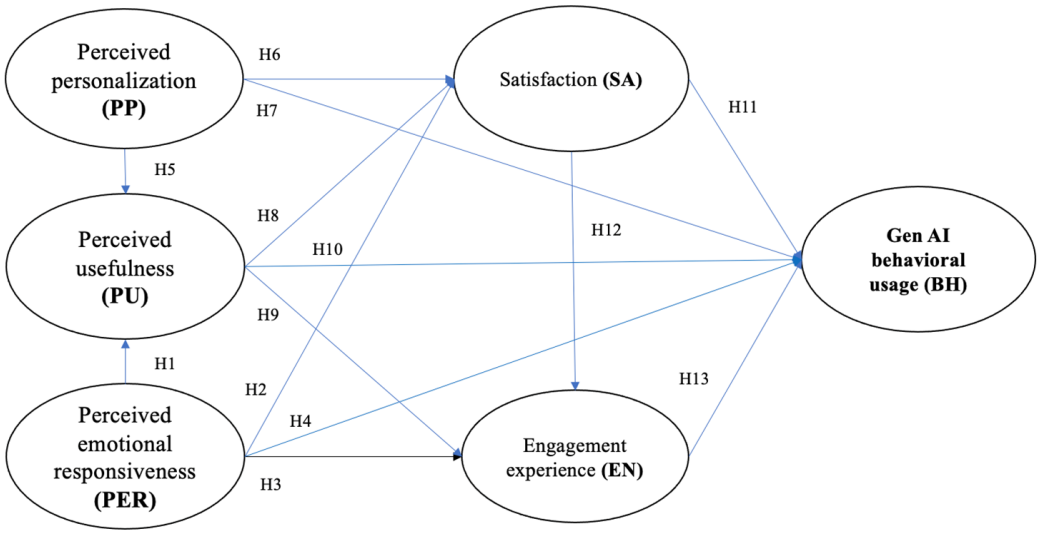

Figure 1. Proposed research model.

Figure 1 illustrates the proposed research model examining the relationships between perceived emotional responsiveness, perceived personalization, perceived usefulness, satisfaction, engagement experience, and GenAI behavioral usage. The model proposes that emotional, cognitive, and experiential factors jointly influence international tourists' adoption of generative AI in tourism contexts.

3. METHOD

3.1. Instrument Detail

The observed variables in the model are measured using a multivariate scale, inherited and adjusted from previous studies to ensure suitability with the context of GenAI in tourism. The variables include perceived emotional responsiveness of GenAI, perception of personalization, perception of usefulness, satisfaction level, engagement experience, and GenAI usage behavior. Each latent variable is measured by 4-6 questions, using a 5-point Likert scale, from 1 (Completely disagree) to 5 (Completely agree). The questionnaire is translated into English and Vietnamese and edited by two independent experts in the field of tourism and market research to ensure reliability and content validity.

3.2. Context

The study was conducted in Ho Chi Minh City, one of the largest international tourism centers in Vietnam, which welcomes a large number of international tourists every year. The survey subjects were international tourists who were or had just completed a trip to Vietnam and had used at least one GenAI tool during their information search, planning, or interactive support during their trip.

3.3. Pretesting

Before the official survey, a pilot study with 50 similar subjects was conducted to check the clarity and appropriateness of the questions. The results showed that the scales achieved preliminary reliability (Cronbach's alpha > 0.70) and did not require significant content adjustment (Hair, Hult, Ringle, & Sarstedt, 2021).

3.4. Sampling Technique

A purposive sampling method was applied to ensure that participants fully met the research criteria, namely having used GenAI in a tourism context. This approach focuses on a real-world user population, which is consistent with the goal of testing theoretical relationships in a concrete application environment.

To guarantee the relevance of responses, the survey included an initial screening question asking whether the participant had used at least one GenAI tool for travel-related purposes (e.g., information search, itinerary planning, translation, or on-trip assistance). Respondents who answered "No" to this question were not invited to complete the remainder of the survey.

3.5. Data Collection

Data were collected from October 2024 to May 2025 through in-person and online surveys. Prior to participating, respondents were informed about the study's purpose and committed to protecting their personal data. Questionnaires were distributed in areas with high concentrations of international tourists, such as airports, hotels, shopping malls, and major tourist attractions.

3.6. Sample Size

A total of 541 valid surveys were collected and included in the analysis. This sample size is considered appropriate for the Partial Least Squares Structural Equation Modeling (PLS-SEM) analysis, especially when the model has many latent variables and complex relationships (Hair et al., 2021).

3.7. Common Method Bias

To minimize common method bias, the study applied precautions during questionnaire design, such as ensuring respondent anonymity, arranging questions in random order, and using diverse question formats. After data collection, Harman's single-factor test was conducted, showing that no single factor explained the majority (>50%) of the variance, thereby reducing the risk of common method bias.

3.8. Data Analysis Procedure

PLS-SEM analysis was performed using SmartPLS software, allowing simultaneous testing of the measurement model and the structural model. The analysis process consisted of two stages: (1) evaluating the measurement model through factor loadings, composite reliability (CR), and average variance extracted (AVE); (2) testing the structural model to evaluate the hypothesized relationships through path coefficients, t-values, and p-values. Additionally, the coefficient of determination (R^2) of the dependent variables was analyzed to measure the model's explanatory power.

4. RESULTS AND DISCUSSION

4.1. Sample Characteristics

A total of 541 international tourists participated in the survey, with a fairly balanced gender distribution. Of these, 52.5% were male, 46.6% were female, and 0.9% chose not to disclose or identify as another gender. In terms of age, the group with the highest proportion was from 25 to 34 years old (40.5%), followed by the 35–44-year-old group (22.9%) and the 45–54-year-old group (16.5%). The younger group from 18-24 years old accounted for 13.9%, while the group from 55 years old and above accounted for only 6.3%, indicating that the sample mainly focused on young and middle-aged tourists, those who tend to access and use new technologies such as GenAI easily.

The educational level of survey participants was mostly high. Up to 70.1% had a university degree, 11.5% had a postgraduate degree, while only 10.4% had secondary education or lower. About 8.1% of participants were unspecified or had other educational levels. The high educational level indicates a fairly high willingness to access and use new technologies such as GenAI among the survey group.

In terms of region of origin, the majority of participants came from Europe (35.3%) and Asia (excluding Vietnam) with 34.0%. Tourists from North America accounted for 14.0%, followed by Oceania (5.9%) and other regions such as South America, Africa, or unspecified (10.7%). This distribution clearly reflects the increasing role of tourists from developed countries and regions with high technological levels in accessing GenAI tools to support tourism.

In terms of when GenAI is used during the travel journey, the results show that 48.9% of tourists use the technology during the trip (real-time), 37.7% use it during the pre-trip preparation phase, and 13.4% use it after the trip to provide reviews or feedback. This reflects the growing trend of integrating GenAI into every stage of the travel journey, not just the initial planning stage.

In terms of the main uses of GenAI, the majority of respondents said they use the tool to find itinerary suggestions (30.8%) and local destination recommendations such as food or attractions (27.0%). Other purposes include language translation assistance (18.1%), providing cultural knowledge or behavioral advice (11.8%), and booking assistance (12.3%). These figures show that GenAI is being applied in a variety of ways, not only to serve information but also to support communication, cultural understanding and deeper personalized experiences during the journey.

Overall, the characteristics of the survey sample clearly demonstrate the suitability of the group of participants to the research objectives, that is, international tourists who have practical experiences with GenAI in the context of tourism in Vietnam, representing highly educated population groups, coming from many different regions, and having the habit of using technology throughout the journey.

4.2. Evaluation of the Measurement Model

To ensure the reliability and validity of the scales, the study evaluated the measurement model according to three main criteria: composite reliability, convergent validity, and discriminant validity, following the instructions of Hair et al. (2021).

First, the reliability of each scale was tested through the Cronbach's Alpha coefficient and composite reliability. The results showed that all latent variables had Cronbach's Alpha coefficients exceeding the recommended threshold of 0.70, specifically ranging from 0.802 (perceived usefulness) to 0.937 (perceived personalization), indicating a high level of internal consistency. At the same time, the composite reliability coefficients of the scales also exceeded the threshold of 0.70, with the lowest value being 0.872 and the highest being 0.952. This confirms that the items in each scale contribute consistently and stably to the measurement of the respective concept.

Next, convergent validity was assessed using the Average Variance Extracted (AVE). According to Hair et al. (2021), AVE should be at least 0.50 to ensure that the concept explains more than half of the variance of the indicators (Hair et al., 2021). In this study, all variables achieved AVEs of 0.630 or higher, with the lowest variable being perceived usefulness (0.630). This result shows that the scale has good convergent validity. In addition, the loadings of each indicator in the scale were also examined to assess the level of contribution to the latent variable. Most of the indicators had loadings greater than 0.7.

Finally, the discriminant validity was tested using the Heterotrait-Monotrait Ratio (HTMT). The HTMT values between pairs of latent variables were all below the threshold of 0.85, indicating a clear level of discrimination between the concepts (Hair et al., 2021). Specifically, the HTMT between the variables ranged from 0.407 (PP-PER) to 0.806 (BH-EN), with no pair exceeding the threshold, thereby confirming that each variable measures a distinct and non-overlapping concept.

In summary, the measurement model in this study met the necessary criteria of reliability, convergent validity, and discriminant validity. The test results show that the scale used in the survey is appropriate, reliable, and capable of accurately measuring the research concepts, creating a solid foundation for the structural model testing step in the next section.

4.3. Evaluation of the Structural Model and Testing of Hypotheses

All inner VIF indices in the structural model are below the threshold of 3.3 as recommended by Hair et al. (2021), indicating that there is no serious multicollinearity problem (Hair et al., 2021). The highest VIF value is 2.403 (SA → BH), the lowest is 1.160 (PER → PU; PP → PU). This result confirms that the independent variables in the model are clearly distinguishable and suitable for structural analysis.

Table 1. Path coefficients and hypothesis testing.

Hypothesis		Original sample (O)	Sample mean (M)	T statistics (|O/STDEV|)	P-values	Reference
H1	PER-> PU	0.473	0.473	10.525	0.000	Support
H2	PER-> SA	0.381	0.381	5.530	0.000	Support
H3	PER-> EN	0.093	0.095	1.901	0.057	*Reject*
H4	PER-> BH	-0.020	-0.019	0.570	0.568	*Reject*
H5	PP-> PU	0.229	0.228	5.654	0.000	Support
H6	PP-> SA	0.067	0.069	2.006	0.045	Support
H7	PP-> BH	0.188	0.188	5.820	0.000	Support
H8	PU-> SA	0.435	0.431	6.871	0.000	Support
H9	PU-> EN	0.404	0.399	5.992	0.000	Support
H10	PU-> BH	0.164	0.161	3.237	0.001	Support
H11	SA-> BH	0.088	0.087	2.232	0.026	Support
H12	SA-> EN	0.252	0.253	4.291	0.000	Support
H13	EN-> BH	0.494	0.495	9.350	0.000	Support

Note: PER = Perceived Emotional Responsiveness of GenAI; PP = Perceived personalization; PU = Perceived usefulness; SA = Satisfaction; EN = Engagement experience; BH = Behavioral usage of GenAI in tourism.

Table 1 presents the results of the PLS-SEM analysis, including the path coefficients, t-values, and significance levels for all hypothesized relationships. The results show that 11 of the 13 proposed hypotheses are supported at the 5% significance level, while two hypotheses are not supported.

Starting with H1, perceived emotional responsiveness of GenAI (PER) positively affects perceived usefulness (PU) with a coefficient $\beta = 0.473$, $t = 10.525$, $p < 0.001$. This result shows that when AI shows empathy and responds appropriately to emotions and circumstances, tourists will rate this tool as more useful in the process of searching and processing information. H2 is also confirmed: PER positively affects satisfaction (SA) ($\beta = 0.381$, $t = 5.530$, $p < 0.001$). This implies that the emotional factor from AI not only enhances the perceived value but also increases the overall satisfaction of tourists when interacting. For H5, perceived personalization (PP) has a positive impact on PU ($\beta = 0.229$, $t = 5.654$, $p < 0.001$). H6 is also supported: PP positively affects SA ($\beta = 0.067$, $t = 2.006$, $p = 0.045$). In addition, H7 shows that PP significantly affects BH ($\beta = 0.188$, $t = 5.820$, $p < 0.001$). This reinforces the argument that the ability of AI to customize content and responses to individual characteristics will enhance trust and encourage continued use. Perceived usefulness plays a key role in the model. H8 is confirmed: PU positively affects SA ($\beta = 0.435$, $t = 6.871$, $p < 0.001$). H9 was also supported: PU affects EN ($\beta = 0.404$, $t = 5.992$, $p < 0.001$). H10 showed that PU affects BH ($\beta = 0.164$, $t = 3.237$, $p = 0.001$). This result aligns with foundational theories such as TAM (Davis, 1989) and previous studies (Chi et al., 2022), which assert that perceived usefulness of technology promotes satisfaction, commitment, and usage behavior.

For satisfaction, H11 was confirmed: SA affects BH ($\beta = 0.088$, $t = 2.232$, $p = 0.026$) and H12 was supported: SA affects EN ($\beta = 0.252$, $t = 4.291$, $p < 0.001$). This suggests that a positive and satisfying experience when using AI will lead to continued interaction and sustained use during the trip. Finally, H13 was strongly supported: EN affects BH ($\beta = 0.494$, $t = 9.350$, $p < 0.001$). This is the strongest relationship in the model, indicating that the level of focus and engagement of tourists when interacting with AI is the clearest driver of usage behavior.

In addition, both H3 and H4 are rejected. Regarding H3, the effect of PER on EN is not statistically significant ($\beta = 0.093$, $t = 1.901$, $p = 0.057$), indicating that perceived emotional responsiveness alone is insufficient to directly generate a state of engagement during AI interaction. This suggests that engagement is more strongly influenced by users' cognitive evaluations and overall experiential quality rather than by affective cues in isolation. Similarly, H4 is not supported ($\beta = -0.020$, $t = 0.570$, $p = 0.568$), as PER does not exert a direct influence on usage behavior (BH). This finding indicates that perceived emotional responsiveness does not function as an immediate behavioral trigger. Instead, its influence on usage behavior is indirectly transmitted through mediating mechanisms, particularly perceived usefulness (PU) and satisfaction (SA). Such a pattern suggests that perceived emotional responsiveness enhances technology use only when translated into perceived value and meaningful interaction experiences.

The analysis results show that the adjusted R^2 values of the dependent variables are all at a moderate to high level, reflecting the significant explanatory power of the model. Specifically, usage behavior (BH) achieved an adjusted $R^2 = 0.586$, indicating that the independent variables explained about 58.6% of the variance in GenAI usage behavior in tourism. Engagement experience (EN) had an adjusted $R^2 = 0.442$, at a moderate level, reflecting that nearly half of the variation in EN was explained by the factors in the model. Perceived usefulness (PU) achieved an adjusted $R^2 = 0.355$, at a moderate level, while satisfaction (SA) had an adjusted $R^2 = 0.563$, demonstrating good predictive power. These values meet the criteria proposed by Hair et al. (2021) and at the same time, show that the research model has appropriate explanatory capacity for the context of GenAI usage behavior of international tourists in Vietnam.

4.4. Discussion

The results indicate that emotional and experiential factors complement, rather than replace, the traditional cognitive determinants of TAM. Specifically, perceived emotional responsiveness of GenAI significantly enhances perceived usefulness and user satisfaction, while failing to exert direct influence on engagement experience and usage behavior. This pattern suggests that emotionally and contextually appropriate GenAI responses do not function as

immediate behavioral triggers; instead, they strengthen users' cognitive evaluations and experiential appraisals, which indirectly foster sustained and meaningful GenAI use over time. Unlike some previous studies that suggest that emotional factors can directly impact (Li, Xi, Hsu, Yu, & Zheng, 2025; Yu & Meng, 2026; Zhu & Yu, 2025) this result indicates the important mediating role of perceived usefulness, satisfaction, and engagement experience in the context of international tourists in Vietnam, where GenAI is still in the early stages of widespread application.

Perceived personalization is also confirmed to be a key factor, positively affecting both perceived usefulness, satisfaction, and usage behavior. This is consistent with Manzoor et al. (2024) and Yu and Meng (2026) and shows that in a multicultural tourism environment like Vietnam (Manzoor et al., 2024; Yu & Meng, 2026), AI's ability to tailor information to individual needs, language, and context is the foundation for creating trust and encouraging continuous use. It is noteworthy that perceived personalization and perceived emotional responsiveness do not only have individual effects but also complement each other: personalization of information without emotional sensitivity will reduce appeal; conversely, empathy without appropriate content will hardly create practical value.

Perceived usefulness continues to demonstrate the central role of TAM when it strongly affects satisfaction, engagement experience, and usage behavior. This reinforces the arguments of Davis (1989) and Chi et al. (2022) (Chi et al., 2022; Davis, 1989) but in the new context, perceived usefulness comes not only from functional benefits such as saving time or optimizing the itinerary, but also from the ability of AI to integrate into the tourism experience through language support, on-site information, and real-time relevant recommendations. The spillover effect of perceived usefulness to satisfaction and engagement experience shows that increasing perceived value will create a domino effect, increasing positive emotions and engagement.

Satisfaction acts as both an outcome and a bridge, influencing both engagement experience and usage behavior. When tourists are satisfied, they are more likely to maintain focus and interest in the technology, thereby increasing their intention to continue using it. This result is consistent with Seyfi et al. (2026) and Wu, Tian, and Liu (2025) and emphasizes that satisfaction in the context of GenAI is not only a response to information accuracy but also includes the feeling of being supported and understood in an unfamiliar environment (Seyfi et al., 2026; Wu et al., 2025).

The engagement experience factor emerged as the strongest predictor of behavior, consistent with Chen et al. (2025) and Chiru (2025). This suggests that in AI-enabled tourism experiences, the level of engagement and realness in interaction directly determines whether tourists maintain and expand their usage behavior. A key contribution of this study lies in clarifying engagement experience as the final and decisive link in the chain of influence from perceived personalization, through perceived usefulness and satisfaction, to usage behavior. This finding affirms that experience functions as a critical "gateway" through which cognitive evaluations and emotional appraisals are translated into actual technology use.

Overall, the study not only reinforces the core cognitive foundations of TAM but also substantially extends the model by integrating emotional and experiential dimensions. Importantly, it demonstrates that the perceived emotional responsiveness of GenAI does not directly drive behavior; rather, its influence is fully mediated through cognition, satisfaction, and engagement. This insight advances tourism technology adoption theory by highlighting the indirect and experience-driven nature of emotional effects, particularly in developing-country contexts such as Vietnam, where technological infrastructure, user familiarity, and the degree of AI humanization differ markedly from those in developed markets.

4.5. Theoretical and Practical Implications

4.5.1. Theoretical Implications

First, this study moves beyond a predominantly utilitarian interpretation of the Technology Acceptance Model by reconceptualizing TAM as an experiential-emotional framework in the context of GenAI.

By integrating perceived emotional responsiveness of GenAI, engagement experience, perceived personalization, and satisfaction, the study demonstrates that technology acceptance is no longer driven solely by functional

evaluations such as usefulness or efficiency. Instead, acceptance increasingly emerges from how users feel, engage, and experience AI interactions. This shift reflects a fundamental transformation in user behavior theory, particularly for next-generation, conversational, and adaptive technologies such as GenAI.

Second, the study provides a more nuanced understanding of emotional mechanisms in technology adoption by clarifying the indirect role of perceived emotional responsiveness of GenAI.

Rather than acting as a direct behavioral trigger, perceived emotional responsiveness influences usage behavior through cognitive and experiential mediators, including perceived usefulness, satisfaction, and engagement. These findings challenge earlier technology adoption models that implicitly assume linear and direct effects and instead position perceived emotional responsiveness as an enabling condition that enhances perceived value and experiential quality. In doing so, the study contributes to broader debates on AI anthropomorphism and affective interaction in digital service contexts.

Third, the study empirically grounds the experiential-emotional extension of TAM in a developing tourism destination, thereby enhancing its contextual relevance and external scope.

Vietnam represents a setting where international tourists interact with GenAI under conditions of linguistic diversity, cultural unfamiliarity, and uneven technological humanization. Evidence from this context extends TAM-based theories beyond mature digital markets and demonstrates how experiential and emotional mechanisms become particularly salient when tourists rely on AI to navigate unfamiliar environments. As such, the study advances technology acceptance theory by situating it within multicultural and digitally transforming tourism contexts.

4.5.2. Practical Implications

First of all, the results show that engagement experience is the factor that has the strongest influence on usage behavior, which suggests that GenAI systems should be designed with the ability to interact naturally, respond to context, and maintain a seamless flow of conversation. Technologies with real-time personalized human-machine interfaces will have a higher user retention rate, especially in the context of tourists who need immediate, natural and emotional support.

Second, technology companies and AI platforms should focus on integrating emotional responsiveness into algorithms, such as adjusting the response tone, recognizing situations and responding according to user emotions. This is not only a technical improvement but also a factor that brings satisfaction and creates a sense of trust for users, especially those who come from unfamiliar cultural environments and have high support needs such as international tourists in Vietnam.

Third, tourism businesses, including hotels, travel agencies, and attractions, should coordinate with AI developers to provide personalized experiences for tourists instead of just using chatbots or default recommendation systems. Integrating GenAI into the customer journey, from the planning stage to the on-site and post-trip experience, will help improve service quality and customer retention.

Ultimately, the results can also help tourism authorities develop a smart tourism digital transformation strategy where GenAI is not just an information delivery tool but part of the overall tourism experience, flexible, multilingual, emotional and personalized.

5. CONCLUSION

This study extended the Technology Acceptance Model (TAM) by integrating emotional and experiential factors, including perceived emotional responsiveness, engagement, perceived personalization, and satisfaction, to explain technology usage behavior among international tourists in Vietnam. The results showed that engagement was the strongest predictor of usage behavior, suggesting that the design of travel AI tools needs to go beyond pure functionality to create immersive, natural, and emotionally engaging interactive experiences. Perceived emotional responsiveness, while not directly influencing behavior, played an indirect role through perceived value and

satisfaction. This finding supports the argument that users increasingly expect empathy and nuanced responses from technology, especially in situations where travel is far from home and culturally unfamiliar.

This study has several limitations that should be acknowledged. First, although purposive sampling was appropriate for targeting actual GenAI users in a tourism context, it inevitably limits the generalizability of the findings beyond international tourists visiting Vietnam. The results should therefore be interpreted as context-specific rather than universally representative. Future research could adopt probability-based sampling strategies or replicate the model across multiple destinations and countries to enhance external validity and allow for cross-cultural comparison of GenAI usage behavior.

Second, the study employed a cross-sectional design, capturing tourist perceptions and behaviors at a single point in time. As GenAI technologies and user familiarity continue to evolve rapidly, longitudinal research is needed to examine how perceived emotional responsiveness, engagement, and satisfaction with AI change over time and how these dynamics influence sustained or discontinued usage.

Finally, future studies may extend the proposed framework by incorporating additional constructs such as technology trust, perceived risk, or AI anthropomorphism, as well as by comparing different forms of AI applications (e.g., chatbots, embodied avatars, VR/AR-based assistants). Such extensions would provide a deeper understanding of how different technological affordances shape emotional attachment, engagement, and behavioral outcomes in contemporary tourism experiences.

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Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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Appendix.

Table 1 presents the results of the construct reliability and validity assessment, including composite reliability and average variance extracted values. The results indicate that all constructs meet the recommended thresholds for reliability and convergent validity, confirming the adequacy of the measurement model.

Table 1. Construct reliability and validity.

Concept	Code	Indicator	Factor loading	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
Behavioral usage	BH1	I used GenAI to plan or search for travel destinations before my trip.	0.797	0.895	0.923	0.705
	BH2	I used GenAI to build my itinerary or schedule travel activities.	0.887			
	BH3	I used GenAI (e.g., ChatGPT) during the trip to ask for real-time recommendations (e.g., restaurants, attractions).	0.875			
	BH4	I used GenAI to solve problems or get support during unexpected travel situations.	0.816			
	BH5	I used GenAI to write reviews, share experiences, or reflect on my trip afterwards.	0.821			
Engagement experience	EN1	I actively interact with GenAI because it helps me complete tasks more easily.	0.906	0.901	0.931	0.772
	EN2	Using GenAI makes me feel excited and curious to explore more.	0.851			
	EN3	I feel focused and absorbed when using GenAI.	0.875			
	EN4	I frequently return to use GenAI due to its engaging and effective experience.	0.881			
Perceived emotional responsiveness	PER1	The GenAI I use can recognize my emotions during interaction.	0.803	0.872	0.906	0.660
	PER2	The AI provides responses appropriate to my emotional state.	0.821			
	PER3	I feel emotionally understood when using the AI in my tourism experience.	0.844			
	PER4	The AI creates emotionally interactive	0.762			

Concept	Code	Indicator	Factor loading	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
		experiences similar to human interaction.				
	PER5	The AI helps me feel supported, reassured, and emotionally connected during my travel.	0.829			
Perceived personalization	PP1	The GenAI provides travel information that matches my personal needs.	0.885	0.937	0.952	0.799
	PP2	The AI understands my preferences and adjusts travel suggestions accordingly.	0.892			
	PP3	The content generated by AI aligns with my style and behavioral patterns.	0.907			
	PP4	The AI gives real-time recommendations tailored to my specific context.	0.902			
	PP5	The AI creates interactive tourism experiences that reflect my interests and identity.	0.881			
Perceived usefulness	PU1	GenAI helps me plan my trips efficiently and saves time.	0.725	0.802	0.872	0.630
	PU2	The AI provides accurate and timely travel information that helps me make better decisions.	0.756			
	PU3	The AI-generated content (e.g., descriptions, recommendations) is useful and relevant to my needs.	0.847			
	PU4	The AI enables a more personalized and enjoyable travel experience.	0.841			
Satisfaction	SA1	I am satisfied with the overall experience of using GenAI during my travel.	0.764	0.882	0.911	0.630
	SA2	Using GenAI met or exceeded my expectations in the travel process.	0.783			
	SA3	I feel that using GenAI enhanced the quality of my travel experience.	0.805			
	SA4	I am happy with the support and	0.797			

Concept	Code	Indicator	Factor loading	Cronbach's alpha	Composite reliability (rho_c)	Average variance extracted (AVE)
		recommendations provided by the AI.				
	SA5	I would recommend using GenAI to others for planning or enhancing travel experiences.	0.844			
	SA6	I will continue using GenAI in future travel because I am satisfied with its performance.	0.765			

Table 2 presents the results of the discriminant validity assessment using the Heterotrait–Monotrait ratio (HTMT). The HTMT values are all below the recommended threshold, indicating that discriminant validity among the constructs is established.

Table 2. Results of discriminant validity.

	BH	EN	PER	PP	PU	SA
BH						
EN	0.806					
PER	0.482	0.538				
PP	0.549	0.492	0.407			
PU	0.702	0.733	0.655	0.463		
SA	0.612	0.654	0.726	0.419	0.803	