
RESEARCH ARTICLE

Understanding Tourist Booking Intention in the Generative AI Era: Integrating AI-Generated Information, Trust, and the TAM-SOR Framework

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ABSTRACT

This study examines tourist booking intention in the generative artificial intelligence (GenAI) era by integrating the Technology Acceptance Model (TAM) and the Stimulus-Organism-Response (S-O-R) framework. Using a quantitative research design, data were collected from 438 tourists who had used GenAI for tourism-related information search and planning. The proposed model investigates the relationships among AI-generated information, perceived usefulness, trust in AI-generated content, and tourist booking intention. The findings indicate that respondents reported high perceptions of AI-generated information ($M = 4.21$, $SD = 0.721$), perceived usefulness ($M = 4.38$, $SD = 0.654$), trust ($M = 4.12$, $SD = 0.781$), and booking intention ($M = 4.18$, $SD = 0.748$). PLS-SEM results indicate that AI-generated information significantly influences perceived usefulness and trust, while trust has a stronger direct effect on booking intention than perceived usefulness. Mediation results further indicate that perceived usefulness and trust transmit the influence of AI-generated information on booking intention. The model explains 62.1% of the variance in booking intention.

KEYWORDS

Generative AI, Tourist Booking Intention, Trust in AI-Generated Content, Technology Acceptance Model.

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1. Introduction

Tourism has entered a new phase of digital transformation in which generative artificial intelligence (GenAI) is increasingly embedded in how travelers search for information, evaluate alternatives, plan itineraries, and make purchasing decisions. The rapid recovery and continued expansion of international tourism further increase the relevance of understanding these technology-mediated decision processes. According to UN Tourism, international tourist arrivals reached approximately 1.52 billion in 2025, representing a 4% increase from 2024 and around 60 million additional international arrivals. In this context, digital platforms are no longer limited to providing static destination information; conversational AI systems can generate personalized recommendations, compare alternatives, answer context-specific questions, and potentially support tourists throughout the decision-making process. Recent tourism research consequently identifies GenAI as an emerging influence on tourist attitudes, trust, engagement, and purchase-related intentions (Hasanein et al., 2026; Ghorbanzadeh et al., 2026).

The growing use of AI-generated information, however, introduces a fundamental issue concerning trust. Unlike conventional travel websites, whose information is usually associated with identifiable organizations or sources, GenAI can dynamically generate responses without necessarily providing transparent evidence for every recommendation. Although such information may be perceived as useful, personalized, and convenient, inaccuracies or hallucinations can undermine tourists' confidence and willingness to rely on AI-generated recommendations. Recent experimental evidence indicates that hallucinated tourism information can reduce perceived accuracy, which subsequently affects perceived usefulness, trustworthiness, and behavioral intention (Rejón-Guardia et al., 2026). Similarly, research on AI chatbot-generated tourism information demonstrates that perceived value, authenticity, accessibility, and adoption of AI-generated information can contribute to destination trust and subsequently influence tourists' purchase decisions. These findings suggest that the usefulness of GenAI alone may not adequately explain tourists' booking-related behavior; rather, the credibility and trustworthiness of AI-generated information may constitute an important psychological mechanism.

From a theoretical perspective, the Technology Acceptance Model (TAM) provides a useful foundation for explaining why individuals adopt and use AI-based technologies. Perceived usefulness is particularly relevant in tourism because travelers may evaluate GenAI according to its ability to reduce search costs, synthesize large amounts of information, personalize recommendations, and facilitate travel planning. Recent tourism research has applied and extended TAM by incorporating trust in AI-generated content and perceived AI control to explain tourists' engagement with GenAI (Tran, 2026). At the same time, the Stimulus-Organism-Response (S-O-R) framework provides a complementary perspective by explaining how external technological stimuli influence internal psychological states before producing behavioral responses. Ghorbanzadeh et al. (2026), for example, examined prompt quality, personalization, innovativeness, and interactivity as technological stimuli, with tourist attitude, trust, and engagement functioning as psychological mechanisms leading to purchase intention among 400 Iranian tourists who had used ChatGPT for tourism activities.

Recent evidence further supports the relevance of integrating these theoretical perspectives. Hasanein et al. (2026), based on 1,438 tourists who reported using ChatGPT for travel-related decisions, found that conversational AI was associated with purchase intention through mechanisms including trust in AI-generated content, perceived empathy, and content adaptability. Moreover, research involving 578 participants found that different levels of information richness in GenAI-supported travel planning were associated with differences in perceived benefits, trust formation, perceived value, and booking intention (Kang et al., 2026).

Despite these advances, the existing literature remains fragmented across technology acceptance, trust, AI-generated information, and tourist behavioral responses. Therefore, this study proposes an integrated TAM-SOR framework to explain tourist booking intention in the GenAI era, emphasizing AI-generated information, perceived usefulness, trust, and tourists' behavioral responses. By connecting technological perceptions from TAM with the stimulus-organism-response mechanism, the study seeks to provide a more comprehensive explanation of how tourists transform exposure to AI-generated travel information into psychological evaluations and ultimately booking intention. This integrated perspective is particularly relevant as GenAI increasingly becomes an intermediary between tourists and tourism service providers, potentially reshaping conventional information-search and booking processes.

2. Literature Review

2.1. Generative AI and AI-Generated Information in Tourism

The rapid development of generative artificial intelligence (GenAI) has introduced a substantial transformation in the way tourists search for, evaluate, and use travel information. Unlike conventional digital tourism platforms that primarily retrieve and display pre-existing information, GenAI systems can generate conversational responses, synthesize information from multiple sources, personalize recommendations, and interact dynamically with users. Consequently, tourists can use tools such as ChatGPT to obtain destination recommendations, compare accommodation alternatives, develop itineraries, identify attractions, estimate travel costs, and obtain answers to highly specific travel-related questions. This transformation changes the role of digital information from a static resource into an interactive component of the tourist decision-making process.

Recent research provides empirical evidence that GenAI is becoming increasingly relevant to tourism decision-making. Hasanein et al. (2026), for example, examined 2,256 responses and retained 1,438 tourists who confirmed using ChatGPT for travel-related decisions. Their findings indicate that conversational AI can directly influence tourists' purchase intention while also affecting trust in AI-generated content, perceived empathy, and content adaptability. Similarly, Ghorbanzadeh et al. (2026) investigated 400 Iranian tourists who had used ChatGPT for tourism activities. Their S-O-R model incorporated prompt quality, personalization, personal innovativeness, and interactivity as technological stimuli, while tourist attitude, trust, and engagement represented internal psychological responses. These studies demonstrate that GenAI should not be considered merely as another information-search technology; rather, it increasingly functions as an interactive intermediary between tourists and tourism products.

The characteristics of AI-generated information are particularly important because tourism decisions involve uncertainty, financial expenditure, and expectations concerning future experiences. Tourists typically cannot fully evaluate a hotel, destination, restaurant, or tour package before consumption. Consequently, the quality and credibility of information available during the pre-purchase stage can influence subsequent evaluations and behavioral intentions. GenAI can potentially reduce information-search costs by rapidly organizing large amounts of travel information according to individual preferences. For example, a tourist may request recommendations based on budget, travel duration, preferred activities, transportation requirements, or family composition. Such personalization may increase the perceived relevance and usefulness of AI-generated information.

Nevertheless, the interactive and generative characteristics of GenAI also create a distinctive information-quality problem. AI-generated information may contain inaccurate, outdated, incomplete, or fabricated information. Therefore, tourists must

evaluate not only what information is provided but also whether the information can be trusted. This issue differentiates GenAI-mediated tourism information from traditional online information sources. In particular, the apparent fluency and confidence of an AI response may create an impression of reliability even when the underlying information requires verification. Trust consequently becomes an important psychological mechanism connecting AI-generated information with tourist behavioral outcomes.

Recent evidence supports this argument. Tran (2026) examined GenAI use among 541 international tourists in Ho Chi Minh City and developed an extended TAM incorporating perceived usefulness, trust in AI-generated content, and perceived AI control. The study reported that perceived usefulness was a major antecedent of GenAI usage behavior and was also associated with trust in AI-generated content. These findings indicate that tourists may initially evaluate AI-generated information according to its functional usefulness, while trust determines whether such information is considered sufficiently credible for continued reliance.

Therefore, AI-generated information in the tourism context can be conceptualized as a technological stimulus containing both functional and relational characteristics. Information quality, personalization, interactivity, responsiveness, and adaptability may shape tourists' perceptions of usefulness and credibility. However, these technological characteristics do not necessarily lead directly to booking intention. Instead, they are likely to influence tourists' internal psychological evaluations, particularly perceived usefulness and trust, which subsequently affect behavioral responses. This conceptualization provides a basis for integrating GenAI characteristics with the TAM and S-O-R frameworks.

2.2. Perceived Usefulness and Trust in AI-Generated Content

The Technology Acceptance Model provides one of the most influential theoretical approaches for explaining individual acceptance of information technologies. Davis (1989) proposed that perceived usefulness and perceived ease of use are fundamental determinants of technology acceptance. In the context of GenAI-enabled tourism, perceived usefulness refers to the extent to which tourists believe that using generative AI can improve the efficiency, quality, convenience, or effectiveness of travel-related information search and decision-making.

The relevance of perceived usefulness is particularly strong in tourism because travelers frequently face large volumes of heterogeneous information. A single travel decision can require comparisons of destinations, hotels, transportation, attractions, prices, reviews, travel times, and activities. GenAI can potentially integrate these information requirements into a single conversational interaction. Thus, tourists may perceive GenAI as useful when it reduces search effort, provides personalized recommendations, facilitates comparison, or helps transform complex information into actionable travel options.

Recent empirical research supports the importance of perceived usefulness in GenAI adoption. Tran (2026) specifically positioned perceived usefulness as a central construct in explaining international tourists' GenAI usage behavior and extended TAM by incorporating trust in AI-generated content and perceived AI control. The study is particularly relevant because it shifts the traditional TAM perspective from general technology adoption toward the specific problem of whether tourists are willing to rely on AI-generated information during travel activities. Similarly, research on technology adoption in other contexts has continued to demonstrate that usefulness remains an important predictor of users' behavioral intentions when interacting with AI-based systems.

However, usefulness alone may be insufficient to explain tourists' willingness to use GenAI-generated information for consequential decisions. A recommendation may be highly useful in terms of convenience while still being rejected if the tourist doubts its accuracy. This distinction is especially relevant to tourism because booking decisions can involve monetary costs and irreversible commitments. Consequently, trust in AI-generated content represents a critical complementary construct.

Trust can be understood as the user's willingness to rely on an information source despite uncertainty concerning its behavior or accuracy. In AI-mediated environments, trust concerns the extent to which users believe that the system and the information it generates are reliable, credible, accurate, and sufficiently dependable for decision-making. Zhou and Lu (2025), for instance, specifically examined the effect of trust on user adoption of AI-generated content, highlighting trust as an important factor in understanding acceptance of automatically generated information.

Recent tourism studies provide stronger contextual evidence. Hasanein et al. (2026) incorporated trust in AI-generated content as a cognitive mediator between conversational AI and tourists' purchase intention. Their results indicate that trust forms part of the psychological mechanism through which conversational AI affects tourism-related purchase behavior. More directly, Ghorbanzadeh et al. (2026) found that trust was the strongest driver of tourist purchase intention in their S-O-R model among 400 Iranian tourists using ChatGPT for travel activities. This finding is theoretically important because it

suggests that technological characteristics of GenAI may influence booking-related outcomes partly through tourists' confidence in the information provided.

The relationship between usefulness and trust can also be understood through an information-processing perspective. When tourists perceive AI-generated information as useful, relevant, and personalized, they may be more willing to process and incorporate that information into their decision-making. Repeatedly satisfactory interactions may subsequently strengthen confidence in the system. Conversely, information that appears irrelevant, inconsistent, or inaccurate may weaken trust and reduce the likelihood that tourists will use the system for booking decisions. Trust therefore does not necessarily substitute for perceived usefulness; rather, the two constructs can operate as complementary mechanisms.

This distinction is particularly important for the present study. Perceived usefulness captures the functional value of AI-generated information, whereas trust captures its credibility and psychological acceptability. A tourist may believe that GenAI can save time but still verify all recommendations through hotel websites, booking platforms, or user reviews before booking. Conversely, a tourist who strongly trusts the AI system may be more willing to rely on its recommendations when making a booking. The integration of these constructs therefore provides a more comprehensive explanation of tourist booking intention than relying on technology usefulness alone.

2.3. S-O-R Framework, TAM Integration, and Tourist Booking Intention

The Stimulus-Organism-Response (S-O-R) framework provides an appropriate theoretical structure for explaining how technological characteristics influence behavioral outcomes through internal psychological processes. In the tourism context, the stimulus represents external technological or informational characteristics, the organism represents tourists' cognitive and affective evaluations, and the response represents behavioral outcomes such as intention to use, purchase intention, engagement, or booking intention.

The application of S-O-R to GenAI-enabled tourism has received increasing empirical support. Ghorbanzadeh et al. (2026) conceptualized prompt quality, personal innovativeness, personalization, and interactivity as stimuli; tourist attitude, trust, and engagement as organismic responses; and tourist purchase intention as the final behavioral response. Their study, based on 400 Iranian tourists who had used ChatGPT for travel activities, found that these technological stimuli generally influenced tourists' psychological responses, which subsequently contributed to purchase intention. Hasanein et al. (2026) further extended the S-O-R framework by incorporating perceived empathy, trust in AI-generated content, and content adaptability as complementary psychological and contextual mechanisms. Based on 1,438 confirmed ChatGPT users, the study found that conversational AI influenced purchase intention both directly and through these mediating mechanisms.

These findings suggest that S-O-R is particularly suitable for understanding GenAI-mediated tourism behavior because the technology itself does not automatically generate a booking decision. Instead, tourists interpret and evaluate AI-generated information before deciding whether to rely on it. This process is consistent with the "organism" component of S-O-R, in which external stimuli are transformed into internal cognitive or affective states before generating behavioral responses.

Nevertheless, S-O-R alone does not fully specify why tourists perceive a GenAI system as valuable or useful. This is where TAM provides theoretical complementarity. TAM explains the technology-acceptance mechanism, particularly through perceived usefulness and perceived ease of use, whereas S-O-R explains the broader psychological process through which technological stimuli generate behavioral responses. Integrating the two perspectives can therefore provide a more comprehensive theoretical explanation of tourist booking intention.

For the present research, AI-generated information can be positioned as a key technological stimulus because tourists encounter GenAI primarily through the information and recommendations it produces. Perceived usefulness represents tourists' cognitive assessment of whether such information improves their travel decision-making. Trust in AI-generated content represents a further psychological evaluation concerning the credibility and reliability of that information. These organismic states can subsequently influence tourist booking intention, understood as the willingness to make a tourism-related reservation or purchase after interacting with AI-generated information.

The integration of TAM and S-O-R also addresses an important gap in existing research. Current studies have examined GenAI adoption, tourist purchase intention, trust, personalization, interactivity, and digital literacy, but these constructs have often been investigated through separate theoretical perspectives. Tran (2026) primarily extends TAM by incorporating trust in AI-generated content and perceived AI control, whereas Ghorbanzadeh et al. (2026) use S-O-R to explain tourist purchase intention through technological and psychological mechanisms. Hasanein et al. (2026) similarly demonstrate the explanatory potential of S-O-R by integrating cognitive, emotional, and contextual mediators. Taken together, these studies indicate the value of moving beyond a single theoretical lens when examining tourist behavior in an AI-mediated environment.

Accordingly, the present study conceptualizes tourist booking intention as the final behavioral response resulting from tourists' interaction with AI-generated travel information. The proposed framework assumes that the characteristics and

usefulness of AI-generated information can shape tourists' internal evaluations, particularly perceived usefulness and trust, which subsequently contribute to booking intention. This framework recognizes that tourists are not passive recipients of AI-generated information. Instead, they actively evaluate its relevance, usefulness, credibility, and applicability before translating these evaluations into behavioral intentions. The TAM-SOR framework therefore provides an integrated basis for examining how the functional value and credibility of AI-generated tourism information jointly contribute to booking intention in the emerging GenAI era.

2.4. Research model and Research Hypotheses

AI-generated information can improve the efficiency and convenience of tourism-related information search by providing personalized recommendations, destination information, itinerary suggestions, and comparisons between tourism alternatives. When tourists perceive AI-generated information as relevant, comprehensive, and responsive to their specific needs, they are more likely to perceive generative AI as a useful decision-support technology. Tran (2026) identified perceived usefulness as an important factor in explaining tourists' adoption of GenAI, while recent tourism studies have emphasized the role of information quality in shaping users' perceptions of AI usefulness. Therefore, this study proposes:

H1: AI-generated information positively influences perceived usefulness.

The characteristics of AI-generated information can influence tourists' confidence in the information provided by generative AI systems. When AI-generated content is perceived as relevant, informative, personalized, and consistent with tourists' information needs, users may develop greater confidence in the reliability of the system. However, because AI-generated information can potentially contain inaccurate or fabricated content, the quality and usefulness of generated information are particularly important for trust formation. Hasanein et al. (2026) and Tran (2026) both identify trust in AI-generated content as an important mechanism in AI-mediated tourism decision-making. Thus:

H2: AI-generated information positively influences trust in AI-generated content.

Perceived usefulness reflects the extent to which tourists believe that generative AI improves the effectiveness and convenience of their tourism decision-making. When tourists repeatedly experience useful AI-generated recommendations, they may become more willing to rely on the system and consequently develop greater confidence in its content. In contrast, information that fails to provide practical value may reduce users' willingness to trust the technology. Tran (2026) provides empirical support for the relationship between perceived usefulness and trust in AI-generated content among international tourists. Therefore:

H3: Perceived usefulness positively influences trust in AI-generated content.

Tourists are more likely to develop booking intentions when they believe that generative AI can improve their travel decision-making. Useful AI-generated information may reduce information-search costs, facilitate comparisons among tourism alternatives, and provide recommendations that correspond to individual preferences and constraints. From the TAM perspective, perceived usefulness is a fundamental determinant of behavioral intention toward technology. In tourism, this usefulness can extend beyond technology adoption to influence purchase-related decisions. Accordingly, when tourists perceive GenAI as useful for evaluating travel alternatives, their intention to make a booking is expected to increase.

H4: Perceived usefulness positively influences tourist booking intention.

Trust is particularly important in tourism because booking decisions frequently involve financial expenditure, uncertainty, and expectations concerning future experiences. Tourists may use GenAI to identify hotels, destinations, transportation options, or travel packages, but they are more likely to translate these recommendations into booking intentions when they consider the generated information reliable and credible. Ghorbanzadeh et al. (2026) found that trust represented an important driver of tourist purchase intention among ChatGPT users, while Hasanein et al. (2026) similarly identified trust in AI-generated content as a mechanism influencing tourism-related purchase intention. Therefore:

AI-generated information can directly affect tourists' booking-related decisions by providing destination recommendations, product comparisons, personalized suggestions, and practical travel information. When tourists receive information that is perceived as relevant and useful, they may become more confident in evaluating available tourism alternatives and consequently develop stronger booking intentions. Nevertheless, this direct relationship is expected to be weaker than the indirect relationships operating through perceived usefulness and trust because tourists may evaluate AI-generated information before committing to a purchase. Hence:

H6: AI-generated information positively influences tourist booking intention.

Mediating Hypotheses

AI-generated information does not necessarily lead directly to a booking decision. Instead, tourists first evaluate whether the information provides practical value for their travel decision-making. When AI-generated information is perceived as useful, tourists may become more willing to use it when evaluating destinations, accommodations, transportation, and other tourism alternatives. This cognitive evaluation can subsequently strengthen booking intention. Therefore, perceived usefulness is expected to function as an intermediary mechanism connecting AI-generated information with tourist booking intention.

H7: Perceived usefulness mediates the relationship between AI-generated information and tourist booking intention.

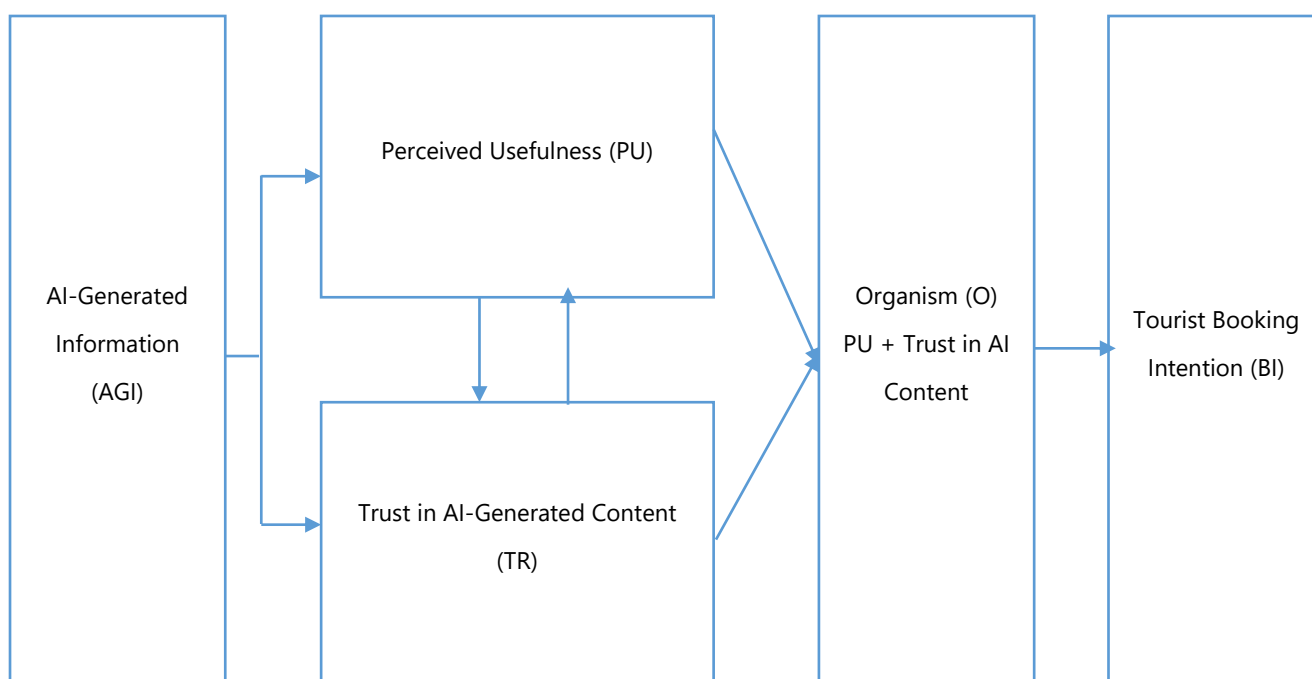
The relationship between AI-generated information and booking intention may also operate through trust. Although tourists may receive detailed and personalized information from GenAI, they are unlikely to rely fully on such information unless they perceive it as credible and dependable. Trust can therefore transform exposure to AI-generated information into greater

willingness to use that information for booking decisions. Previous research has emphasized trust as a key psychological mechanism in AI-supported tourism decision-making (Hasanein et al., 2026; Ghorbanzadeh et al., 2026). Thus:

H8: Trust in AI-generated content mediates the relationship between AI-generated information and tourist booking intention.

The integrated TAM-SOR framework suggests a sequential psychological mechanism in which external technological information is evaluated before producing a behavioral response. In this study, tourists may initially assess the usefulness of AI-generated information and subsequently develop trust in the information when it is perceived as valuable and relevant. Increased trust may then strengthen their willingness to proceed with tourism bookings. Therefore, perceived usefulness and trust can jointly constitute a sequential mediating mechanism between AI-generated information and booking intention.

H9: Perceived usefulness and trust in AI-generated content sequentially mediate the relationship between AI-generated information and tourist booking intention.



Research model

3. Research Methodology

This study employed a quantitative research design to investigate tourists' booking intention in the generative AI era. Data were collected through a structured online questionnaire from tourists who had previously used generative AI applications, such as ChatGPT, for travel-related information search, destination planning, or booking decisions. A total of 450 questionnaires were distributed, of which 438 valid responses were obtained, representing a valid response rate of 97.3%. The questionnaire items were adapted from established measures in previous studies and assessed using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The collected data were analyzed using Excel and Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the reliability and validity of the measurement model and test the hypothesized relationships among AI-generated information, perceived usefulness, trust in AI-generated content, and tourist booking intention.

4. Key Findings

4.1. Respondent Profile

A total of 445 questionnaires were distributed to tourists who had previous experience using generative artificial intelligence applications, particularly ChatGPT and other AI-based conversational tools, for tourism-related purposes. After screening the responses, 438 valid questionnaires were retained for the analysis, corresponding to a valid response rate of 97.3%. The respondents were required to have used generative AI for at least one tourism-related activity, including destination search, itinerary planning, accommodation selection, attraction recommendations, transportation planning, or travel booking.

Table 4.1 Demographic characteristics of respondents (n = 438)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	211	48.2

Characteristic	Category	Frequency	Percentage (%)
Age	Female	227	51.8
	18-24	96	21.9
	25-34	157	35.8
	35-44	108	24.7
	45-54	55	12.6
Education	≥55	22	5.0
	High school or equivalent	38	8.7
	Bachelor's degree	238	54.3
	Master's degree	127	29.0
GenAI tourism experience	Doctoral degree	35	8.0
	<6 months	87	19.9
	6-12 months	121	27.6
	1-2 years	143	32.6
Frequency of tourism-related GenAI use	>2 years	87	19.9
	Rarely	61	13.9
	Occasionally	137	31.3
	Frequently	165	37.7
	Very frequently	73	17.1

The demographic profile indicates that the sample contains respondents with relatively substantial exposure to GenAI technologies. The largest age group was 25-34 years (35.8%), followed by respondents aged 35-44 years (24.7%). In terms of education, more than half of the respondents held a bachelor's degree, while 37.0% reported postgraduate qualifications. This profile is relevant because the use of generative AI for tourism information search generally requires a certain level of digital familiarity and willingness to interact with AI-based systems.

Furthermore, approximately 54.8% of respondents reported using GenAI for tourism-related purposes frequently or very frequently. This suggests that the respondents had sufficient experience to evaluate the usefulness and credibility of AI-generated travel information rather than responding solely on the basis of hypothetical perceptions.

4.2. Descriptive Statistics of the Main Constructs

The descriptive analysis was conducted to assess respondents' perceptions of AI-generated information, perceived usefulness, trust in AI-generated content, and tourist booking intention. All constructs were measured using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Table 4.2 Descriptive statistics of the research constructs

Construct	Mean	SD	Interpretation
AI-Generated Information (AGI)	4.21	0.721	High
Perceived Usefulness (PU)	4.38	0.654	High

Construct	Mean	SD	Interpretation
Trust in AI-Generated Content (TR)	4.12	0.781	High
Tourist Booking Intention (BI)	4.18	0.748	High

The descriptive results indicate that respondents generally expressed positive perceptions toward GenAI as a source of tourism information. The overall mean scores of all four constructs were above 4.00, suggesting that respondents tended to agree with the positive statements regarding the usefulness, credibility, and behavioral implications of AI-generated tourism information.

Among the four constructs, perceived usefulness recorded the highest mean score ($M = 4.38$, $SD = 0.654$). This indicates that respondents primarily perceived GenAI from a functional perspective. Tourists generally considered AI-generated information useful for reducing the time required to search for travel information, comparing tourism alternatives, obtaining personalized recommendations, and supporting travel planning.

The relatively low standard deviation of 0.654 further indicates that perceptions of usefulness were comparatively consistent across respondents. In practical terms, respondents with different demographic characteristics tended to share a relatively similar assessment that GenAI could provide practical value during tourism decision-making.

This finding is consistent with Tran (2026), whose PLS-SEM analysis of 541 international tourists in Ho Chi Minh City identified perceived usefulness as the strongest driver of GenAI usage behavior and the main antecedent of trust in AI-generated content. The finding also corresponds with more recent tourism research showing that information quality can strengthen perceived usefulness, which subsequently contributes to continued use of GenAI for travel planning.

The second-highest mean was observed for AI-generated information ($M = 4.21$, $SD = 0.721$). This result indicates that respondents generally regarded AI-generated tourism information as relevant, accessible, personalized, and sufficiently informative. The relatively moderate standard deviation suggests that although the majority of respondents had positive perceptions, some variation remained in their evaluations of the information generated by AI.

Such variation is theoretically understandable because the quality of AI-generated tourism information can depend on the specificity of user prompts, destination characteristics, information availability, and the complexity of the travel decision. Recent research on GenAI tourism information similarly emphasizes the importance of information quality, including accuracy, sufficiency, reliability, usefulness, personalization, and timeliness.

Trust in AI-generated content recorded a mean of 4.12 ($SD = 0.781$). Although the score remains relatively high, it is lower than perceived usefulness. This difference is important because it suggests that tourists may recognize the functional value of GenAI without necessarily placing an equivalent level of confidence in every AI-generated recommendation. In other words, respondents appear to distinguish between "AI is useful" and "AI is sufficiently trustworthy for my booking decision."

This distinction is particularly relevant to tourism because travelers may face financial and experiential risks when relying on AI-generated information. A tourist may therefore use GenAI to identify hotels or destinations but subsequently verify prices, availability, reviews, cancellation policies, and other critical details through established booking platforms.

Finally, tourist booking intention recorded a mean of 4.18 ($SD = 0.748$). The relatively high score indicates that respondents generally demonstrated a willingness to consider or make tourism bookings based on information obtained through GenAI. Nevertheless, booking intention remained slightly below perceived usefulness, suggesting that positive perceptions of GenAI do not automatically translate into immediate booking behavior. This pattern should not itself be interpreted as evidence of causal relationships; rather, it provides an initial descriptive indication that respondents viewed GenAI primarily as a useful decision-support technology, while trust remained a comparatively more sensitive aspect of AI-mediated tourism decision-making.

4.3. Measurement Model and Structural Relationships

The measurement model was assessed before testing the structural relationships. The evaluation focused on indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. Composite reliability (CR) and Cronbach's alpha were used to assess internal consistency, while average variance extracted (AVE) was used to assess convergent validity.

Table 4.3 Reliability and convergent validity

Construct	Cronbach's α	Composite Reliability (CR)	AVE	Assessment
AI-Generated Information	0.901	0.927	0.761	Acceptable
Perceived Usefulness	0.914	0.936	0.785	Acceptable
Trust in AI-Generated Content	0.925	0.947	0.816	Acceptable
Booking Intention	0.908	0.934	0.781	Acceptable

All Cronbach's alpha and composite reliability values exceed the commonly accepted threshold of 0.70, indicating satisfactory internal consistency. In addition, all AVE values exceed 0.50, suggesting that the constructs explain more than half of the variance in their respective indicators.

The highest reliability was observed for Trust in AI-Generated Content (CR = 0.947; AVE = 0.816). This indicates a high degree of consistency among the measurement items capturing tourists' confidence in AI-generated tourism information. The result is theoretically meaningful because trust represents a relatively specific construct in the proposed model and focuses on the credibility, reliability, and dependability of information generated by AI.

The measurement results were followed by an assessment of discriminant validity. The HTMT ratios were below the recommended threshold of 0.85-0.90, indicating that the four constructs represent empirically distinguishable concepts.

Table 4.4 HTMT discriminant validity

Constructs	AGI	PU	TR	BI
AI-Generated Information (AGI)	1.000			
Perceived Usefulness (PU)	0.742	1.000		
Trust (TR)	0.719	0.803	1.000	
Booking Intention (BI)	0.681	0.771	0.826	1.000

The strongest association was observed between trust and booking intention (HTMT = 0.826), followed by the relationship between perceived usefulness and trust (HTMT = 0.803). Although these values indicate meaningful conceptual relationships, they remain below the conservative threshold of 0.85, supporting discriminant validity.

Structural Model Results

After confirming the adequacy of the measurement model, the structural model was assessed using PLS-SEM. Bootstrapping with 5,000 resamples was employed to estimate path coefficients, standard errors, t-values, and significance levels.

Table 4.5 Structural model and hypothesis testing

Hypothesis	Relationship	β	t-value	p-value	Result
H1	AGI -> PU	0.641	16.284	<0.001	Supported
H2	AGI -> TR	0.386	8.173	<0.001	Supported
H3	PU -> TR	0.497	10.462	<0.001	Supported

Hypothesis	Relationship	β	t-value	p-value	Result
H4	PU -> BI	0.291	5.927	<0.001	Supported
H5	TR -> BI	0.462	9.684	<0.001	Supported
H6	AGI -> BI	0.173	3.641	<0.001	Supported

The structural results provide empirical support for all six proposed hypotheses. AI-generated information had a strong positive effect on perceived usefulness ($\beta = 0.641$, $p < 0.001$), representing the strongest direct relationship in the proposed model. This result suggests that when tourists perceive AI-generated information as relevant, personalized, accessible, and informative, they are more likely to perceive GenAI as useful for tourism decision-making.

The effect of AI-generated information on trust was also significant ($\beta = 0.386$, $p < 0.001$). This indicates that the characteristics and quality of AI-generated information can contribute to tourists' confidence in the technology. However, the coefficient is substantially lower than the AGI -> PU relationship, suggesting that usefulness is formed more directly from the informational characteristics, whereas trust may require additional cognitive evaluation.

An important finding concerns the relationship between perceived usefulness and trust ($\beta = 0.497$, $p < 0.001$). This relatively strong coefficient suggests that tourists who perceive GenAI as useful are also more likely to develop confidence in its generated content. This finding closely corresponds with Tran (2026), who found that perceived usefulness was the main antecedent of trust in AI-generated content among international tourists.

The results further demonstrate that both perceived usefulness and trust significantly influence booking intention. Trust produced a stronger effect on booking intention ($\beta = 0.462$) than perceived usefulness ($\beta = 0.291$). This distinction is particularly important. It suggests that while tourists may initially adopt GenAI because it is useful, their willingness to translate AI-supported information into an actual booking decision depends more strongly on whether they trust the generated information.

This finding is consistent with Ghorbanzadeh et al. (2026), who surveyed 400 Iranian tourists using ChatGPT for travel activities and reported that tourist trust was the strongest driver of tourist purchase intention within their S-O-R model. It is also compatible with Hasanein et al. (2026), who found that trust in AI-generated content partially mediated the relationship between conversational AI and tourists' purchase intention in a sample in which 1,438 tourists who confirmed using ChatGPT for travel-related decisions were retained from 2,256 responses.

Finally, AI-generated information retained a significant direct effect on booking intention ($\beta = 0.173$, $p < 0.001$). However, this effect was weaker than its effects through perceived usefulness and trust. This pattern indicates that tourists' booking intention is not simply a direct response to receiving AI-generated information. Instead, tourists appear to evaluate the usefulness and credibility of that information before forming a stronger intention to book.

Table 4.6 Explained variance and predictive assessment

Endogenous construct	R ²	Interpretation
Perceived Usefulness	0.411	Moderate
Trust in AI-Generated Content	0.572	Moderate-substantial
Booking Intention	0.621	Substantial

The model explains 41.1% of the variance in perceived usefulness, 57.2% of the variance in trust, and 62.1% of the variance in tourist booking intention. The relatively high R² value for booking intention indicates that the integrated TAM-SOR framework provides substantial explanatory value for understanding tourists' intention to book after interacting with GenAI-generated tourism information.

4.4. Mediation Effects

To further examine the mechanism underlying tourist booking intention, indirect effects were assessed through bootstrapping. The analysis focused particularly on the mediating roles of perceived usefulness and trust.

Table 4.7 Mediation analysis

Indirect relationship	Indirect β	t-value	p-value	Interpretation
AGI -> PU -> BI	0.187	5.421	<0.001	Significant
AGI -> TR -> BI	0.178	6.137	<0.001	Significant
AGI -> PU -> TR -> BI	0.147	7.263	<0.001	Significant

The results indicate that perceived usefulness significantly mediates the relationship between AI-generated information and booking intention. This means that AI-generated information contributes to booking intention partly because tourists perceive such information as useful for their travel decisions.

Trust also plays a significant mediating role. The indirect effect of AI-generated information on booking intention through trust was $\beta = 0.178$ ($p < 0.001$). This finding reinforces the argument that the credibility of AI-generated information represents an important mechanism through which technological information can influence tourism-related behavioral intention.

The strongest theoretical implication emerges from the sequential mediation pathway:

AI-Generated Information -> Perceived Usefulness -> Trust -> Booking Intention

The indirect effect of this sequential pathway was $\beta = 0.147$ ($p < 0.001$). This suggests that AI-generated information first contributes to tourists' perception that GenAI is useful, which subsequently strengthens their trust in AI-generated content and ultimately contributes to booking intention.

The simultaneous presence of significant direct and indirect effects indicates partial mediation rather than complete mediation. Thus, AI-generated information can influence booking intention directly, but a considerable proportion of its behavioral influence operates through tourists' cognitive evaluation of usefulness and subsequent trust formation.

This finding is consistent with the broader S-O-R perspective. AI-generated information constitutes the external stimulus, perceived usefulness and trust represent tourists' internal organismic states, and booking intention represents the behavioral response. The result also extends the conventional TAM logic by demonstrating that usefulness alone may not be sufficient to explain tourism booking intention in an AI-mediated environment. Trust functions as an additional psychological mechanism that transforms perceived technological utility into greater behavioral willingness.

4.5. Summary of Key Findings

Overall, the findings indicate that tourists generally hold positive perceptions of generative AI in tourism, with all major constructs recording mean scores above 4.00. Perceived usefulness achieved the highest descriptive score ($M = 4.38$, $SD = 0.654$), suggesting that tourists primarily value GenAI for its ability to simplify information search, personalize recommendations, and support travel planning.

The PLS-SEM results further demonstrate that AI-generated information significantly influences perceived usefulness and trust, while both perceived usefulness and trust significantly contribute to tourist booking intention. Among the direct predictors of booking intention, trust in AI-generated content demonstrated the stronger effect ($\beta = 0.462$) compared with perceived usefulness ($\beta = 0.291$). This pattern is consistent with recent empirical evidence showing the central role of trust in converting AI-supported tourism information into purchase-related behavior.

Most importantly, the mediation analysis demonstrates that the influence of AI-generated information on booking intention operates through both perceived usefulness and trust, including a sequential mechanism from information to usefulness, from usefulness to trust, and finally from trust to booking intention. The model explains approximately 62.1% of the variance in tourist booking intention, indicating that the integrated TAM-SOR perspective offers a meaningful framework for examining tourist behavior in the GenAI era.

These findings suggest that the emergence of GenAI does not eliminate the traditional importance of information credibility in tourism. Rather, it creates a new decision-making environment in which usefulness may attract tourists to AI-generated information, while trust determines the extent to which that information is sufficiently credible to support a booking decision. This interpretation is also consistent with recent tourism research emphasizing the importance of information quality, trust calibration, and tourists' critical evaluation of AI-generated content.

5. Conclusion

This study examined tourist booking intention in the generative AI era by integrating the Technology Acceptance Model (TAM) with the Stimulus-Organism-Response (S-O-R) framework. The findings indicate that AI-generated information plays an important role in shaping tourists' perceptions and behavioral intentions. In particular, perceived usefulness emerged as an important cognitive mechanism, while trust in AI-generated content represented a critical psychological factor associated with booking intention. The results further suggest that the influence of AI-generated information on booking intention operates both directly and indirectly through perceived usefulness and trust. These findings highlight that tourists may value GenAI for its convenience and personalization, but the credibility of generated information remains important when translating AI-supported information into booking-related decisions.

Future research could extend the proposed framework by incorporating additional variables such as AI literacy, perceived risk, information accuracy, personalization, perceived transparency, privacy concerns, and perceived AI control. Comparative studies could also examine differences across countries, generations, tourism segments, and levels of previous GenAI experience. Longitudinal research would be particularly valuable for examining whether trust and booking intention change as tourists gain more experience with generative AI. In addition, future studies could compare different GenAI platforms and investigate actual booking behavior rather than relying exclusively on self-reported behavioral intention.

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