IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

The Personalisation–Privacy Paradox in AI-Driven Digital Travel Platforms: The Role of Trust in Consumer Booking Behaviour

Vipul P. Karnik[1] and Nazim Hussain[2]
Research Scholar, School of Business & Management, Jaipur National University, Jaipur, India [1]
Assistant Professor, School of Business & Management, Jaipur National University, Jaipur, India [2]

Abstract: *The use of Artificial Intelligence (AI) has revolutionised the way that digital travel platforms are personalised to improve user experience and decision-making. But there have been concerns about privacy and trust with the influx of personalised data to provide personalised recommendations. This study aims to explore the personalisation-privacy paradox by analysing the connections between AI-based personalisation, privacy concerns, trust and booking intention. Using quantitative research design, data were collected from 384 users of digital travel platforms and analysed using Structural Equation Modelling (SEM). The results suggest that personalisation has a positive impact on trust, and privacy concerns reduce the levels of trust and intention to book. The significant mediation of the relationship between personalisation and booking Behaviour by trust was found. This study adds to the existing body of work on consumer Behaviour facilitated by AI, emphasizing the need for a balance between personalisation and responsible data management to build consumer trust and engagement on platforms.*

Keywords: Artificial Intelligence, Personalisation, Privacy Concerns, Consumer Trust, Booking Intention, Digital Platforms

I. INTRODUCTION

1.1 Background

Artificial Intelligence (AI) is one of the most game-changing technologies for today's digital platforms and consumer interactions. Machine learning, predictive analytics, recommendation systems, and generative AI have paved the way for delivering hyper-personalised services, automating decision-making, and enhancing customer experiences in numerous sectors. AI-powered tools are being used in digital platforms to process vast amounts of information regarding their users and make personalised recommendations based on their preferences, Behaviour, and buying habits.

Among its numerous benefactors, the travel industry tops the list. To boost personalisation in an online travel platform, like the hotel booking system, travel aggregator, or airline booking platform, AI and personalisation features were incorporated to make traveling easier for users. By analysing search history, booking trends, demographic data, and behaviour, these platforms can provide individual travel suggestions, time-sensitive offers, and tailored travel encounters to travellers.

But privacy, transparency, and data security have been raised as concerns with respect to personalisation powered by AI. AI systems' effectiveness is largely dependent on the amount of data that is collected and processed, and there have been concerns regarding how consumer information is being collected, stored, shared, and used. The personalisation-privacy paradox is typically the situation in which the individual needs to consider the value of the custom made solutions and the compromise of their personal knowledge.

DOI: 10.48175/IJARSCT-36208

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

As AI has become more integral to decision-making processes, trust has emerged as a key factor impacting consumer engagement and acceptance of digital platforms. Personalised recommendations are helpful and relevant to the consumer, but if data is misused, if consumers are under surveillance, or if they cannot understand how the algorithm works, they may be reluctant to engage with such services. It is thus crucial to understand how consumers view the trade-off between personalisation and privacy risks to build responsible and sustainable AI personalisation platforms.
This is particularly relevant for digital travel spaces, where decisions about how to travel can involve substantial monetary, personal and private data and preferences. Hence, the institute of the association among AI-based personalisation, privacy concerns, trust, and booking intention in this domain can provide insights about consumers' Behaviours in the technology mediated environment.

1.2 Key Contributions of This Study

This study makes a key contribution to the growing literature on the role of artificial intelligence, digital consumer Behaviour, and platform trust.

- First, it builds on Privacy Calculus Theory, which focuses on consumer privacy concerns regarding data collection and privacy invasion in relation to the perceived benefit of personalised services provided by digital travel platforms using AI.
- Second, the study offers an empirical test of a Behavioural model that combines AI-based personalisation, privacy issues, trust, and booking intention. The framework offers a holistic view of the factors that impact consumer decision-making in the context of AI-powered digital environments.
- Third, the study highlights the significance of trust as a key mediator between personalisation and privacy issues and consumer Behaviour. The study highlights the significance of trust as a mediator in the acceptance of AI-powered services, advancing the understanding of consumer acceptance of AI-powered services.
- Fourth, the paper provides specific recommendations to platform managers, technology designers, and policy decision-makers, including an emphasis on the value of personalisation while recognising the importance of transparency, responsibility and respect for privacy and data governance to ensure consumer welfare is viewed as the first priority.
- Lastly, the study adds to the present day literature on responsible AI and presents empirical data on the impact of privacy-related concerns on the adoption of AI-supported platforms and their impact on Behavioural intention in digital service ecosystems.

1.3 Research Objectives

Advancements in artificial intelligence on digital platforms have given rise to new possibilities in providing consumer experiences. Meanwhile, the issue of data privacy and information security has been increasing consumers' doubts about consumer trust and technology acceptance. To achieve sustainable development of digital service ecosystems, understanding consumer assessments of the benefits and risks of AI-driven personalisation is essential.
This study is designed to investigate the characteristics of the relationships between AI-driven personalisation, privacy concerns, trust, and booking intention in a digital travel services platform. In particular, the study aims for the following objectives:

1. To analyse the impact of AI personalisation on consumer trust with digital travel platforms.
2. To examine the effects of privacy issues on consumer trust and customer booking intention.
3. To investigate the effect of consumer trust on booking intention for the use of AI in digital environments.
4. To assess the mediation effect between AI-based personalisation and booking intention.
5. To deliver managerial perspectives on how to optimize the effectiveness of personalisation and protect consumer privacy or ensure responsible use of AI.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

II. LITERATURE REVIEW AND RESEARCH GAPS

2.1 Artificial Intelligence and the Evolution of Digital Platforms

Artificial Intelligence (AI) is an enabling technology in the digital economy that is shaping the way organisations engage with consumers, provide services, and add value. Two things have made this possible: the ever-increasing collection of consumer data and the improvements in machine learning, predictive analytics, natural language processing, and recommendation systems that make processing that data in real-time to create personalised experiences possible. AI has been integrated into various sectors, including retail, banking, healthcare, entertainment, and travel, where it helps to boost customer engagement and assist decision-making.

The development of digital platforms is now emerging from merely being providers of information to a system that can learn from user actions and adjust service offerings accordingly. AI algorithms are used in modern platforms for predicting consumer preferences and automating interactions with customers, optimizing search results, and offering product or service suggestions as per individual preferences. Personalisation through AI has become an important factor in gaining a competitive edge, as organisations focus more and more on delivering superior customer experiences.

The travel industry has undergone just such a transformation. AI technologies are used in online travel agencies and airline booking platforms to provide personalised recommendations and facilitate consumers' travel experiences. AI's introduction into digitally hosted platforms has introduced new possibilities to take advantage of for increasing the significance, efficiency, and satisfaction of a service. But along with its increasing predominance in consumer data has come increasing worry over privacy, transparency, and the ethical use of consumers' data.

2.2 Personalisation and Consumer Experience using AI Power

Personalisation is the method by which products, services, information, or recommendations are tailored to suit individual consumer tastes or actions. AI has transformed the potential for customer personalisation by helping to program platforms to process vast amounts of structured and unstructured information and create deeply personalised journey experiences.

AI Personalisation generates value by decreasing the overload of information and enhancing the quality of choices. Recommendation systems can be used to suggest to the customer products and services that are relevant to their past purchases, visiting habits, and contextual elements. As revealed by the research, brands that are aware of what customers want and feel like are much more convenient, relevant, and useful to them compared to brands that are not.

There has been prior research that shows a positive effect of personalisation on customer satisfaction, perceived value, and Behavioural intentions. By offering tailored suggestions, AI can deliver more relevant options to consumers and streamline their decision-making process, enhancing the overall efficiency of platform interactions. AI-driven recommendation engines can recommend travel packages, housing, transportation channels, and travel destinations suited to the tastes of each traveller in digital travel environments.

Nevertheless, there are disadvantages too for personalisation: it requires consumer data to be gathered and processed. As personalisation grows, potential consumers might take more note of the amount of monitoring and use of personal data involved. This forms a tension between the advantages of personalisation and those of privacy, and thus constitutes the essence of the personalisation-privacy paradox.

2.3 AI and Privacy Issues in AI-Enhanced Environments

One of the greatest concerns surrounding the use of AI is privacy. AI systems use the collection of vast data to make insights and provide personalised services. They disclose a wide range of data for consumers, such as demographics, preferences, location, purchase history, browsing habits, and online interactions. Such information can facilitate the enhancement of platform services, but can also create issues with surveillance, misuse, unauthorised access, and loss of control over one's personal information.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

Privacy concerns are a fear of an individual that the information they share or provide to certain organisations is collected, stored, shared, and used by them. When customers enter the digital world, one of the first things they take into consideration is whether what they can gain from supplying data is well worth the risks. Having a high level of privacy can also make an individual less inclined to get involved with digital devices, adjust to new technologies, or give data.

A number of studies have found that privacy concerns have a detrimental effect on consumer trust, technology acceptance, and purchase intentions. It may cause uncertainty and a lack of trust in digital platforms when there is a perceived lack of transparency in the collection and usage of data. With AI systems growing more autonomous and data-driven, privacy is key to maintaining consumer engagement and the success of the platform over time.

2.4 Trust in AI-driven digital platform(s)

Consumers' trust is well known and regarded as an important factor in the consumers' decision-making process in the digital world. It is a measure of how willing people are to take a risk on something based on their perceptions of the possible benefits that something could bring. When it comes to consumers who are asked to enter sensitive data or engage in monetary transactions online, trust will enter the equation.

Trust in AI environments is not just trust in the organisation; it's also trust in that algorithmic system and automated decision-making process. Consumers must find the way in which AI systems work fairly, accurately, and responsibly. Perceptions of competence, reliability, transparency, and security play a major role in the formation of trust.

Studies have consistently revealed that trust does have a positive impact on consumer attitudes, platform engagement, and intentions to purchase. Given consumer trust in these digital platforms, they are more inclined to share their personal information, embrace recommendations, and make transactions. On the other hand, if players have negative perceptions about the trustworthiness of these platforms, it can lead to decreased engagement and adoption of AI-driven services.

Trust is especially crucial in the world of digital travel platforms, where travel-based decisions typically convey financial and uncertain commitments. Consumers must take flights, accommodation, and travel services as recommended by the platforms. Thus, trust is likely to play a significant role in connecting the relationship between personalisation and privacy perceptions and booking Behaviour.

2.5 Privacy Calculus Theory

Alongside this, Privacy Calculus Theory offers a valuable lens to better comprehend decisions that consumers make in a data-driven environment. It is theorised that people consider the possible rewards and downsides of sharing themselves before they respond to electronic sites.

Based on the theory, in a cognitive assessment, the consumer decides to buy a product when benefits cited, such as convenience, personalisation, and increased service quality, outweigh potential costs, such as privacy risks and loss of information control. Where there are more benefits than risks, people are willing to share information and engage with digital services. On the other hand, if the benefits are not seen as outweighing the privacy risks, consumers may be less willing to engage in the process and be hesitant to share information.

Privacy Calculus Theory has found extensive application in the research world, such as e-commerce and social media applications, mobile apps, and digital services. Few studies have focused on the theory; however, in an AI-supported digital space with greater possibilities of personalisation and with more complex data-collection methods. This research builds upon Privacy Calculus Theory by analysing the assessment process of consumers for personalisation benefits and privacy concerns.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

2.6 The Personalisation-Privacy Paradox

The personalisation-privacy paradox is the seeming contradiction in which consumers express concerns about privacy, and "want" capabilities of personalised services. This is particularly relevant in modern AI-driven technologies where the need for personalisation is complex and requires ongoing collection and analysis of data.

Personalisation is often highly appreciated by consumers, and it offers better convenience, efficiency, and relevance. Meanwhile, they may feel uneasy with the amount of personal information needed to facilitate such services. The clash between these two can be problematic when organisations are trying to achieve maximum personalisation yet uphold consumer trust.

This paradox can perhaps be addressed by trust, which can diminish the perceived uncertainty and augment confidence in the practices of platforms. The fact that the consumer is reassured about how data is used by the platform could influence their willingness to embrace/prioritize personalisation despite privacy concerns. To create responsible and sustainable platforms based on AI, it's crucial, then, to understand how that paradox works.

2.7 Research Gap

The existing literature review showed a number of key gaps.

First, although the nexus between personalisation and privacy in the online and offline world has received substantial attention, only a few studies have explored these notions with respect to AI-driven platforms with highly data-driven and advanced personalisation functionality.

Second, many studies deal separately with the advantages and disadvantages of personalisation and privacy. The need for integrated models to collectively assess the impact of personalisation, privacy issues, trust, and Behavioural intention still exists.

Third, though trust is recognised as one of the essential factors in adoption, there is a lack of empirical research on the mediating effect of trust in the association of AI-based personalisation and consumers' booking Behaviour.

Fourth, the swift advancement of generative AI, intelligent suggestion and recommendation platforms, and automated decision-making has resulted in evolving consumer concerns around transparency, algorithmic accountability, and responsible management of data. There is a lack of attention to date in the literature regarding the impact of these changes on consumer trust and their resulting Behaviour.

Hence, the current study attempts to construct and then validate a framework that delves into the relationship between AI applications for personalizing the solution, privacy concerns, trust, and the booking intention among digital travel solutions. The results add to the body of knowledge surrounding the utilisation of AI in understanding and predicting consumer Behaviour and offer actionable insights for businesses aiming to integrate personalisation without compromising consumer privacy or the ethical use of AI.

III. CONCEPTUAL FRAMEWORK AND HYPOTHESES

This study is based on Privacy Calculus Theory, which proposes that consumers will analyse the advantages and disadvantages of providing personal data to digital services prior to interaction. For AI-powered digital platforms, privacy troubles pose a potential hazard, and personalisation is a major plus. Consumer trust is suggested to be a main mediator between these factors and the consumer's booking intention and overall engagement with the platform.

Conceptual framework focuses on the correlation between AI based personalisation and privacy, consumer trust in AI based personalisation and booking intention. The key antecedents highlighted with respect to consumer trust and behavioural intentions are AI-based personalisation and privacy concerns. The level of consumer trust can be seen as one of the intermediate variables between the variables of personalisation and booking intention.

The conceptual model of the study is shown in Figure 1.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

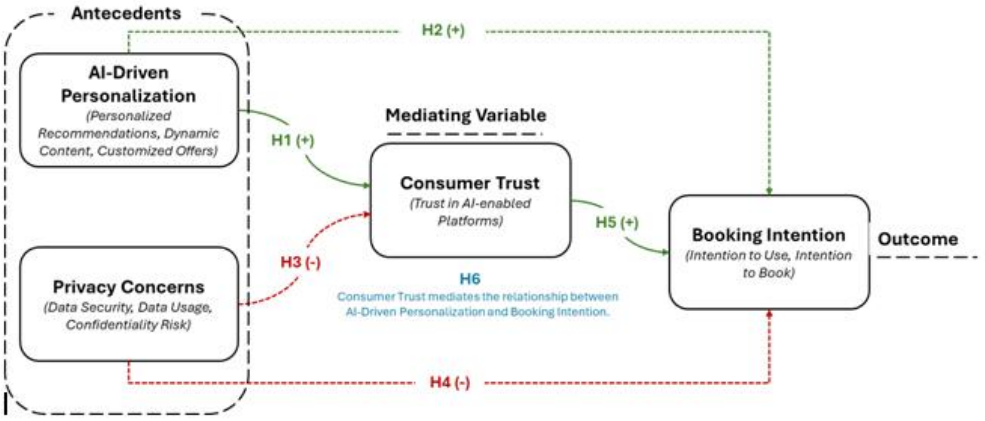

Figure 1. Conceptual Framework of AI-Driven Personalisation, Privacy Concerns, Consumer Trust, and Booking Intention

3.1 Consumer Trust and AI-Driven Personalisation

By analysing consumer preferences, viewing habits and purchase history, AI can provide extremely tailored suggestions via digital platforms. Personalised services add value in the perceptions of relevance, convenience and service quality improving the entire user experience. Past studies showed that consumers tend to believe platforms that can offer on-point and beneficial suggestions favouring their requirements as well as expectations. Personalisation can be of vital advantage and consumers take in websites as more qualified and reliable when it adds value.

H1: Personalisation using AI has a positive and significant impact on consumer trust.

3.2 Personalisation and Booking Intention, Achieved Via AI

Personalisation via AI can directly impact consumer decision-making, showcase relevant options and decreasing info overload. Recommending personalised products makes the evaluation much easier and improves the chances of purchasing recommended products/services. For digital travel platforms, personalised offers and suggestions can help instil confidence in the booking process and promote transactions. Hence, it can be expected that consumers experiencing more personalisation are likely to have higher booking intensions.

H2: AI-driven personalisation has a positive and significant effect on booking intention.

3.3 Privacy Concerns and Consumer Trust

A privacy issue is the consumer's sense of risk about the collection, storage and use of their personally identifiable information. In digital spaces, privacy is an important topic as AI systems rely mainly on consumer data to deliver customised recommendations. If consumers think that their information might be misused or not protected well, their trust in the platform may be lost. This will consequently undermine confidence in digital platforms that are automated with AI.

H3: Negative and significant relationship exists between privacy concerns and consumer trust.

3.4 Privacy Concerns and Booking Intention

Consumer behavioural intentions might also be directly affected by privacy concerns. High perceived privacy risk can result in a reluctance to give data, engage with platform suggestions or complete transactions. The perception of broad data security, surveillance, and unauthorised use of information may diminish the appetite for using digital services. Thus, privacy issues are anticipated to have a negative influence on booking intention.

H4: Consumer privacy issues negatively and significantly influence booking intent.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

3.5 Consumer Trust and Booking Intention

Trust is one of the well-known factors that affect the consumers Behaviour in digital environment. Trust diminishes perception of uncertainty and boosts confidence in platform recommendations, service quality and security of transactions. Those who have faith in the AI-powered websites are much more willing to stick to the suggestions and take further action to book the results. For this reason, it is hypothesised that trust will positively affect booking intention.

H5: Consumer trust positively and significantly influences the booking intention.

3.6 Mediating Role of Consumer Trust

In some cases, use of AI-powered personalisation might not directly lead to booking Behaviour. Personalisation, rather, could make a first impact on consumer trust, with that subsequently leading to booking intention. When users feel like they are receiving recommendations uniquely tailored to their needs and view them as valuable and credible, their trust in the platform increases, leading to higher conversion rates. Hence, it is presumed that trust will play a mediating role between AI-driven personalisation and booking intention.

H6: Trust in a consumer is a mediator between the relationship of AI-driven personalisation and the booking intention.

3.7 Theoretical Foundation

This study builds on Privacy Calculus Theory, which others use to explain why individuals consider making disclosures in electronic environments to be beneficial or risky. The theory suggests that consumers undertake a rational assessment cycle: evaluating the benefits of using a system (convenience, personalisation and enhanced service quality) against some of the perceived risks (privacy loss, data misuse and information security risk).

Personalisation is a significant value to the consumer that is achieved via advanced analytics, machine learning algorithms and recommendation systems on AI-powered digital platforms. On the other hand, privacy issues pose potential risks to users when extensive data collection and processing are needed for AI-powered services. Consumer decision-making is guided by the perceived balance between such benefits and risks, which in turn affects consumer trust and the next action step.

The study also introduces trust as a key psychological mediator between AI personalisation and the sense of privacy loss and booking intention. In the realm of digital transactions, trust diminishes uncertainty and boosts consumer trust in platform recommendations and service delivery. Therefore, Privacy Calculus Theory offers a relevant theoretical framework for exploring and analysing consumer personalisation and consumer privacy trade-offs when dealing with digital platforms that use AI.

IV. RESEARCH METHODOLOGY

4.1 Research Philosophy

The research philosophy in this study is positivism that is an approach which believes that consumer Behaviour could be objectively measured and analysed by observations of facts and by using statistical analysis. Since the study aims to study the causal linkages between the constructs of AI, personalisation, privacy concerns, consumer trust and booking intention quantitatively, the positivist approach would be appropriate. The emphasis of the philosophy is on the objective, measurements, hypothesis testing and generalisation of findings.

Structural Equation Modelling (SEM) was employed to analyse the conceptual model, and it allows analysing the relationships between the latent constructs simultaneously. SEM enables the researcher to evaluate the measurement model as well as the structural associations in the theoretical framework.

4.2 Research Approach

In this study, deductive research method has been applied. Conceptual framework and hypotheses were based on literature search and existing theory, including Privacy Calculus Theory and consumer Behaviour that is based on trust. The hypotheses were thereafter tested by empirical tests on digital travel platforms users.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

4.3 Research Design

To explore consumer perceptions and intentions to use AI in digital travel platforms, a quantitative research design with cross-sectional approach was used. Primary data was gathered from respondents who have some experience of using online travel systems/agencies, airline booking sites, travel aggregators and/or mobile travel systems offering customised suggestions, and a structured questionnaire was used for this purpose.

A cross-sectional design was deemed as suitable as it allowed data to be collected from a large group in a relatively short time, and to explore the relationships between the study variables.

4.4 Target Population

Target population were people who had used digital travel platforms for travel-related activities such as travel search, planning and/or booking. This included users of online travel agencies, airline websites, hotel booking applications and travel applications that had features such as personalisation and AI-driven options.

The study participants were adult consumers who were knowledgeable about digital travel services and able to assess personalisation qualities, privacy issues, sense of trust, and travel bookings intentions.

4.5 Sampling Technique

A purposive sampling technique which is a non-probability technique was used. The respondents were chosen because they had previously interacted with digital travel platforms and possessed a high level of understanding of online travel bookings. In this way, participants would have knowledge and experience relevant to the study field and provide an evaluation for the constructs investigated.

The questionnaire was given to the public via online sources such as social media platforms, professional networks, travel community groups, and digital communication groups.

4.6 Sample Size

384 valid responses were obtained and analysed. Sample size meets all the criteria for Structural Equation Modelling (SEM) and statistical power for the hypotheses to be tested.

The sample size was calculated using Cochran formula for large population and is in line with the suggestions in the behavioural and social sciences. The sample data was deemed to be adequate to result in reliable and generalizable data.

4.7 Instrument Development

A structured questionnaire with two sections was used to collect the data.

In Section A, demographic data like age, gender, level of education, occupation, and frequency of using digital travel platforms were found.

Multiple items scales adapted from the existing literature were used for measuring the study constructs in Section B. The questionnaire contained items with regard to:

- AI-Driven Personalisation
- Privacy Concerns
- Consumer Trust
- Booking Intention

Each measurement item was rated in 5-point Likert format from:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

4.8 Measurement of Constructs

AI-Driven Personalisation was assessed by the respondents' subjective impression of their level of relevance, usefulness, and customisation of offers they listed on the platform.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

Perceptions on data collection, data security, confidentiality and potential misuse of personal data were used to measure Privacy Concerns.

Consumer Trust was assessed based on the following factors: Platform reliability, Platform credibility, Platform dependability, and Confidence in AI-generated recommendations.

Booking Intention was assessed by respondents' booking intentions via platform recommendations and the likelihood they would finalize travel bookings via an AI-powered digital platform.

4.9 Data Collection Procedure

The primary data were gathered by using online survey technique which was designed for a specific period. It was an optional response, and all respondents were told of the educational nature of the study before filling in a questionnaire.

No personally identifiable information was gathered to preserve the ethical aspects of conducting the research. Candidates were made aware that all their answers would be kept confidential and only used in anonymous form in the study.

4.10 Assessment of Reliability and Validity

Before testing the hypotheses, reliability and validity of the measurement model were assessed.

Cronbach's Alpha and Composite Reliability (CR) were used to assess internal consistency reliability. Size dimensions that were above the recommendable threshold of 0.70 were acceptable.

To check the convergent validity factor loadings, and Average Variance Extracted (AVE) were used. Satisfactory convergent validity was indicated by extracting loadings <0.70 and AVE >0.50.

To achieve discriminant validity, the Fornell-Larcker criterion and cross-loading were examined in order to show that each construct was found to be empirically distinct from the others.

4.11 Data Analysis Techniques

Structural Equation Modelling (SEM) was used in data analysis. Data analysis was done in two phases.

Reliability and validity were determined by evaluating the measurement model in the first stage.

In the second stage, the structural model was assessed to validate the proposed relationship between the variables: AI-Driven Personalisation and Privacy Concerns, Consumer Trust and Booking Intention.

Respondent characteristics were summarised using descriptive statistics. The strength and significance of the proposed relationship was determined by their path coefficients, t-values and coefficient of determination (R2) values. To explore the indirect effect of Consumer Trust on the AI-Driven Personalisation – Booking Intention path, a mediation approach was employed.

4.12 Ethical Considerations

All research was conducted in an ethical manner. Informed consent was obtained and it was anonymous and voluntary to the respondents throughout the research process. No personal information was gathered which would be sensitive, and the data were only used for academic purposes.

V. RESULTS & ANALYSIS

5.1 Sample Profile

A total of 384 valid responses were included in the final analysis after removing incomplete questionnaires and inconsistent responses. The demographic profile of the respondents provides an overview of the characteristics of travellers who participated in the study.

The demographic characteristics of the respondents are presented in Table 1.

TABLE I :DEMOGRAPHIC PROFILE OF RESPONDENTS (N = 384)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	221	57.6
	Female	163	42.4

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

Age	18–25 Years	82	21.4
	26–35 Years	137	35.7
	36–45 Years	103	26.8
	45+ Years	62	16.1
Education	Undergraduate	118	30.7
	Graduate	176	45.8
	Postgraduate	90	23.5
Travel Platform Usage	Occasionally	102	26.6
	Monthly	169	44.0
	Frequently	113	29.4

The demographic distribution suggests that respondents were sufficiently experienced with digital travel platforms and capable of evaluating AI-driven personalisation features and privacy-related concerns.

5.2 Measurement Model Assessment

Reliability and validity assessments were conducted before evaluating the structural model.

TABLE II: RELIABILITY AND CONVERGENT VALIDITY ASSESSMENT

Construct	Cronbach's Alpha	Composite Reliability	AVE
AI-Driven Personalisation	0.891	0.918	0.737
Privacy Concerns	0.876	0.907	0.710
Consumer Trust	0.903	0.927	0.760
Booking Intention	0.887	0.916	

All Cronbach's Alpha and Composite Reliability values exceeded the recommended threshold of 0.70, indicating strong internal consistency. Similarly, AVE values were above 0.50, confirming satisfactory convergent validity.

5.3 Discriminant Validity Assessment

Table 3 provides results for discriminant validity assessment.

TABLE III: FORNELL-LARCKER CRITERION

Construct	AIDP	PC	CT	BI
AI-Driven Personalisation (AIDP)	0.858			
Privacy Concerns (PC)	-0.361	0.843		
Consumer Trust (CT)	0.654	-0.518	0.872	

DOI: 10.48175/IJARSCT-36208

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

Booking Intention (BI)	0.621	-0.442	0.709	0.855

The square roots of AVE were greater than the inter-construct correlations, indicating adequate discriminant validity.

5.4 Structural Model Evaluation

After establishing reliability and validity, the structural model was assessed to test the proposed hypotheses.

TABLE IV: RESULTS OF HYPOTHESIS TESTING

Hypothesis	Path	β	t-value	p-value	Result
H1	AI-Driven Personalisation → Consumer Trust	0.612	12.487	<0.001	Supported
H2	AI-Driven Personalisation → Booking Intention	0.248	4.831	<0.001	Supported
H3	Privacy Concerns → Consumer Trust	-0.389	8.214	<0.001	Supported
H4	Privacy Concerns → Booking Intention	-0.183	3.762	<0.001	Supported
H5	Consumer Trust → Booking Intention	0.473	9.126	<0.001	Supported

The results indicate that AI-driven personalisation positively influences both consumer trust and booking intention. Privacy concerns negatively affect consumer trust and booking intention. Consumer trust emerged as a strong predictor of booking intention.

5.5 Explained Variance (R^2)

The structural model was evaluated in terms of explanatory power with the values of the coefficients of determination (R^2).

TABLE V: COEFFICIENT OF DETERMINATION (R^2)

Construct	R^2
Consumer Trust	0.57
Booking Intention	0.64

The model explains 57% of the variance in Consumer Trust and 64% of the variance in Booking Intention, indicating substantial explanatory power.

5.6 Mediation Analysis

The mediating effect of Consumer Trust was examined using bootstrapping procedures.

TABLE VI: COEFFICIENT OF DETERMINATION (R^2)

Hypothesis	Indirect Path	β	t-value	p-value	Result
H6	AI-Driven Personalisation → Consumer Trust → Booking Intention	0.289	7.538	<0.001	Supported

The indirect effect was statistically significant, confirming the mediating role of Consumer Trust. Since both the direct effect (H2) and indirect effect (H6) were significant, the findings indicate partial mediation.

H6: Consumer Trust mediates the relationship between AI-Driven Personalisation and Booking Intention is supported.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

5.7 Discussion of Findings

The findings are fairly supportive of the proposed conceptual framework and Privacy Calculus Theory. AI-powered personalisation had a profound impact on improving consumer trust and booking intention, indicating the importance consumers place on personalised recommendations and experiences through AI-enabled platforms. The findings suggest that personalisation enhances the sense of value by making things more relevant, convenient, and quick to decide.

The negative impact of privacy concerns with respect to consumer trust and booking intention was identified. This finding highlights the importance of data security, transparency, and responsible information management in digital environments. The public is wary of the use of their data by AI systems, particularly regarding how it is gathered, stored, and used.

Consumer trust was found to be the highest of all the variables to predict a booking intention. This outcome fortifies the significance of trust to dampen the uncertainty of the scene and to inspire platform participation. Customer sentiment toward AI-driven platforms is increased when they trust the platform to make recommendations; as a result, this improves their likelihood of booking.

The mediation analysis results also revealed a partial mediation effect between AI based personalisation and booking intention through the mediation of trust. Personalisation directly motivates consumers to book, but becomes significantly more effective when consumer trust in the platform is high. These findings underscore the need to balance the benefits of personalisation with privacy protection for sustainable engagement of the consumers in the AI-driven digital ecosystems.

VI. THEORETICAL AND MANAGERIAL IMPLICATIONS

6.1 Theoretical Implications

This study therefore adds to the existing literature on artificial intelligence, digital consumer behaviour and trust in platform, but is novel in that it examines the interplay between AI-driven personalisation, privacy concerns, consumer trust and booking intention. Understanding these behavioural mechanisms influencing consumers' acceptance in the context of AI technologies is thus an important research topic, as these technologies have become increasingly integrated within digital platforms.

First, it expands upon Privacy Calculus Theory and applies it to the context of AI-powered digital platforms. Previous studies not only have already studied privacy aspects of decision making in traditional e-commerce and online service contexts but, as has been shown in this study, privacy theory holds strong relevance in AI-driven ecosystems in which personalisation functions strongly depend on the collection of vast amounts of data and the processing using algorithms. The results lend to the idea of consumers constantly weighing the advantages of personalisation against the perceived dangers of having their information leaked when using a digital platform.

Second, the study adds to the literature on AI personalisation by offering empirical data that personalised advice has a positive impact on consumer trust and booking intention. The findings indicate that the personalisation is not only a technological aspect but a crucial factor on consumer perceptions and Behavioural consequences.

Thirdly, the study contributes to the field of trust in AI-enabled environment by strengthening the understanding. Results show that trust has a direct and indirect effect on the consumer behaviour. This underlines the critical need for trust to connect technological possibilities to consumer acceptance especially in environment of non-symmetrical information and risk.

Fourth, the study adds to the growing conversation regarding responsible AI by showing that privacy remains a major negative factor to trusting AI and driving booking intention. The results highlight the fact that technology innovation alone is not enough to obtain consumers' approval, as privacy protection and the management of data information must be effective as well.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

Overall, a fairly comprehensive framework is offered combining AI-based personalisation, privacy concerns, consumer trust and behavioural intention within a unified model. This model can serve as a valuable starting point for future studies exploring how consumers react to AI-powered services in various digital sectors.

6.2 Managerial Implications

The results have implications for various participants in digital work, such as managers, platform operators, technology developers, and policy makers, who try to design for greater consumer engagement in digital environments with AI.

First, it's important for organisations to be aware of the high value of personalisation for consumers, as well as its ability to drive trust and booking intent. Continued investment in AI-powered recommendation systems that feature even better relevance, convenience, and decision support in digital platforms. When used properly, personalised experiences can help build relationships with consumers and enhance performance on a platform.

Secondly, the outcome brings to the fore the need for privacy protection as a strategic business priority not just a regulatory requirement. People are aware, and sensitive about the methods used to collect, store and use their personal information. It is therefore good practice to have organisations take the approach of clear and open data governance and explain privacy regulations in an easy-to-understand way. Internet consumers control over their personal data could alleviate their privacy concerns, and advance their trust.

Thirdly, trust needs to be understood not just as a social glue that holds together AI systems, but as a value that can serve as a strategic asset within AI-powered digital ecosystems. The results do confirm that there is a significant impact of introduced trust on the booking intention, and that it enhances the effectiveness of personalisation efforts. To ensure lasting consumer confidence, organisations should ensure reliability, security, transparency and ethical use of data. Improved cybersecurity, data protection and responsible governance of AI can add to more robust trust relationships.

Fourthly, AI system developers need to be attentive in enhancing the transparency and explainability of systems that offer recommendations. As consumers get less accustomed to being recommended products, their trust in the AI system that makes the recommendations increases when they understand how recommendations are developed and how their information is being used. Explainable AI practices could thus improve user acceptance and help curb algorithmic uncertainty.

Fifth, managers practicing digitisation of travel platforms need to consider personalisation goals and privacy issues in creating user experiences. An over-personalised experience can lead people to think that they are being monitored or that their personal information is being accessed, even if this is actually not the case, which will reduce consumer trust. A combination of personalisation effectiveness and privacy protection is likely to yield a more sustainable result.

Lastly, the regulatory and policymakers should foster the growth of responsible Artificial Intelligence policies, systems, and procedures that promote transparency, accountability, and consumer protection. However, with further development of AI technologies, governance frameworks will need to be defined in order to foster public trust and help create sustainable digital service ecosystems.

“While the tech is amazing, the long-term success of AI-powered digital platforms hinges on the capacity to foster trustworthy, transparent and privacy-savings consumer experiences,” the findings suggest.

VII. LIMITATIONS OF THE STUDY AND FUTURE RESEARCH DIRECTIONS

7.1 Limitations

The findings presented here offer a basis for studying personalisation in AI, privacy issues, consumers' trust and booking intention, with some limitations recognised.

Firstly, the study used a cross-sectional research design, which means it was focused on consumer perceptions at a particular time. As the usage of AI technologies becomes more common and the regulatory framework evolves, consumer attitudes towards AI and privacy could change. Therefore, the results reflect a "snapshot" of consumers' perceptions and not long-term Behavioural changes.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

Secondly, the study was based on self-reported information from a survey. This is a standard method that was employed in consumer Behaviour research, but that does not necessarily mean that what respondents perceive and intend may be according to their actual Behaviour in real life. There may be some response and social desirability bias that cannot be ruled out.

Thirdly, the research was based on the application context digital travel platforms. Findings while useful when understanding the consumer behaviour through AI technology, are likely not widely applicable across other digital industries like healthcare or banking, retail or social media platforms or education.

Fourth, the study focused on booking intention and not booking Behaviour. While Behaviour intention is a good predictor of actual Behaviour, other situational factors, such as price, urgency, availability, economy, and competition also may affect purchase decisions.

Lastly, the constructs under consideration were the four major constructs associated with the model: AI-driven personalisation, privacy concerns, consumer trust, and booking intention. Additionally, other factors that might have relevance for the case at hand, including perceived usefulness, perceived value, algorithmic transparency, AI literacy, technology readiness and consumer innovativeness, were not considered.

The findings of the study could help to understand Behaviour mechanisms that affect consumer engagement with AI-assisted digital surfaces and could pave the way for further research in this area.

7.2 Future Research Directions

The continuous evolution of artificial intelligence brings many future research opportunities. The proposed model can be extended if the researchers want to analyse more factors about the attitude of consumers towards the acceptance of AI usage and their trust in digital contexts.

One aspect for further research is the influence of algorithmic transparency and explainable AI on consumer perceptions. If the AI is more complex, it might be that consumers will want to have deeper understanding of how recommendations are made and the processing of personal information. Future studies of the role transparency plays in trust and behavioural intentions are warranted.

Second, scientists have the opportunity to delve into the impact of responsible AI practices, such as fairness, accountability, and ethical decision-making. Understanding consumer expectations of AI fairness can have a profound impact on consumer trust and use of AI-powered services, especially when AI-based decision-making relates to transactional results.

Thirdly, future research can address how AI literacy and technology readiness influences consumer reactions to personalisation and privacy implications. More technologically experienced and confident people may perceive privacy threats in a different way than people who are less technologically experienced and/or confident.

Fourth, comparing studies between industries could give insights on wide range of AI consumer studies. Comparing personalisation-privacy trade-offs across different industries, like healthcare, banking, retail and education, might uncover some distinctive industry patterns and enhance the ability to extend the existing theories to broader contexts.

Fifth, future research can potentially include real behavioural measures in addition to self-reported behaviours. A combination of transactional data, platform analytics, and consumer-Behaviour tracking data could offer a more nuanced view into consumer decision-making for an AI enabled platform.

Finally, the longitudinal studies can provide insights into the changes in consumer perceptions over time as AI technologies are adopted, and regulations are further refined. This type of research may provide insights into trust-building and privacy management in the long-term. New technologies such as generative AI, conversational AI personnel, autonomous recommendation systems and predictive decision-support tools provide innovative research opportunities. The more intelligent technologies employed in digital services, the more an organisation will be lending them and the more important it will become to investigate consumer responses.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 1, June 2026
Impact Factor: 8.2

VIII. CONCLUSION

In the age of the internet, AI has revolutionised digital platforms, such as personalizing the consumer experience and streamlining the delivery of services. Yet, growing concern over privacy, transparency and consumer trust over use of personal data for developing AI-powered personalisation. Balancing the benefits of personalisation with the perceived risks of privacy has thus become crucial for any organisation that operates in digital domains.

It was an exploratory study with the Privacy Calculus Theory (PCT) being used as a lens to examine relationships between AI personalisation, privacy concerns, trust and booking intentions in digital travel platforms. The results showed that AI personalisation has a positive impact on consumer trust and booking intentions, underscoring the importance of providing personalised and relevant experiences. Meanwhile, privacy issues created a negative impact on trust and the booking intention, thus confirming the consumers' fear of collecting and processing their personal information.

The findings also revealed that consumer trust acts as a key moderator between an individual's level of personalisation and intention to book and serves as an intermediate variable between the two. Such data means that successful AI personalisation is not just a matter of technological sophistication but also consumer trust, which must be built and continually honoured.

Theoretically, the study furthers Privacy Calculus Theory into the realm of AI-driven digital settings and adds to the literature in the fields of Artificial Intelligence, Digital Consumer Behaviour and Digital Platform Trust. The results suggest that a manager's point of view should be aimed at demonstrating the balance of effectiveness in personalisation, the safeguarding of privacy, as well as transparency and responsible data governance.

Over time, businesses will be more likely to use intelligent systems to provide tailored experiences for their consumers, as AI will continue to evolve over the years. From there, the success of these initiatives will rely on the capacity of organisations to create digital ecosystems that are both trustworthy and transparent, and act in an ethically responsible way, which serves the consumer interest while offering value. In conclusion, as AI continues to revolutionize the landscape of social media and online communication, so do the characteristics of the platforms evolve into more customer-friendly formats.

ACKNOWLEDGEMENTS

The author expresses sincere gratitude to all individuals and organisations that contributed to the successful completion of this research study.

The author would like to give special thanks to his academic mentors, faculty members, staff and research scholars for their guidance, constructive suggestions and encouragement which helped in the direction and quality of the work. Their input and expertise were invaluable throughout the research process.

The author also expresses gratitude to all the respondents who took part in the survey and provided their experience and views. The "empirical analysis" of this study was based on their contributions.

Special thanks is also given to the developers, researchers, and academic institutions for the published works and scholarly contribution which enhanced the theoretical background and literature of the study.

Last but not the least, the author wishes to extend gratitude to family, friends and professional colleagues who contributed their motivation and understanding to successfully completing this research.

Errors and omissions, if any, are at the sole discretion of the author.

REFERENCES

[1]. Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K., &Wetzels, M. (2015). Unraveling the personalisation paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. Journal of Retailing, 91(1), 34-49.

[2]. Buhalis, D., Harwood, T., Bogicevic, V., Viglia, G., Beldona, S., & Hofacker, C. (2019). Technological disruptions in services: Lessons from tourism and hospitality. Journal of Service Management, 30(4), 484-506.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

[3]. Buhalis, D., Leung, R., & Law, R. (2023). Artificial intelligence in tourism: State of the art and future research directions. Tourism Management Perspectives, 45, 100996.

[4]. Chatterjee, S., Rana, N. P., Dwivedi, Y. K., &Baabdullah, A. M. (2021). Understanding AI adoption in service organisations. International Journal of Information Management, 60, 102384.

[5]. Dinev, T., & Hart, P. (2006). An extended privacy calculus model for e-commerce transactions. Information Systems Research, 17(1), 61-80.

[6]. Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., et al. (2023). So what if ChatGPT wrote it? Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI. International Journal of Information Management, 71, 102642.

[7]. Feuerriegel, S., Hartmann, J., Janiesch, C., &Zschech, P. (2024). Generative AI. Business & Information Systems Engineering, 66(1), 111-126.

[8]. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). Multivariate Data Analysis (8th ed.). Cengage Learning.

[9]. Hu, Y., & Min, H. K. (2025). Information transparency, privacy concerns, and customers' Behavioural intentions regarding AI-powered hospitality robots. Journal of Hospitality and Tourism Management, 62, 102-112.

[10]. Huang, M. H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 49(1), 30-50.

[11]. Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. Information Systems Research, 20(2), 237-257.

[12]. Kim, J., Giroux, M., & Lee, J. (2023). When do AI recommendations enhance consumer decision making? Tourism Management, 95, 104676.

[13]. Koo, I., Zaman, U., Ha, H., & Nawaz, S. (2025). Assessing the interplay of trust dynamics, personalisation, ethical AI practices, and tourist Behaviour in the adoption of AI-driven smart tourism technologies. Journal of Open Innovation: Technology, Market, and Complexity, 11(1).

[14]. Lim, S. G. E., Kim, J., Kim, Y., & Kim, J. (2025). AI-powered personalised recommendations and pricing: Moderating effects of ethical AI and consumer empowerment. Tourism Management, 101.

[15]. Loureiro, S. M. C., Guerreiro, J., Ali, F., & Mendes, J. (2025). Tourists and artificial intelligence–LLM interaction: Examining motivations and Behavioural responses. Current Issues in Tourism, 28(2).

[16]. Lv, L., Wang, Y., Li, X., & Huang, S. (2025). Alleviating travellers' privacy concerns in personalised travel recommendations. Journal of Travel Research.

[17]. Martin, K. D., & Murphy, P. E. (2017). The role of data privacy in marketing. Journal of the Academy of Marketing Science, 45(2), 135-155.

[18]. Morosan, C., & Bowen, J. T. (2022). Artificial intelligence in hospitality and tourism: A review of emerging applications. International Journal of Contemporary Hospitality Management, 34(1).

[19]. Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. International Journal of Electronic Commerce, 7(3), 101-134.

[20]. Rane, N. L., Choudhary, S. P., & Rane, J. (2024). Responsible artificial intelligence: Principles, challenges, and business implications. Journal of Artificial Intelligence Research and Applications, 12(1), 15-34.

[21]. Shin, D. (2024). The effects of explainability and causability on trust in AI systems. Computers in Human Behaviour, 151, 107987.

[22]. Sigala, M. (2023). Artificial intelligence in tourism: From automation to augmentation. Tourism Management Perspectives, 47.

[23]. Sigala, M. (2024). Artificial intelligence and the transformation of tourism ecosystems. Journal of Tourism Futures.

[24]. Topsakal, Y., Yilmaz, G., & Ekinci, Y. (2025). How familiarity, ease of use, usefulness, and trust affect generative AI-assisted travel planning. International Journal of Human-Computer Interaction.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 1, June 2026 Impact Factor: 8.2

[25]. Tussyadiah, I. P. (2020). A review of research into automation in tourism: Launching the Annals of Tourism Research curated collection on artificial intelligence and robotics in tourism. Annals of Tourism Research, 81.

[26]. Tussyadiah, I. P., & Miller, G. (2019). Perceived impacts of artificial intelligence and responses to positive Behaviour change intervention. Annals of Tourism Research, 77, 96-104.

[27]. Wirtz, J., Kunz, W. H., Hartley, M. A., &Tarbit, N. (2024). Corporate digital responsibility in the age of artificial intelligence. Journal of Service Management, 35(1), 1-20.

[28]. Xu, H., Teo, H. H., Tan, B. C. Y., & Agarwal, R. (2019). The role of push-pull technology in privacy calculus: The case of location-based services. Journal of Management Information Systems, 36(3), 757-789.

[29]. Zanker, M., Fuchs, M., &Höpken, W. (2024). Recommender systems in tourism: Past, present and future. Tourism Management Perspectives, 50.

[30]. Zhang, K., Xu, H., Zhao, S., & Yu, Y. (2023). Trust building in AI-enabled digital platforms. Information Systems Journal, 33(2).