# Revolutionizing Travel : The Impact of Generative AI on Personalization and Efficiency in the Tourism Industry

*Debarun Chakraborty* [1]

## Abstract

**Purpose : This study looked at the social, emotional, and functional values that influence users' intention to use travel and tourism apps (TTA) and their trust in them, among other factors that affect their usage, in order to investigate the impact of generative artificial intelligence (GAI) content on TTA. It also explained how, even without any desire to use an app themselves, those who are uninvolved or active may nevertheless be impacted by what other people think of it or whatever information they find on it.**

**Methodology : The study was conducted between December 2023 and May 2024, and the questionnaire was shared with more than 5,000 users. Ultimately, we received 440 replies from the various respondents.**

**Findings : These results demonstrated that when people viewed usage information about friend-recommended apps with positive comments, both social influence processes may be activated; however, only normative information may persuade people not to use those apps if their friends had given them bad reviews.**

**Implications : It also examined potential optimizations for AI integration in the tourism industry. Additionally, this work addressed ethical and demographic issues related to this technology; as a result, further research on the broader effects of AI technology on the industry is feasible.**

**Originality : This study has been built on how consumption values affected the intention to use GAI-based TTA in the Indian context.**

***Keywords :*** **travel and tourism apps, generative AI (GAI), trust, online risk perception, intention to use**

**Paper Submission Date : April 1, 2024 ; Paper sent back for Revision : June 15, 2024 ; Paper Acceptance Date : June 25, 2024 ; Paper Published Online : September 14, 2024**

Generative artificial intelligence (GAI) is an innovative technology that has transformed travel by improving customer satisfaction, enhancing operational efficiency, and promoting innovation (Dwivedi et al., 2024). In terms of state-of-the-art machine learning algorithms, GAI can create travel recommendations, design an itinerary, and provide real-time help tailored to individual needs and preferences (Mondal et al., 2023). For instance, chatbots or virtual assistants that AI powers are instant sources of support and information that improve customer service levels (Ooi et al., 2023). Furthermore, predictive analytics through GAI is used by companies for better forecasting of travel trends while managing pricing strategies as well as resource allocation improvement (Dogru et al., 2023). However, GAI systems like these generate useful promotional materials, such as personalized travel guides targeted at specific audiences (Amankwah-Amoah et al., 2024).

Moreover, this technology enhances virtual tours by making them more immersive using augmented reality so that tourists can have a preview of the place they want to visit before going there physically (Mogaji et al., 2024; Shankar, 2020). This is due to the fact that GAI has advanced quickly over time, meaning it has a great potential to

[1]*Associate Professor,* Indian Institute of Management Nagpur (IIM Nagpur), Nagpur - 441 108, Maharashtra.
(Email : debarun84@gmail.com) ; ORCID iD : https://orcid.org/0000-0002-0754-1120

**DOI : https://doi.org/10.17010/ijom/2024/v54/i9/174394**

affect travel and will soon force the tourist sector to experience significant change (Duong et al., 2024). Furthermore, in terms of providing travel services, it makes travel less stressful and much more enjoyable, allowing anyone to take a trip even in the absence of funds or access to pricey tour packages that are typically reserved for extremely wealthy foreign visitors (Wong et al., 2023). Comprehending the effects of GAI on the travel and tourism sector is essential since it has the potential to alter client experiences and boost operational efficiency (Dwivedi et al., 2024).

In order to optimize these processes, there is a need to understand how GAI can be applied to personalization and technology-driven travel (Duong et al., 2024). This solution allows companies to give individualized travel recommendations, use AI-based chatbots for better customer service and make virtual tours through which users participate in their trips (Christensen et al., 2024). Additionally, predictive analytics could be facilitated using AI relying on generative models wherein market trends are anticipated while resources are allocated and process flows improved (Li & Lee, 2024). This study provides insights into the advantages and obstacles of implementing GAI through an examination of its consequences. It provides direction to industry participants on how to use AI efficiently in order to maintain competitiveness and meet changing customer demands. It contributes significantly to ongoing discussions about technological advancements in tourism. This study paves the way for a smarter and simplified travel industry that caters to every customer's need.

The travel and tourist industry has benefited from several favorable advancements resulting from GAI; nonetheless, additional research is needed in several other areas. First of all, it is difficult to assess the true efficacy of GAI because there is no empirical data regarding its potential long-term effects on customer happiness and loyalty. Moreover, the majority of talks on AI-driven personalization do not fully explain how various demographic groups respond to customized offerings. The extensive usage of AI for data collecting and analysis has resulted in a significant knowledge gap about ethical issues and privacy concerns. Furthermore, there is still a lot of uncertainty around the integration of GAI into the current tourism infrastructure and the training of staff members to use it efficiently. Finally, it is promising that GAI has the potential to enhance operational efficiencies; however, research done on the cost-benefit analysis of implementing this technology, particularly among small business entrepreneurs within the tourism industry, is lacking. These gaps need to be addressed in order to have a fuller understanding of how GAI can be best used in the travel and tourism sector.

Consequently, two important Research Questions (RQs) were answered by the study:

- ***RQ1 :*** Can various consumption values and trust influence the intention to use GAI-based Travel and Tourism Apps (TTAs)?

- ***RQ2 :*** Can online risk perceptions moderate consumption values, trust, and intention to use GAI-based TTAs?

The study contributes significantly to the travel and tourism sector by examining how user experience, as well as operational efficiency are enhanced through GAI. This work explores AI-driven personalization, revealing places where GAI might personalize travel recommendations, including support services with regard to preference. Consequently, this leads to more satisfied customers who are engaged at higher levels, hence improving their relationships with the organizations involved. Moreover, it looks at the ethical implications regarding AI adoption as well as preservations relating to privacy, which provides guidelines for responsible usage of data. The study also looks at the infusion of GAI into the current tourism infrastructure and provides practical thoughts on how best to adapt and train workers in new technologies. However, this research elaborates further on the implementation of GAI for SMEs in terms of its advantages and obstacles. This is aimed at assisting players in the industry to maximize the benefits of the deployment of AI. This particular study contributes significant new information to the continuing conversation about technological innovation in the travel and tourism industry. It is the beginning of a more intelligent, leaner, and customer-focused travel industry.

## Theoretical Background

### *Generative AI-Based Travel and Tourism Apps (GAI-based TTA)*

GAI-based TTA is a phrase used to refer to GAI-based TTAs (Kim et al., 2023). On personalization and efficiency, AI-powered TTAs are revolutionizing the industry with advances such as improved planning for travel and customer service (Wong et al., 2023). These applications use highly complex AI algorithms, thus offering immediate assistance (Pahari et al., 2023) while making personalized travel itineraries and recommendations that have been tailored according to user preferences as well as behavior (Li & Lee, 2024). Some of the technologies involved in this conversation are natural language processing, machine learning, etc, where TTA's converse with their users, handle their queries, and also offer immediate help using GAI-powering them (Christensen et al., 2024). These include, among other things, improved resource allocation, price optimization strategies, and predictive analysis of travel patterns (Duong et al., 2024). In other words, they enhance the experience of traveling through GAI while businesses can optimize themselves for competition in a world that keeps changing (Christensen et al., 2024).

### *Consumption Values Theory*

Sheth, Newman, and Gross model were developed in 1991, which spells out five main value types forming consumer behavior, namely "functional value," "social value," "emotional value," "epistemic value," and finally, "conditional value" (Sheth et al., 1991). The first one gives practical advantages of having either a product or service. It also looks at how well something is socially accepted when put into practice besides the recognition it gets from various people describing social values (Tanrikulu, 2021). Concerns, feelings, or affective states result from using any product or service (Lin & Huang, 2012) for a time, whether long-term or short-term. Additionally, curiousness drives consumers to search for new products or services. Finally, situational factors are referred to as conditional values upon which customers might base their decisions (Lee et al., 2015). Marketing professionals can anticipate what will satisfy target groups before launching campaigns thanks to their understanding of these varied values (Turel et al., 2010). Because they are well aware of what customers desire, this helps them tailor their methods (Gonçalves et al., 2016).

## Formulation of Hypotheses

### *Functional Value*

In general, TTAs offer practical benefits such as efficient travel planning, real-time updates, and personalized recommendations, thus improving overall user experience (Chakraborty & Altekar, 2021). Trust is a critical consideration in this respect since users must have full faith in the app's ability to safely manage their private information and provide them with accurate, reliable details (Fakfare & Manosuthi, 2023). This means that when individuals perceive the application as being highly functional and are confident of its capabilities as well as security measures (Camilleri et al., 2023; Chakraborty, 2018), they are more likely to use these GAI-based TTA. This intention is further strengthened by previous successful experiences and the app's reliable performance, resulting in increased rates of adoption and ongoing usage (Gao et al., 2024). With a focus on enhancing functional value and building trust, developers and marketers can effectively increase users' willingness to adopt (Ho et al., 2021) GAI-based TTA, thereby facilitating wider acceptance among tourists, leading to higher levels of satisfaction among travelers. Thus, we propose:

- **H1 :** Functional value has a positive impact on trust.
- **H2 :** Functional value has a positive impact on the intention to use GAI-based TTA.

### *Social Value*

When users believe that an AI-based TTA can enhance their social interactions and improve their position in society, they also must have faith in the safety of the app as well as its reliability (Ho et al., 2021). Combining social value with trust is what makes GAI-based TTA attractive and keeps users loyal to them (Gao et al., 2024). While using these apps, some of the perceived social benefits include getting a sense of approval, raising one's social status or meeting with other tourists who think along the same lines – all these together constitute the overall impression of social value derived from using such apps (Dastjerdi et al., 2019). Users' confidence in terms of the dependability of this app regarding information confidentiality, data protection, and truthiness is only feasible through establishing reliance on trust (Fakfare & Manosuthi, 2023). Consequently, there has been a substantial increase in use when people feel that GAI-based TTA can enhance their relationships and elevate their status, having confidence in their reliability and security. Hence, we propose that:

- **H3 :** Social value has a positive impact on trust.
- **H4 :** Social value has a positive impact on the intention to use GAI-based TTA.

### *Emotional Value*

The emotional value depends on whether users experience positive feelings or emotions after using this application, such as thrill, fun, and expectation for seamless travel (Gao et al., 2024). For users to trust an app, it must be able to protect personal information as well as offer reliable services; hence, building trust is important (Fakfare & Manosuthi, 2023). The more emotionally connected the user feels with the app, the higher his/her tendency to choose GAI-based TTA. These features make it more appealing as it creates an emotional attachment which engenders loyalty among users leading to repeat visits by them over time (Ho et al., 2021). Emotional value, trust, and intention to use are key drivers of user adoption of GAI-based TTA.

- **H5 :** Emotional value has a positive impact on trust.
- **H6 :** Emotional value has a positive impact on the intention to use GAI-based TTA.

### *Trust and Intention to Use Generative AI-Based TTA*

Trust is crucial for users who believe that these applications, such as GAI-based TTA, can provide them with accurate, timely, and helpful travel recommendations (Duong et al., 2024). Therefore, it increases users' propensity to embrace and utilize the app when they are confident that it can produce precise and personalized travel suggestions (Chakraborty, 2021), communicate timely notifications, and provide seamless customer care support (Dash et al., 2022; Dwivedi et al., 2024). This suggests that by offering better service quality or consistent performance throughout the user consumption experience (Dash et al., 2023), trust has been developed on GAI-based TTA, making repeat visits possible (Christensen et al., 2024). Hence, establishing trust becomes necessary in order to maximize user acceptance and ensure ongoing use of these new digital travel applications (Li & Lee, 2024). Cutting-edge travel technology such as this requires maintaining user adoption rates by raising confidence levels among its users about the security of their data.

↳ **H7 :** Trust positively influences the intention to use GAI-based TTA.

### *Mediating Effect of Trust*

Users' perception of trust in an app's reliability, security and ethical compliance with regard to personal data is a key determinant for its adoption (Gao et al., 2024). Strengthening social interaction (Chakraborty & Dash, 2022), status, or community involvement can go a long way in adding social value to the app (Ho et al., 2021). Other than this, travel planning is seen as getting more efficient and thus becoming more useful through other practical advantages such as real-time updates (Zhou et al., 2022). Emotional value also plays a big part in encouraging application-taking since it is closely related to users' positive feelings and experiences regarding it (Dastjerdi et al., 2019). There are trust and worthiness that make people feel confident about using GAI-based TTA, therefore increasing engagement and loyalty among travelers (Ho et al., 2021). Trust, social value, functional value, and emotional value all contribute to influencing people's decision to adopt GAI-based TTA.

↳ **H8a :** Trust mediates intention to use GAI-based TTA and functional values.

↳ **H8b :** Trust mediates intention to use GAI-based TTA and social values.

↳ **H8c :** Trust mediates intention to use GAI-based TTA and emotional values.

### *Online Risk Perception as a Moderator*

However, there are apprehensions concerning data protection breaches, information privacy issues, as well as misinformation which may affect trust in these apps regardless of their perceived benefits or strengths (Christensen et al., 2024). Building trust requires having strong security measures, openness to data handling practices, and effective communication privacy policies (Li & Lee, 2024). Users need applications that foster social connection and enjoyable user experiences in addition to those that offer practical features like tailored suggestions or easy flight planning (Shi et al., 2024). It is possible to significantly increase users' readiness to adopt and use GAI-based TTA by effectively managing online risk perception, building trustworthiness, and offering valuable social, functional, and emotional encounters (Amos & Zhang, 2024). This will improve long-term traveler engagements and industry satisfaction. Their perceptions of online danger significantly impact customers' trust in GAI-based TTA. Additionally, because GAI-based TTA create social value, these perceptions also have an impact on customers' intentions to use GAI-based TTA. We therefore hypothesize that:

↳ **H9a :** Online risk perception moderates the association between emotional value and intention to use GAI-based TTA.

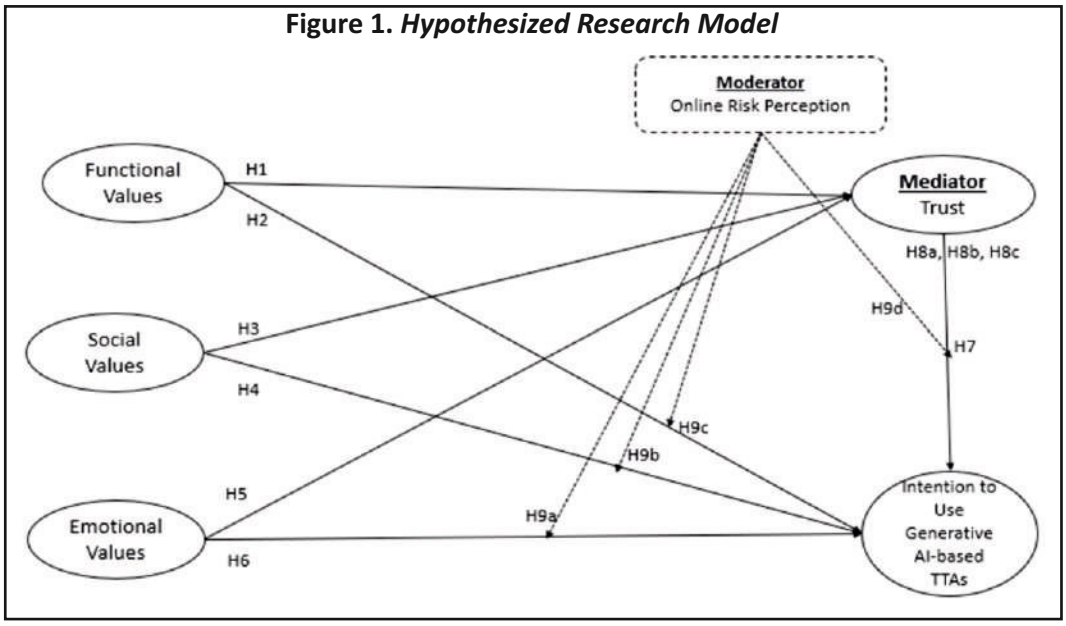
↳ **H9b :** Online risk perception moderates the association between social value and intention to use GAI-based TTA.

↳ **H9c :** Online risk perception moderates the association between functional value and intention to use GAI-based TTA.

↳ **H9d :** Online risk perception moderates the association between trust and intention to use GAI-based TTA.

Figure 1 presents the hypothesized research framework.

**Figure 1.** ***Hypothesized Research Model***




## Methods

### *Data Collection*

A standardized questionnaire was used to administer an online survey for collecting the responses for the study. On a 5-point Likert scale, "*strongly agree*" was five and "*strongly disagree*" was one. The questionnaire comprised questions from GAI-based TTA usage literature (Table 2). From December 2023 to May 2024, we shared the survey with more than 5,000 users. There were no missing values in the first 440 replies that were received. Table 1 displays the respondents' demographic characteristics. The scale was pilot-tested with 43 people after discussions with academicians and managers to get their feedback and suggestions. The pilot stage assisted in fine-tuning and refining the questionnaire.

**Table 1.** ***Respondents' Demographics***

| Demographic Measures | Category | Frequency | Percentage |
|---|---|---|---|
| **Age** | < 24 years | 49 | 11.14% |
| | 24 – 34 years | 68 | 15.45% |
| | 35 – 44 years | 114 | 25.91% |
| | 45 – 54 years | 101 | 22.95% |
| | 55 years & above | 108 | 24.55% |
| **Household Size** | Only one member | 53 | 12.05% |
| | Two members | 59 | 13.41% |
| | Three members | 94 | 21.36% |
| | Four members | 134 | 30.45% |
| | Five + members | 100 | 22.73% |
| **Gender** | Male | 232 | 52.73% |
| | Female | 208 | 47.27% |

| | | | |
|---|---|---|---|
| **Educational Qualifications** | Completed high school | 21 | 4.77% |
| | Professional degree/vocational school | 84 | 19.09% |
| | Bachelor's degree | 118 | 26.82% |
| | Master's degree | 131 | 29.77% |
| | Doctorate (Ph.D. or equivalent) | 86 | 19.55% |
| **Monthly Income** | < 50,000 INR | 31 | 7.05% |
| | 50,000 – 69,999 INR | 78 | 17.73% |
| | 70,000 – 89,999 INR | 137 | 31.14% |
| | 90,000 – 109,999 INR | 142 | 32.27% |
| | INR 110,000 and more | 52 | 11.82% |

## Data Analysis and Results

### *Data Normalcy*

Two-step data analysis was done with SPSS v 26 and AMOS v 26. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) examined the measurement model. The missing and invalid data, and skewness, kurtosis, and multi-collinearity were cleaned, checked, and corrected. The approach yielded a 440-response dataset, which was forwarded for more in-depth analysis and inquiry. The skewness and kurtosis were found well below the recommended range within +1 to –1, and the data was distributed normally.

### *Common Method Bias*

Harman's single-factor test assessed common method bias. A single component accounted for 28.102% of the variation, below the 50% criterion. The data is bias-free.

### *Measurement Model*

CFA tested fit indices, validity, and reliability. The factor loadings are over 0.7 (Table 2), suggesting the investigation on each item's factor loading is successful and should go ahead with the analysis. The measuring model also provided model fit indices: $\chi^2/df = 1.592$, TLI = 0.983, CFI = 0.986, and RMSEA = 0.037. These numbers determined a measurement model fit that was suitable.

**Table 2.** ***Details of the Items***

| Constructs | Codes | Items | Sources | EFA | CFA | SEM | Cronbach's Alpha |
|---|---|---|---|---|---|---|---|
| **Functional Value *(FUV)*** | *FUV1* | I believe using GAI-based TTA requires less effort than making physical travel inquiries. | (Fakfare & Manosuthi, 2023) | 0.741 | 0.853 | 0.853 | 0.924 |
| | *FUV2* | I believe GAI-based TTA can be trusted. | | 0.773 | 0.859 | 0.859 | |
| | *FUV3* | I believe that using GAI-based TTA can help me find quick solutions. | | 0.81 | 0.854 | 0.854 | |
| | *FUV4* | I believe it is simple to learn how to use GAI-based TTA. | | 0.747 | 0.802 | 0.802 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *FUV5* | I believe GAI-based TTA are beneficial since they save me time and effort. | | 0.772 | 0.843 | 0.843 | |
| **Social Value *(SOV)*** | *SOV1* | The use of GAI-based TTA, in my opinion, will assist me in boosting my social image. | (Camilleri et al., 2023) | 0.796 | 0.938 | 0.938 | 0.94 |
| | *SOV2* | My loved ones use GAI-based TTA. | | 0.833 | 0.919 | 0.919 | |
| | *SOV3* | Professionals in our society probably use GAI-based TTA. | | 0.833 | 0.897 | 0.897 | |
| | *SOV4* | I believe that the use of GAI-based TTA will make you feel more accepted. | | 0.694 | 0.817 | 0.817 | |
| **Emotional Value *(EMV)*** | *EMV1* | Using GAI-based TTA makes me feel at ease. | (Gao et al., 2024) | 0.862 | 0.886 | 0.886 | 0.902 |
| | *EMV2* | Using GAI-based TTA is fun for me. | | 0.825 | 0.88 | 0.88 | |
| | *EMV3* | I enjoy using GAI-based TTA. | | 0.745 | 0.783 | 0.783 | |
| | *EMV4* | I find it interesting to use GAI-based TTA. | | 0.726 | 0.792 | 0.792 | |
| **Trust *(TRU)*** | *TRU1* | GAI-based TTA are trustworthy. | (Dastjerdi et al., 2019) | 0.721 | 0.878 | 0.878 | 0.922 |
| | *TRU2* | GAI-based TTA provide good quality services. | | 0.798 | 0.9 | 0.9 | |
| | *TRU3* | GAI-based TTA care for their customers. | | 0.752 | 0.88 | 0.88 | |
| | *TRU4* | I feel the GAI-based TTA are honest & they keep their promises. | | 0.652 | 0.804 | 0.804 | |
| **Intention to Use Generative AI-based TTAs *(PUI)*** | *PUI1* | I'll use GAI-based TTA to book hotels and flights. | (Pham et al., 2024) | 0.799 | 0.9 | 0.9 | 0.878 |
| | *PUI2* | I'll book hotels and flights through GAI-based TTA. | | 0.71 | 0.741 | 0.741 | |
| | *PUI3* | GAI-based TTA will soon book my flights and hotels. | | 0.774 | 0.807 | 0.807 | |
| | *PUI4* | I would like to use GAI-based TTA again. | | 0.705 | 0.75 | 0.75 | |

***Note.*** GAI-based TTA means Generative AI-based Travel & Tourism Apps.

**Table 3.** ***Validity and Reliability Analysis***

| | CR | AVE | MSV | MaxR(H) | *FUV* | *SOV* | *EMV* | *TRU* | *PUI* |
|---|---|---|---|---|---|---|---|---|---|
| *FUV* | 0.924 | 0.710 | 0.364 | 0.926 | 0.843 | | | | |
| *SOV* | 0.941 | 0.800 | 0.445 | 0.950 | 0.559*** | 0.894 | | | |
| *EMV* | 0.903 | 0.700 | 0.222 | 0.912 | 0.464*** | 0.406*** | 0.836 | | |
| *TRU* | 0.923 | 0.750 | 0.445 | 0.928 | 0.603*** | 0.667*** | 0.471*** | 0.866 | |
| *PUI* | 0.877 | 0.643 | 0.307 | 0.896 | 0.476*** | 0.526*** | 0.358*** | 0.554*** | 0.802 |

***Note.*** *** stands for $p < 0.001$.

The composite reliability (CR) values of the used constructs are shown in Table 3. Estimated CR values exceed 0.70. Estimates support internal reliability and convergent validity. The average variance explained (AVE) is greater than 0.50, making the data convergent. The greatest shared variance was less than the constructs' AVE values, confirming discriminant validity. The constructs' inter-correlations were smaller than the square root of their AVE values. Item loadings must exceed 0.5.

**Table 4.** ***HTMT Analysis***

| | *FUV* | *SOV* | *EMV* | *TRU* | *PUI* |
|---|---|---|---|---|---|
| *FUV* | | | | | |
| *SOV* | 0.558 | | | | |
| *EMV* | 0.464 | 0.420 | | | |
| *TRU* | 0.603 | 0.673 | 0.480 | | |
| *PUI* | 0.458 | 0.510 | 0.354 | 0.546 | |

HTMT was used to assess discriminant validity. Table 4 reveals HTMT values below 0.85, showing discriminant validity.

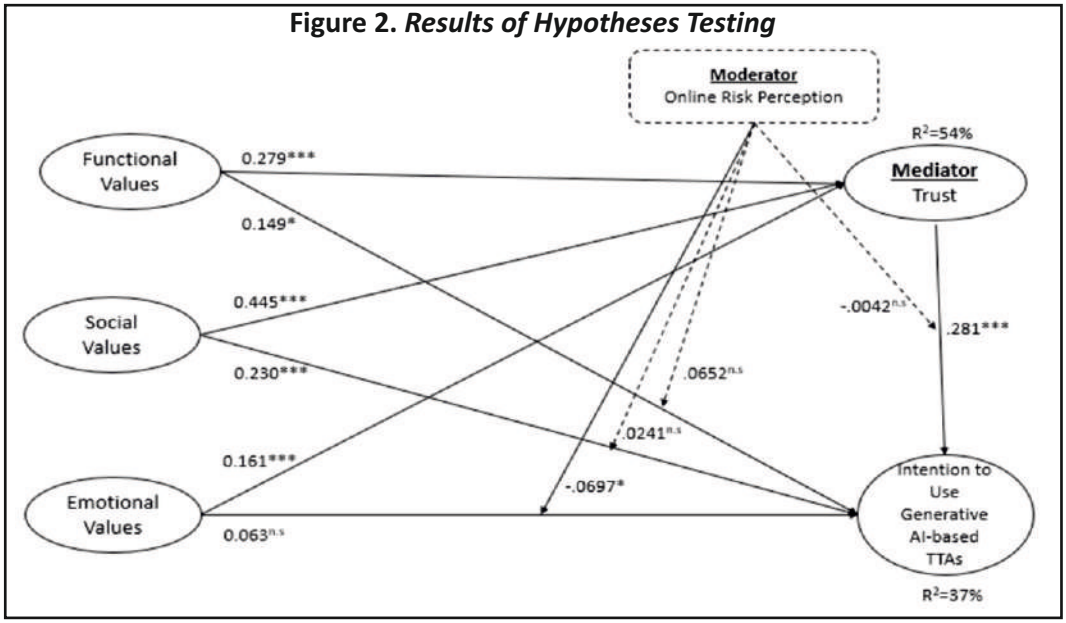
### *Analysis of the Structural Model*

The structural model analysis has good model fit indices ($\chi^2/df = 1.592$, TLI = 0.983, CFI = 0.986, and RMSEA = 0.037). The functional value (ß = 0.279, $p<0.001$), social value (ß = 0.445, $p<0.001$), and emotional value (ß = 0.161, $p<0.001$) have a significant impact on trust.

**Table 5.** ***Hypotheses Results***

| Hypothesis | Path | | | Estimate | *P* - value | Support |
|---|---|---|---|---|---|---|
| **H1** | *TRU* | <--- | *FUV* | 0.279 | <0.001 | Yes |
| **H3** | *TRU* | <--- | *SOV* | 0.445 | <0.001 | Yes |
| **H5** | *TRU* | <--- | *EMV* | 0.161 | <0.001 | Yes |
| **H2** | *PUI* | <--- | *FUV* | 0.149 | <0.05 | Yes |
| **H4** | *PUI* | <--- | *SOV* | 0.23 | <0.001 | Yes |
| **H6** | *PUI* | <--- | *EMV* | 0.063 | >0.05 | No |
| **H7** | *PUI* | <--- | *TRU* | 0.281 | <0.001 | Yes |

**Figure 2.** ***Results of Hypotheses Testing***



Functional value (ß = 0.149, $p$<0.05) and social value (ß = 0.230, $p$<0.001) are significant in intention to use GAI-based TTA; whereas, emotional value (ß = 0.063, $p$>0.05) is not. Trust also influences the intention to use GAI-based TTA. Therefore, H1, H2, H3, H4, H5, and H7 are supported, while H6 is not. The model explains 54% of trust and 37% of GAI-based TTA buy intention (Table 5 and Figure 2).

### *Mediation Analysis*

SPSS PROCESS macro's model 4 examines construct mediation. Initial trust affects the intention to use GAI-based TTA. Tables 6 and 7 show total, direct, and indirect correlations between research constructs. H8a–H8c are significant. Trust partially mediates the intention to use GAI-based TTA, and social, emotional, and functional value.

**Table 6.** ***Results of Mediation Analysis***

| ***SOV → TRU → PUI*** | | | | | | |
|---|---|---|---|---|---|---|
| | **β** | ***SE*** | ***t*** | ***p*** | ***LLCI*** | ***ULCI*** |
| *SOV → TRU* | 0.5796 | 0.0346 | 16.7686 | 0.0000 | 0.5117 | 0.6476 |
| *TRU → PUI* | 0.2919 | 0.0459 | 6.3594 | 0.0000 | 0.2017 | 0.3821 |
| *SOV → PUI* (Direct Effect) | 0.2109 | 0.0425 | 4.957 | 0.0000 | 0.1273 | 0.2945 |
| *SOV → PUI* (Total Effect) | 0.3801 | 0.0347 | 10.9642 | 0.0000 | 0.312 | 0.4482 |
| ***EMV → TRU → PUI*** | | | | | | |
| *EMV → TRU* | 0.4874 | 0.0478 | 10.1919 | 0.0000 | 0.3934 | 0.5814 |
| *TRU → PUI* | 0.3863 | 0.0406 | 9.5123 | 0.0000 | 0.3065 | 0.4661 |
| *EMV → PUI* (Direct Effect) | 0.1217 | 0.0452 | 2.6912 | 0.0074 | 0.0328 | 0.2105 |
| *EMV → PUI* (Total Effect) | 0.31 | 0.0446 | 6.9489 | 0.0000 | 0.2223 | 0.3976 |
| ***FUV → TRU → PUI*** | | | | | | |
| *FUV → TRU* | 0.6332 | 0.0451 | 14.0486 | 0.0000 | 0.5446 | 0.7218 |
| *TRU → PUI* | 0.3341 | 0.0435 | 7.6818 | 0.0000 | 0.2486 | 0.4196 |
| *FUV → PUI* (Direct Effect) | 0.2039 | 0.0494 | 4.1249 | 0.0000 | 0.1067 | 0.301 |
| *FUV → PUI* (Total Effect) | 0.4154 | 0.0437 | 9.5142 | 0.0000 | 0.3296 | 0.5013 |

**Table 7.** ***Indirect Effects***

| **Indirect Effects** | **Hypotheses** | **β** | **SE** | **LLCI** | **ULCI** | **Mediation?** |
|---|---|---|---|---|---|---|
| *FUV → TRU → PUI* | H8a | 0.2116 | 0.0337 | 0.1461 | 0.2779 | Yes |
| *SOV → TRU → PUI* | H8b | 0.1692 | 0.0334 | 0.1065 | 0.2363 | Yes |
| *EMV → TRU → PUI* | H8c | 0.1883 | 0.0265 | 0.1371 | 0.2411 | Yes |

### *Moderating Effects*

Research has been done on the moderating effect of perceived online danger on consumption values and the intention to utilize GAI-based TTA. Internet risk perception has a favorable impact on the relationship between functional value, trust, and intention to utilize GAI-based TTA (Table 8). According to the moderation analysis, customers with high and medium responses toward functional value are more likely to use GAI-based TTA (refer to Figure 3). Figure 4 shows that medium and high-trust clients have high intention to use GAI-based TTA. H9c and H9d are significant.

**Table 8.** ***Results of Moderation Analysis***

| Online Risk Perception (ORP) as a Moderator | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Hypotheses** | **Path** | **β** | **SE** | ***t*** | ***p*** | **LLCI** | **ULCI** | **Moderation?** |
| H9c | *FUV → PUI* | –0.058 | 0.0285 | –2.0328 | 0.0427 | –0.114 | –0.0019 | Yes |
| H9b | *SOV → PUI* | –0.0457 | 0.0248 | –1.8393 | 0.0665 | –0.0945 | 0.0031 | No |
| H9a | *EMV → PUI* | –0.0481 | 0.0277 | –1.7342 | 0.0836 | –0.1025 | 0.0064 | No |
| H9d | *TRU → PUI* | –0.0618 | 0.0251 | –2.4656 | 0.0141 | –0.1111 | –0.0125 | Yes |

**Figure 3.** ***Moderating Influence of Online Risk Perception (Graphically ; based on H9c)***

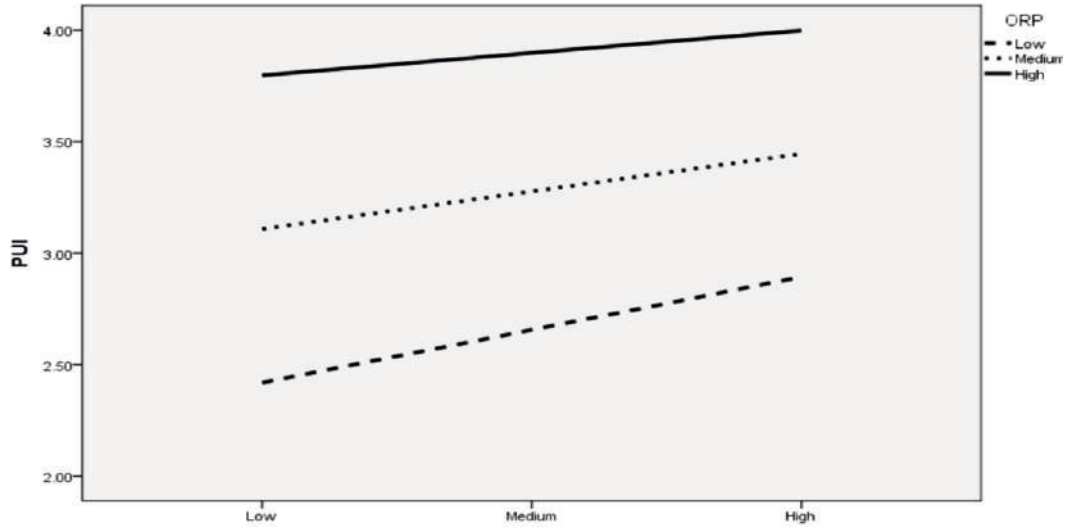
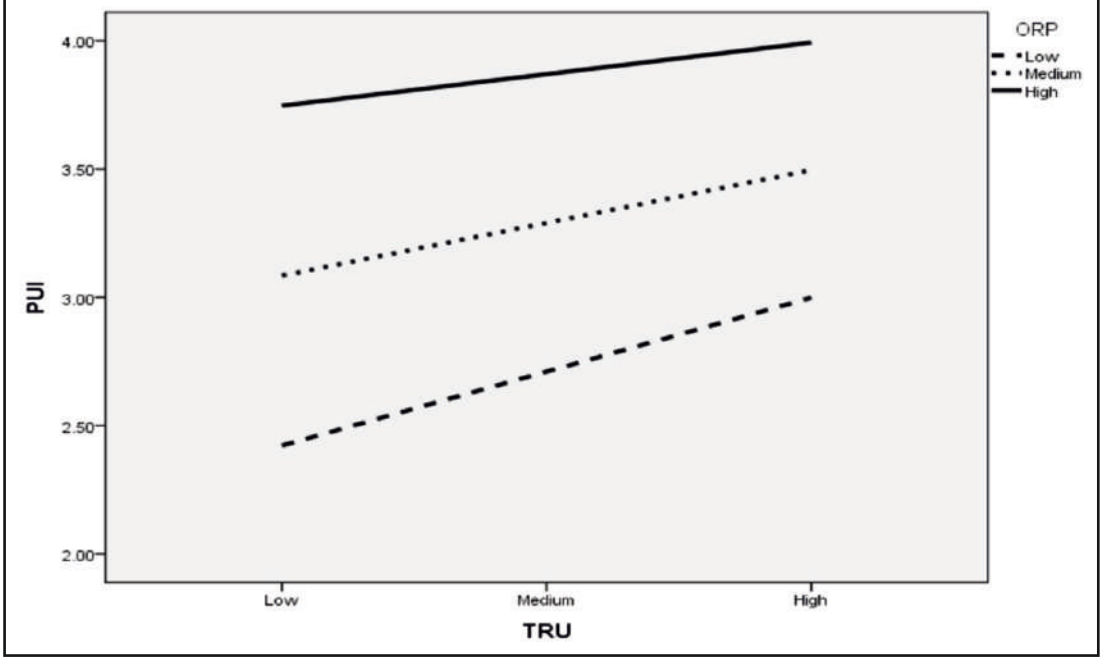



**Figure 4.** ***Moderating Influence of Online Risk Perception (Graphically ; based on H9d)***



## Discussion

Trust in GAI-based TTA is positively associated with functional value because this ensures the technology meets users' practical needs and performs reliably, thereby giving confidence in using it. If users understand a GAI-based TTA to be functional, then they would believe that the technology can support their travel planning well and give accurate recommendations (Sharma & Sharma, 2022). Trust is critical for adoption as it quells concerns about reliability and security. Therefore, a strong functional value closely relates to the intention of utilizing such AI tools since users are more likely to engage with technologies they trust. These characteristics encourage customers to include GAI-based TTA when making trips.

Social value in GAI-based TTA enhances trust as social benefits and acceptance of the same reflect on them. GAI-based TTA are relied upon by people who see their peers and social circles valuing and believing in these technologies. Social endorsement serves as a validation mechanism, reinforcing the perceived reliable nature of these systems; hence making them desirable (Pandey & Joshi, 2022). The more individuals come into contact with others who recognize this kind of value, it follows that their intentions start focusing on behavior changes, which ultimately lead them towards embracing those around them. When the trust increases, so does the intention to use GAI-based TTA.

Emotional benefits build trust because users feel connected personally and emotionally with GAIs that create satisfaction, leading to positive experiences. When people find these technologies enjoyable or engaging besides being supportive of their emotional requirements, they are likely to trust them (Koundinya, 2017). This emotional attachment brings about reliability and comfort, which foster trust-building processes. Trust grows due to positive emotional experiences, just like how intentions use AI-based TTAs do which should be influenced by what makes a person feel good. Thus, emotional values aligning with user feelings should also increase both adherence and trust levels. Such emotional connections serve several purposes, including creating satisfaction among persons using AI-based tools and making their experiences with these facilities worthwhile.

The strength of trust in GAI-based TTA positively impacts the intention to use them, as people will have a higher tendency to engage in them. When users' trust is high in AI-TTAs, they are likely to perceive it can meet their needs and expectations, which thereby increases their intention to use it. Trust can mediate between the intention to use and functional, social, and emotional value by reinforcing the benefits of this tool set against that criterion for each context. The effectiveness of technology, therefore, can be asserted through reliance on trust for functional values, while for social values, its acceptance by society bears relevance. Also, when considering emotional values, trusted designs must support positive user experiences. Hence, trust acts as an integrator, bringing together all these factors in a coherent decision-making process so that the overall intention to use GAI-based TTA's is enhanced.

The online risk perception may not moderate the relationship between emotional value and intention to use GAI-based TTA because emotional values are mainly about personal satisfaction and engagement, which are less influenced by perceived risks. Similarly, social value's effect on purpose is caused by social norms and acceptance that are not significantly swayed by individual perceptions of danger. However, with regard to intention, online risk perception does moderate the relationship between functional value and intention since concerns about functionality and security can increase users' perceived risks towards adopting the technology. Trust also interacts with risk perception in that a higher level of risk erodes trust, thus affecting the intention to use AI-based TTAs. Therefore, while emotion and social values are less affected by online risk perception, functional value and trust rely heavily on how users perceive risks online.

## Implications

### *Theoretical Implications*

Consumer value theory (CVT) was tried in this research because it is capable of establishing frameworks for AI-oriented TTAs. By understanding various elements that influence customers' willingness to use AI tools, the study reveals complex dynamics of consumer behavior in digital landscapes. This will allow the customization of AI applications to cater to customer needs more effectively, thereby enhancing acceptance rates. Combining CVT with GAI also shows how different aspects of values influence user experience, as well as choice-making when technology is involved.

So trust is required to connect kinds of consumption values and intentions in traveling & tourism applications based on GAI. It indicates that trust has a major part to play when addressing barriers to technological innovation, especially concerning concerns regarding functionality, social aspects and emotions linked to these technologies. From the standpoint of a management researcher, it can be seen that integrating trust into theoretical models gives a complete picture of the dynamics surrounding the technology adoption process. In this commitment, some strategies can be made that aim at increasing users' confidence so that they accept and use AI technology better within the travel and tourism industry.

This research suggests that online risk perception plays a role in determining how functional value, trust, and intention relate to each other amongst GAI-based TTA. It recognizes online risk perception as a moderator within this relationship. This research expands the theoretical framework's understanding of risk perceptions to include online risk perceptions, which people use to justify behaviors like consuming or placing their trust when using their gadgets. Investigating moderating effects also sheds light on how users engage with AI products. It gives rise to more effective means of managing or controlling hazards that customers perceive.

### *Practical Implications*

To improve the functional value of their technology, businesses need to focus more on increasing user engagement with TTAs developed using GAI. Similarly, companies should ensure their AI (including all related tools) is dependable, efficient, and meets users' tangible demands, such as travel customizations and real-time support. Consistently delivering outstanding performance together with a keen focus on functionality can earn companies trust with users. This will help them drive the adoption of their technologies and satisfaction with them. If customers believe in a product they are more likely to use it and thereby have an engaging experience. Therefore, these strategies should be aimed at reinforcing social proof like testimonials from other users or endorsements by influencers that are positive peer reviews. Social acceptance will boost trust, thereby facilitating the adoption of the technology by showcasing its value to other people. Such factors will clearly affect how much people would interact with this technology and also change their usage based on societal expectations when AI tools have strong social proofs.

To promote trust in users and encourage the use of GAI-based TTA, businesses need to understand how individuals perceive risks online and handle them effectively. In order to address concerns voiced regarding functionality and privacy, businesses should place a high priority on implementing robust security systems and maintaining open communication on issues of user data protection online.

## Conclusion

In conclusion, personalized interaction between users made possible by immersive technology, which generates

limitless value while lowering costs dramatically due to the technology's efficient operation models, is how large-scale travel changes brought about by GAI can be observed. This study demonstrates the essentiality of trust due to its functional value, which affects user intentions through such values; however, this varies across different users since the functional value may lead to opposing online risk perception, either increasing trust or reducing it depending upon different conceptions rendered by control mechanisms such as reliability and usefulness. We will investigate these aspects in more detail and address these constraints in order to effectively utilize GAI to revolutionize travel in the future.

## Limitations of the Study and Scope for Future Research

Other limitations of the current study include a lack of empirical evidence on the long-term effects of GAI on customer satisfaction and loyalty, besides a limited understanding of demographic variations concerning response to AI-driven personalization. Furthermore, there is a need for more research regarding ethical and privacy issues related to the use of AI data. Integration of GAI with current tourism infrastructure and cost-benefit analysis for small- and medium-sized enterprises remain unexplored areas to date. Forthcoming research has to fill this gap by looking at longer-term consequences for consumer behavior, examining a range of demographic responses, and examining ethics as they relate to the practicalities involved with integrating these technologies into an industry as large as travel & tourism.

## Author's Contribution

Prof. Debarun Chakraborty formulated the research objectives and designed and executed extensive literature reviews to formulate the research hypotheses. He designed a survey questionnaire adapted from extant instruments, collected participants' responses, further analyzed those using standard statistical software, and interpreted the findings without bias. Finally, he documented this article.

## Conflict of Interest

The author certifies that he has no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.


## Funding Acknowledgment

The author did not receive funding from any institution, organization, or person to execute or publish this research.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## About the Author

**Debarun Chakraborty (Ph.D.) is an Associate Professor at the Indian Institute of Management Nagpur, Maharashtra, Pune, India. He has published works on technology adoption, consumer behavior, and sustainability in high-impact factor journals. His research appears in top journals, namely, *Psychology & Marketing*, *Journal of Business Research*, *Technovation*, *Technological Forecasting & Social Changes, Journal of Retailing and Consumer Services*, *Journal of Hospitality Marketing & Management*, *International Journal of Consumer Studies*, *Journal of Computer Information Systems*, *Conflict Resolution Quarterly*, *British Food Journal* among others.**