

An Analysis of Smart Tourism Technologies (STTs) at Visitor Attractions: Investigating the Influence of Information, Accessibility, Interactivity, Personalization, and Security on Tourist Satisfaction

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ABSTRACT

Smart Tourism Technologies (STTs) are progressively important to enhancing visitor experiences and influencing satisfaction at tourism destinations. This study investigates the impact of five key STT dimensions: information, accessibility, interactivity, personalization, and security on tourist satisfaction at visitor attractions in the Klang Valley region of Malaysia, which comprises Kuala Lumpur and nearby districts in Selangor. A quantitative research approach was chosen, using a structured online questionnaire administered to 200 respondents through convenience sampling. Data were analysed using descriptive statistics and multiple linear regression. Descriptive results showed steadily high mean scores across all STT dimensions. Regression analysis revealed that information, accessibility, personalization, and security were supported and showed a significant positive influence on tourist satisfaction. In contrast, interactivity was not supported, showing no significant effect ($p = 0.864$). This suggested that this dimension may not be perceived as essential by visitors in the context of STT-supported experiences. The study proposes practical implications for tourism planners and destination managers by underscoring the importance of strengthening core STT functionalities while critically assessing the role of interactivity in the future technological investments. Additionally, it supports to the expansion body of literature on smart tourism by delivering empirical evidence from a Southeast Asian context and highlighting methods to improve visitor satisfaction through technology-enabled experiences.

Keywords: Smart Tourism Technologies (STTs), Information, Accessibility, Interactivity, Personalization, Security, Satisfaction

INTRODUCTION

In the era of global digitalization, the widespread use of smart technologies has become an integral part of the tourism industry (Zhang & Yang, 2016). Koo, Mendes-Filho, and Buhalis (2019) assert that tourism destinations and attractions should prioritize this existence by implementing and utilizing smart infrastructure and technologies in their services. The acceptance of smart tourism technologies (STTs) has gained significant momentum, with a strong emphasis on their position in augmenting traveller satisfaction in the tourism area (Yap et al., 2025). Smart Tourism Technologies (STTs) refer to applications intended to improve and expand the breadth of the tourist experience (Neuhofer, Buhalis, & Ladkin, 2015).

The influence of detailed STTs on the tourism experience has been observed in the existing literature available to researchers. Wu (2020) posits that research has examined the utilization of big data in the tourism segment for the analysis and assessment of both quantitative and qualitative demand data. AI also helps with the complicated idea of goods and experiences that keep track of what customers like using big data (Gretzel and Zheng, 2020). Travelers are grateful for mobile technology because it makes things easier for them. By having tablets, smartphones, or other portable devices, travellers can communicate with anyone, at any time, and

anywhere they want (Kim & Tussyadiah, 2013). Most travellers share their trip experiences across social media platforms, which has changed the way they talk about their trips (Wang, 2021). AR and VR technology set travellers to enjoy interactive device-supported settings (Burdea and Coiffet, 2003; Tussyadiah, Wang, Jung, & Dieck, 2018).

Smart Tourism Technologies (STTs) have been demonstrated to affect multiple dimensions of tourist behaviour, encompassing attitudes, experiences, satisfaction, perceptions, and intentions (Huang, Goo, Nam, & Yoo, 2017). In general, people who attach to the tourism sectors are starting to see how STTs can improve visitor satisfaction and loyalty, as well as make tourism companies and destinations more competitive and effective (Shafiee et al., 2023). Prior research has examined tourist satisfaction concerning various smart technologies, including immersive tools (Alam et al., 2024; Cheong & Law, 2023), smartphones (Chung et al., 2024; Kamboj & Joshi, 2021), artificial intelligence and self-service arrangements (Chang et al., 2023; Dhiman & Jamwal, 2023), online travel networks (Chakraborty et al., 2023; Zheng et al., 2022), mobile payment classifications (Tiwari et al., 2023), as well as immediacy-based technologies (Jafar & Ahmad, 2024).

While these studies provide significant insights, many have concentrated either on specific technologies or on intricate mechanisms of the smart tourism experience. Very few have used an integrated approach to look at how the five main STT dimensions which include information, accessibility, interactivity, personalization, and security. These dimensions work together to affect tourist satisfaction at physical visitor attractions (Huang et al., 2017; No & Kim, 2015). Moreover, previous studies frequently neglect the influence of geographical context and technological proficiency on tourists' perceptions and assessments of STT-enhanced experiences. In places like Malaysia, especially the Klang Valley, where digital infrastructure and the number of visitors is both growing, it's important to know how these things affect satisfaction scores. Consequently, this study addresses a significant gap by examining the cumulative impact of five essential STT attributes on tourist satisfaction at visitor attractions. By placing the research in an urban Southeast Asian setting, the results provide a more contextually relevant insight into tourist interactions with smart tourism technologies, potentially leading to outcomes that diverge from those found in more technologically advanced or established tourism markets.

LITERATURE REVIEW

Smart Tourism

The word "smart" has increasingly been associated with the integration of advanced technologies in numerous spheres of economic and social development, typically illustrated throughout the lineage of modern and smart technological equipment like smart devices (phone and TVs), or smart transportation (Pai et al., 2020). In tourism, "smart" is characterized by aspects such as intelligence, sustainability, environmental friendliness, integration, and ubiquity (Um & Chung, 2019), predominantly able to improve tourists' experience in visiting destinations. Smart tourism application involves the integration and combination of real-time data, digital infrastructure, and networked services to develop a dynamic, complex environment similar to that of a smart city (Pai et al., 2020).

Smart tourism is becoming more common in practice and is often promoted through government programs and marketing campaigns globally. The extensive adoptions can be seen in many countries through various innovations' transitions. Smart tourism has been viewed as a management strategy, a technological trend, or a cutting-edge information service system in different settings. Zhang, Li, and Liu (2012) characterized smart tourism as transformative and inventive management process that improves resource optimization and promotes value co-creation concerning service providers and tourists.

Gretzel, Sigala, Xiang, and Koo (2015) put forward a multidimensional model of smart tourism that has three parts that work together: smart destinations, smart business networks and smart involvements. To make personalized and efficient tourism services, these layers need to keep collecting, processing, and sharing data. Li, Hu, Huang, and Duan (2017) also said that the main idea behind smart tourism is that information services and resource communication are available at all times during a trip. This provides proper access to real-time to tourists, location-based content and the ability to make decisions.

Smart Tourism Technologies (STTs)

Smart Tourism Technologies (STTs) not only incorporate smart devices but also a massive sequence of digital and emerging technologies such as social media channels, big data, cloud computing, the Internet of Things (IoT), mixed reality, virtual reality (VR), artificial intelligence (AI), augmented reality (AR), Near Field Communication (NFC), and radio-frequency identification (RFID) that are now all part of tourism-related activities (Pai et al., 2021). These digital innovations have been increasingly used in the tourism sector because they are capable of enriching visitor experiences and delivering services efficiently. In remarkable point, the popularity of STTs often stems not so much from the technology devices themselves as from the experiential services these provide for tourists.

There are two main types of studies on STTs: those that look at older or long-established online information networks and those that look at newer, more immersive technologies. Tourists still need to plan their trips using online information, which they often make and share. Social media, in particular, is a great place to find and share information about travel. No and Kim (2015) say that the four main places to find online tourism data are blogs, commercial websites, public websites, and social networking sites. Their research pinpointed five critical dimensions of online tourism data: accessibility, security, reliability, interactivity, and personalization, with security emerging as the paramount factor on public websites. Huang, Goo, Nam, and Yoo (2017) asserted that the fundamental attributes of STTs include informativeness, accessibility, interactivity, and personalization. These characteristics constitute the basis for considering the influence of STTs on tourist satisfaction and behaviour in modern tourism experiences and activities.

i) Information

Information refers to high-quality, credible, and relevant content that supports tourists in planning and decision-making. STTs enable access to timely and accurate details about attractions, facilities, and cultural experiences, thereby reducing uncertainty and enhancing confidence (Kim & Hiemstra, 2004; Chung & Koo, 2015). When tourists perceive information as reliable and useful, their overall satisfaction increases (Huang, Goo, Nam, & Yoo, 2017). Thus, information is a constitutive aspect of STTs and illustrates a satisfactory position in improving effectiveness and efficacy in their traveling.

H1a: Information has a positive effect on tourist satisfaction.

ii) Accessibility

Travelers use multiple Smart Tourism Technologies (STTs) to get and use travel-related data. Accessibility describes on how simple it is for tourists to find or use tourism-related content through different devices and platforms. Tourists experience better convenience and efficiency when information and services remain simple to use (No & Kim, 2015). Similarly, user-friendly systems which provide continuous access led and stimulus to higher user engagement and satisfaction (Ho & Lee, 2007).

H1b: Accessibility has a positive effect on tourist satisfaction.

iii) Interactivity

Interactivity is another important characteristic of STTs, which involves dynamic communication between tourists, service providers, and systems. Features such as two-way message or communication, reviews, and real-time feedback can encourage active engagement (Berthon, Pitt, & Watson, 1996; Huang et al., 2017). However, its influence on satisfaction may depend on user expectations and cultural context.

H1c: Interactivity has a positive effect on tourist satisfaction.

iv) Personalization

Personalization in tourism refers to fitting services to meet individual travellers' needs and preferences, thereby enhancing their enjoyment of tourism sites and experiences (Madu, 2002). It involves content and

services to individual interest, increasing relevance and perceived value. Customized recommendations enhance efficiency and strengthen feelings of being understood (Schaupp & Bélanger, 2005; Park & Gretzel, 2007). Tourists are more likely to perceive STTs positively when their needs are completed through personalized features (Jeong & Shin, 2019).

H1d: Personalization has a positive effect on tourist satisfaction.

v) Security

In the context of STTs, security is described as the safety or security of private information and the discretion of transactions (Park & Gretzel, 2007). Tourists' willingness to believe in STTs if is inclined by their perceptions of privacy and data protection (No & Kim, 2015). If travellers sense that their personal information is not secure, they may be reluctant to complete transactions or accept certain technologies (Jeong & Shin, 2019; Kim et al., 2004; Lee et al., 2018). Warranting strong security devices is critical to fostering trust and increasing the practice of smart tourism applications, hence enhance both satisfaction and loyalty.

H1e: Security has a positive effect on tourist satisfaction.

Tourist Satisfaction

According to Olver (1993), tourist satisfaction initiates the concept from the marketing literature, where it refers to the estimation of either an invention or service encounters exceeds consumer expectations. In tourism, satisfaction is resultant from comparing travellers' hopes with their real involvements (Pizam et al., 1978). Research in this area stresses on classifying the developments and variables that influence tourist satisfaction (He, Liu & Li., 2019). It is a multidimensional construct reflecting both immediate service encounters and the overall travel experience (Neal & Gursoy, 2008) In technology-mediated tourism, satisfaction is increasingly linked to system-related attributes such as information quality, ease of access, personalization, and security (He, Liu, & Li, 2019).

Current literature mostly observes on tourist satisfaction as a multi-dimensional construct that includes both general and specific satisfaction (Prayag et al., 2018; Veloutsou et al., 2005). Detailed satisfaction denotes to the instant emotional response to a certain tourism service or product, while general satisfaction replicates an all-inclusive psychological assessment and evaluation of the whole travel experience (Garbarino & Johnson, 1999). Although satisfaction with individual services is moderate, overall satisfaction can be high if the collective experience is perceived entirely. This research recommends that the dimensions of STTs influence tourists' satisfaction precisely during their visits.

METHODOLOGY

Study Site

This study was completed in the Klang Valley region, which comprises Kuala Lumpur and its surrounding districts in Selangor. The areas recognized as leading urban tourism hubs in Malaysia that dynamically go well with smart tourism technologies (STTs) to increase visitor experiences and competitiveness. Launched in 2018 by Tourism Malaysia, The Malaysia Smart Tourism 4.0 inventiveness exemplifies the country's obligation to digital transformation in tourism. Klang Valley's smart tourism ecosystem incorporates digital platforms and mobile applications designed to augment the visitor journey through technology-driven services. Moreover, the National Tourism Policy (NTP) supports the "Embracing Smart Tourism" strategy, which endorses digital infrastructure and innovative applications across tourism sectors. These developments position the Klang Valley as an appropriate and pertinent setting for studying the impact of STTs on tourist satisfaction and experience.

Research Design

This study implemented a quantitative research design in assessing the relationship between attributes of STT and tourist satisfaction. Primary data collection by survey questionnaire among tourists recently visiting Klang

Valley and using STTs formed the basis of choosing this methodology. Survey instruments were adapted from well-recognized literature on STTs and related tourism experiences to ensure content validity. The demographic characteristics of the respondents included age, gender, educational level, employment status, and monthly income. Statistical analysis involving regression techniques was used to test the effect of five dimensions of STTs- information, accessibility, interactivity, personalization, and security-on tourist satisfaction.

Instrument and Pilot Study

Data for this study were established using a structured, self-administered questionnaire, circulated both online via Google Forms and through direct, face-to-face distribution. The questionnaire was prudently designed to ensure precision and constancy, with a few items adapted from validated scales used in previous studies (Shen, Sotiriadis, & Zhang, 2020). In line with best procedures, the wording of the questions was adapted with existing literature to lessen response bias (Mayer, 2021). A pilot test was completed with 30 respondents to evaluate the instrument's reliability. The Cronbach's alpha (α) coefficient attained was 0.825, signifying a great level of internal consistency.

The instrument confined of three main sections: (1) demographic information, (2) assessment of smart tourism technology (STT) dimensions, and (3) measurement of satisfaction with STTs structures. A five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) was employed to calculate responses, qualifying the analysis of relationships between STT dimensions and tourist satisfaction. Screening questions were also enquired to verify respondents' suitability for contribution in the study.

FINDINGS

To analyse the collected data, both descriptive and inferential numerical approaches were used. Descriptive statistics, comprising mean scores and standard deviations, were finalized to recapitulate the dominant propensities and variability appeared in the dataset. Further, multiple regression analysis was conducted as an inferential technique to examine the relationships among the key study variables.

Where appropriate, additional statistical measures were applied to report the study's research objectives, questions, and hypotheses. Data collection was carried out over a period of two months, resulting in a total of 200 valid responses. The questionnaire was managed through a combination of online and face-to-face distribution methods, ensuring a broad and diverse respondent base. Table 4.0 below presents the demographic profile of the respondents.

Reliability Test

One way to substantiate the internal consistency of a scale is through a reliability test. The Cronbach's alpha coefficient was employed by the researcher as an indication to assess the level of consistency. According to Hair et al. (2010), a Cronbach's alpha coefficient scale that is more than 0.7 may be accepted. The Cronbach's Alpha in this study showed an incredibly good reliability, where the information is 0.883; accessibility is 0.808; interactivity is 0.837; personalization is 0.839; security is 0.898; and tourists' satisfaction is 0.940. Every variable has a Cronbach's alpha coefficient more than 0.8 overall. This conclude that all items in this study are reliable and consistent. The summary of the reliability test is presented in Table 4.0.

Table 4.0: Summary of Reliability Test

Variables	No. of Items	Cronbach's Alpha
Information	5	0.883
Accessibility	5	0.808
Interactivity	5	0.837
Personalization	5	0.839
Security	5	0.898
Tourist Satisfaction	7	0.940

Respondents' Profiles

As shown in Table 4.1, a total of 200 respondents participated in the study. The gender distribution was slightly skewed toward females, who made up 56 percent, while males accounted for 44 percent. Regarding age, the largest group was 31–40 years (33.5 percent), followed by 25–30 years (29 percent), with only 9 percent aged above 50 years. Most respondents were well-educated, with nearly half obtaining a bachelor's degree (48 percent) and an additional 14 percent possessing a master's degree. In terms of employment, 31 percent worked in the private sector, 24.5 percent were government employees, 20 percent were students, and 14 percent were self-employed; the remaining respondents were retired (6 percent) or reported other occupations (4.5 percent). Monthly household income varied, with 36.5 percent earning RM5,001–RM10,000, 32.5 percent earning RM1,800–RM5,000, 19 percent earning below RM1,800, and 12 percent earning above RM10,000. Given that the sample is largely young and well-educated, respondents are likely familiar with digital technologies, which may broadly influence their engagement with Smart Tourism Technologies (STTs). Detailed links between demographics and STT perceptions are explored in the discussion.

Table 4.1: Demographic Profile of the Respondents

Respondents' Information		Frequency (n)	Percentage (%)
Gender	Male	88	44
	Female	112	56
Age	18 - 24 years old	32	16
	25 - 30 years old	58	29
	31 - 40 years old	67	33.5
	41 - 50 years old	25	12.5
	Above 50 years old	18	9
Education Level	Secondary/High School (SPM/STPM)	21	10.5
	Certificate/Diploma	42	21
	Bachelor's degree	96	48
	Master's Degree	28	14
	Doctorate/PhD	9	4.5
	Others	4	2
Employment	Government Servant	49	24.5
	Private Sector	62	31
	Self-employed	28	14
	Student	40	20
	Retired	12	6
	Others	9	4.5
Income (Monthly)	Below RM1800	38	19
	RM1800 – RM5000	65	32.5
	RM5001 – RM10000	73	36.5
	Above RM10000	24	12

Note: n=200

Descriptive Statistic

Descriptive statistics were used to summarize respondents' perceptions of the constructs measured in this study. Data were obtained using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. Mean scores and standard deviations were calculated for each dimension to indicate the overall level of agreement and the variability of responses.

i) Information

The analysis of the ‘Information’ dimension of smart tourism technologies (STTs) indicated that respondents expressed consistently high agreement across all five items (Table 4.2). Mean scores ranged from 4.20 to 4.29 on a five-point Likert scale, showing a strong positive insight of the information provided by STTs. The highest mean was for “STTs offer information that is easy to access and understand, enabling me to make better decisions” ($M = 4.29$, $SD = 0.71$), highlighting the importance of clarity and accessibility of information. The lowest, though still high, mean score was recorded for “STTs provide information that helps minimize my travel concerns and problems” ($M = 4.20$, $SD = 0.69$). Standard deviations were relatively low (0.68–0.80), suggesting minimal variability and a generally consistent agreement among respondents.

Table 4.2: Descriptive Statistics for Information Dimension

Items (Information)	Mean Score	Standard Deviation
STTs provide useful and helpful information for my travel.	4.23	0.798
STTs allow me to complete my travel with consistent and comprehensive information.	4.26	0.681
STTs provide information that helps minimize my travel concerns and problems.	4.20	0.694
STTs give correct and current information that enhances my travel experience.	4.24	0.710
STTs offer information that is easy to access and understand, enabling me to make better decisions.	4.29	0.708

ii) Accessibility

Table 4.3: Descriptive Statistics for Accessibility Dimension

Items (Accessibility)	Mean Score	Standard Deviation
STTs can be used anywhere and anytime during my travels.	4.14	0.798
STTs are easily connected to Wi-Fi networks during my travels.	4.09	0.747
STTs are easily accessed without complicated processes while traveling.	4.03	0.775
STTs are compatible with a wide range of devices that I use when traveling.	4.06	0.789
STTs load quickly and perform reliably, even in areas with limited network coverage.	3.98	0.829

Analysis of the ‘Accessibility’ dimension in Table 4.3 revealed that respondents viewed smart tourism technologies (STTs) as vastly accessible during their travels. Across the five items, mean values ranged from 3.98 to 4.14, demonstrating a constructive assessment of accessibility. The statement “STTs can be used anywhere and anytime during my travels” verified the highest mean ($M = 4.14$, $SD = 0.80$), reflecting confidence in the STTs availability across locations and times. The item with the lowest mean was “STTs load quickly and perform reliably, even in areas with limited network coverage” ($M = 3.98$, $SD = 0.83$), indicating that reliable performance in weak-signal areas remains slightly less assured. Overall, standard deviations between 0.75 and 0.83 suggest limited dispersion and strong consensus among respondents.

iii) Interactivity

The results demonstrated that respondents generally agreed that smart tourism technologies (STTs) are interactive during travel (Table 4.4). Mean scores for the five items ranged from 4.15 to 4.28 on a five-point scale, indicating a high level of agreement. The highest mean was for “STTs make it easy for me to share information and content while traveling” ($M = 4.28$, $SD = 0.73$), showing strong support for the ease of sharing information. The lowest mean was for “STTs allow real-time communication and feedback during my travels” ($M = 4.15$, $SD = 0.76$), still reflects positive perceptions. Standard deviations between 0.73 and 0.80 suggest consistent responses across participants.

Table 4.4: Descriptive Statistics for Interactivity Dimension

Items (Interactivity)	Mean Score	Standard Deviation
STTs provide interactive features that enhance my travel experience.	4.19	0.766
STTs are highly responsive during my travels.	4.17	0.801
STTs make it easy for me to share information and content while traveling.	4.28	0.734
STTs allow real-time communication and feedback during my travels.	4.15	0.764
STTs enable two-way interaction between users and service providers throughout my trip.	4.18	0.795

iv) Personalization

Table 4.5: Descriptive Statistics for Personalization Dimension

Items (Personalization)	Mean Score	Standard Deviation
STTs provide customized or tailored information when I am traveling.	3.97	0.798
STTs offer easy-to-follow links and tips during my travels.	4.07	0.726
STTs provide personalized information through user interactions while traveling.	4.13	0.771
STTs recommend activities, attractions, or services based on my preferences and past behaviour.	4.14	0.819
STTs allow me to adjust settings and content to match my individual travel needs and interests.	3.84	0.725

Table 4.5 showed that respondents generally agreed smart tourism technologies (STTs) offer ‘personalization’ in services or information. Mean scores for the five items ranged from 3.84 to 4.14 on a five-point scale, indicating overall positive perceptions. The highest mean was for “STTs recommend activities, attractions, or services based on my preferences and past behaviour” ($M = 4.14$, $SD = 0.82$). The lowest mean was for “STTs allow me to adjust settings and content to match my individual travel needs and interests” ($M = 3.84$, $SD = 0.73$), showing slightly less agreement on customizable features. Standard deviations between 0.73 and 0.82 indicate relatively consistent responses among participants.

v) Security

Referring to Table 4.6, respondents expressed generally positive views of the security structures of smart tourism technologies (STTs). Mean scores for the five items ranged from 3.86 to 4.08 on a five-point scale, reflecting a favourable overall perception. The highest mean was recorded for “STTs use secure systems to prevent unauthorized access to my data” ($M = 4.08$, $SD = 0.83$), highlighting confidence in data protection. The lowest mean was for “STTs keep safe my private and personal information” ($M = 3.86$, $SD = 0.89$), indicating slightly lower but still positive agreement regarding information protection. Standard deviations between 0.79 and 0.89 suggest a moderate level of consistency in responses.

Table 4.6: Descriptive Statistics for Security Dimension

Items (Security)	Mean Score	Standard Deviation
STTs keep safe my private and personal information.	3.86	0.891
STTs protect my privacy and ensure the confidentiality of my transactions.	3.97	0.817
STTs are trustworthy and reliable.	4.06	0.787
STTs use secure systems to prevent unauthorized access to my data.	4.08	0.825
STTs provide clear information about how my private data is placed and used.	4.03	0.815

Tourist Satisfaction

Respondents demonstrated a high level of satisfaction with their overall experience using smart tourism technologies (STTs) at visitor attractions within the Klang Valley region (Table 4.7). Mean scores across the seven measurement items ranged from 4.05 to 4.20 on a five-point scale, signifying strong agreement and consistently positive evaluations of STT use during visits. The highest mean was observed for “Overall, I am satisfied with experience and service quality provided by STTs” ($M = 4.20$, $SD = 0.72$), indicating that participants valued both the functional performance and the service quality associated with these technologies. The lowest mean, recorded for “I will speak favourably about STTs and post positive reviews or comments on social media” ($M = 4.05$, $SD = 0.80$), remained above the neutral midpoint, suggesting that visitors were still inclined to share and recommend their positive experiences. Results show satisfaction is not limited to immediate use of STTs but extends to behavioural intentions such as recommending, revisiting, and incorporating STTs into future travel planning. Standard deviations from 0.68 to 0.80 demonstrate relatively consistent perceptions of satisfaction among the respondents.

Table 4.7: Descriptive Statistics for Tourist Satisfaction

Items (Tourist Satisfaction)	Mean Score	Standard Deviation
I am satisfied with my experience using STTs at visitor attractions in Klang Valley.	4.11	0.748
I am pleased to use STTs when visiting attractions in Klang Valley.	4.12	0.729
I will recommend the use of STTs to my family, friends, and peers.	4.11	0.724
I will share my positive experiences with STTs with my family and friends.	4.18	0.680
I will speak favourably about STTs and post positive reviews or comments on social media.	4.05	0.796
When planning future visits to tourist attractions, one of my main motivations will be the availability of STTs.	4.12	0.753
Overall, I am satisfied with the experience and service quality provided by STTs.	4.20	0.724

Hypothesis Testing

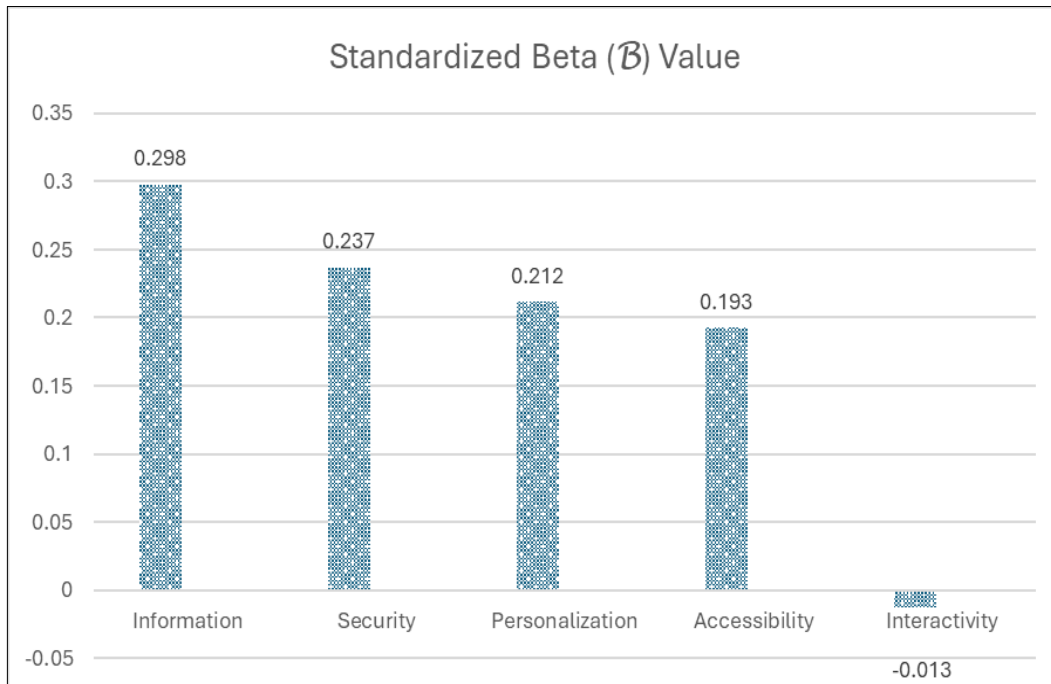
Table 4.8: Regression Analysis

Hypothesis	Predictor (Independent Variable)	β (Standardized Coefficient)	t-value	p-value	Result
H1a	Information $\rightarrow$ Tourist satisfaction	0.298	4.750	<0.001	Supported
H1b	Accessibility $\rightarrow$ Tourist satisfaction	0.193	2.731	0.006	Supported
H1c	Interactivity $\rightarrow$ Tourist satisfaction	-0.013	-0.172	0.864	Not Supported
H1d	Personalization $\rightarrow$ Tourist satisfaction	0.212	2.773	0.006	Supported
H1e	Security $\rightarrow$ Tourist satisfaction	0.237	3.647	<0.001	Supported

Note. Dependent variable: Tourist satisfaction. Model summary: $R^2 = 0.634$

Multiple linear regression was directed to examine the influence of the five smart tourism technology (STT) dimensions: information, accessibility, interactivity, personalization, and security on tourists' satisfaction. The regression model described 63.4 % of the variance in tourist satisfaction, signifying that the proposed dimensions collectively deliver a strong explanatory context. As shown in Table 4.8, Information ($\beta = 0.298$, $t = 4.75$, $p < 0.001$), Accessibility ($\beta = 0.193$, $t = 2.73$, $p = 0.006$), Personalization ($\beta = 0.212$, $t = 2.773$, $p = 0.006$), and Security ($\beta = 0.237$, $t = 3.647$, $p < 0.001$) had significant effects on tourist satisfaction, supporting H1a, H1b, H1d, and H1e, respectively. Interactivity ($\beta = -0.013$, $t = -0.172$, $p = 0.864$) was not significant, so H1c was not supported. Among the predictors, Information emerged as the strongest positive determinant of tourist satisfaction, followed by Security, Personalization, and Accessibility, while Interactivity had a negligible negative effect and was statistically insignificant. Figure 4.0 below shows the bar chart ranking the predictors of tourist satisfaction by their standardized beta (β) values.

Figure 4.0: Standardized Beta (β) Values



The interpretation of the hypothesis findings is outlined in the following discussion:

H1a: Information $\rightarrow$ Tourist Satisfaction (Supported)

The evidence revealed that information has a positive impact on tourist satisfaction ($\beta = 0.298$, $t = 4.750$, $p < 0.001$). The above finding supports the contention that adequate amounts of accurate, relevant, and timely information have a critical role in enhancing tourists' overall experience. Tourists rely highly on STTs to gain information on places, directions, facilities, and cultural information. When information was perceived as clear and reliable, uncertainty decreased and confidence in the decision-making process increased, ultimately leading to greater satisfaction. This conformed with past studies on information system quality or information quality as a significant antecedent of satisfaction for e-tourism and virtual settings (Masri & Rozi, 2020; Yoo, Lee, & Atamja, 2023).

H1b: Accessibility $\rightarrow$ Tourist Satisfaction (Supported)

Ease of accessibility was also found to have significant effects on tourist satisfaction ($\beta = 0.193$, $t = 2.731$, $p = 0.006$). This reflected tourists' appreciation for platforms and applications that are easy to use, robust, and accessible on various devices. Ease of accessibility in a system makes tourists able to utilize STTs without being restricted by technical limitations, making them more convenient and efficient in travel. This also aligned with existing research showing that ease of use and usability (components of e-service quality) are intrinsic predictors of valuable user experiences (Rahahleh et al., 2020).

H1c – Interactivity $\rightarrow$ Tourist Satisfaction (Not Supported)

Contrary to the hypothesis in view, interactivity was not observed to have a significant effect on tourist satisfaction ($\beta = -0.013$, $t = -0.172$, $p = 0.864$). This means that although STTs are able to provide interactive elements (chat, dynamic UI, real-time feedback), these may not necessarily translate into heightened satisfaction. Perhaps the reason is that tourists may prioritize fundamental functionality such as information, safety, and personalization over interactivity. Some research restrained that interactivity can in reality increase complexity or cognitive load, and therefore reduce user satisfaction (Qatawneh et al., 2023). In this regard, visitors might perceive interactivity as less important in relation to accurate information and trust in the system.

H1d: Personalization $\rightarrow$ Tourist Satisfaction (Supported)

The results showed that personalization positively affects tourist satisfaction ($\beta = 0.212$, $t = 2.773$, $p = 0.006$). Personalized recommendations, content, and adjustable settings enhance relevance and usefulness of STTs. This was in line with expectations that modern users desire systems tailoring to their own tastes. Scholars have hypothesized that personalization enhances engagement and perceived value since it makes customers feel better understood (Qatawneh et al., 2023).

H1e: Security $\rightarrow$ Tourist Satisfaction (Supported)

Security was also identified as a significant predictor of tourist satisfaction ($\beta = 0.237$, $t = 3.647$, $p < 0.001$). Tourists place considerable value on secure transactions and the safety of their information when using STTs, especially when they make payments and share their personal details. A secure environment generates confidence, reduces perceived risk, and increases trust, hence enhancing satisfaction. This was in line with the role of privacy, security, and e-service quality in influencing tourism and e-service satisfaction and trust (Rahahleh et al., 2020; Qatawneh et al., 2023).

CONCLUSION

This study examined the influence of five dimensions of Smart Tourism Technologies (STTs): information, accessibility, interactivity, personalization, and security on tourist satisfaction at Klang Valley destinations. Surveys of 200 tourists indicated that information, accessibility, personalization, and security significantly enhanced satisfaction, whereas interactivity did not. Based on the demographic profile, the predominantly young, well-educated, and moderate-to-higher income respondents were likely familiar with digital tools, which may explain their emphasis on functional attributes such as accurate information, seamless access, tailored recommendations, and secure transactions. Interactivity appeared less critical, reflecting a focus on utility over engagement, consistent with the Technology Acceptance Model, studies on technology overload, and cultural preferences for trust and reliability in collectivist societies.

Despite the convenience sampling and geographically bounded sample, the findings offer practical and policy implications. Destination managers should prioritize foundational STT competencies, ensure accurate and timely information, provide convenient connectivity, maintain data security, and tailor services to visitor preferences. Interactive features should be introduced selectively, once core functions are trusted and established. At the policy level, tourism authorities should enhance digital infrastructure and enforce minimum standards for information quality, accessibility, and security across providers. Future research should employ probability sampling, cover additional regions, and conduct cross-cultural and longitudinal studies to examine evolving technology adoption, cultural values, and the role of interactivity in tourist satisfaction.

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