International Journal of Hospitality and Tourism Systems
Volume 17 Issue 4 2024
ISSN: 0974-6250 (Print)

doi: https://doi.org/10.21863/ijhts/2024.17.4.006

Hospitality & Tourism Systems

User Proficiency as a Bridge to Memorable Experiences: Investigating the Mediating Role on Smart Tourism Technologies in Religious Destinations

Rashmi R.*, Shivakami Rajan, Mohinder Chand***, Sweety Jamgade******

Abstract *Religious tourism has benefited significantly from smart tourism technology, enabling tourists to enrich their tourism experience seamlessly. Extant literature vouches for these benefits, but more research is necessary to examine the influence of user proficiency in using smart tourism technologies to create memorable experiences. This research study investigates this gap, drawing upon Kolb's learning theory to understand the interplay of the indicators of smart tourism technologies, user proficiency, and the creation of memorable experiences in religious tourism. The quantitative data was collected through a structured questionnaire with a five-point Likert scale using a purposive sampling method from 280 religious visitors during their course visit to the religious destination from six religious sites in Karnataka State, India. Awareness programs, user-centric training programs and personalised and curated solutions tailored to suit the user's needs, knowledge and technological usage experiences, paving the way for creating more immersive, personalised encounters in religious tourism to create a sense of satisfaction in the tourist destination visit. By identifying the mediating role of user proficiency, this study provides valuable insights to industry, technology partners and policymakers.*

Keywords: *Memorable Experience, Smart Tourism Technology, Personalized Experience, User Proficiency*

INTRODUCTION

The European Union describes the concept of smart tourism as an ICT-tools-based tourist destination facilitating easy access to tourism and hospitality products, services, spaces and tourist experiences. Today, tourists are more knowledgeable about the different aspects of tourism products and are looking for new ways to improve their overall experiences using information and communication technology (ICT). Additionally, mobile technology helps travellers plan, buy, and smartly improve their trips (Wang et al., 2016), driving them to work together with other stakeholders in the destination to create value together. Religious tourism is a distinctive sector within various disciplines unaffected by weather conditions. Tourism to religious centres and cities remains steady regardless of seasonal or climatic changes, unlike other forms of tourism. The pilgrimage plays a crucial role in this specific type of tourism (Khoshkam et al., 2023). This destination offered astute solutions to appeal to individuals who desired minimal or restricted involvement while obtaining effective services (Li et al., 2022). The COVID pandemic has ensured that people manning religious destinations could understand the importance of improving their information and communication technology (ICT) offerings and infrastructure (Zhao et al., 2023).

* Assistant Professor and Research Scholar, Department of Commerce, Faculty of Management and Commerce, Ramaiah University of Applied Sciences, Bengaluru, Karnataka, India. Email: rashmi.co.mc@msruas.ac.in
** Professor, Faculty of Management and Commerce, Faculty of Management and Commerce, Ramaiah University of Applied Sciences, Bengaluru, Karnataka, India. Email: shivakamirajan.ms.mc@msruas.ac.in
*** Professor, Department of Tourism and Hotel Management, Kurukshetra University, Haryana, India. Email: mchand@kuk.ac.in
**** Associate Professor, Faculty of Hospitality Management and Catering Technology, Ramaiah University of Applied Sciences, Bengaluru, Karnataka, India. Email: sweety.fo.hc@msruas.ac.in

With further development of AI, automation and social media advancements coupled with advanced Information and Communication Technology (ICT), visitors of sacred religious destinations can participate in unique and exclusive experiences (Mahdiloo et al., 2022) at this destination. Buhalis (2013) pinpoints that cutting-edge tourism technologies in emerging and intelligent travel destinations provide these tourists with various transportation options, enabling them to modify their itineraries based on constantly changing conditions and their personal preferences. The use of smart tourism technologies (STT) has, thus, proved to provide a positive impact on the overall experience of tourists during their visits, which in turn leads to an increased likelihood of those tourists advocating for the destination through word-of-mouth (WOM) recommendations (Torabi, 2022). WOM would be possible only if the tourist in question is proficient. A deep relationship exists between the tourist's user technological proficiency with STTs (Koo, 2022) and their destination visit experience. Elshaer *et al. (2021)* pinpoint that a religious tourist can enhance their experiences and satisfaction through STTs, depending on their proficiency and skills. So, a highly skilled STT user can tap into the technologies' fullest potential to create the most memorable and favorable experiences when visiting destinations (Koo, 2022).

Accessibility, informativeness, interactivity, and personalization in the technology are the four categories into which No et al., (2015) divided STT attributes to analyze the effects of STTs on tourist destinations. Tourists can experience things that would be easier to do with these technologies, thanks to these features, which include high-quality information provided, easy access to information, improved stakeholder relationships, and the versatility of STTs (Huang, 2017). Urban and rural regions in developing nations are quickly adjusting to the most recent advancements in smart technologies, despite most studies concentrating on developed nations (Jeong, 2020). Modern smart technologies for personal matters are frequently used by citizens in several countries (Yoo, 2017). Leveraging STTs in developing countries has increased significantly following the COVID-19 outbreak, according to a large body of evidence (Li et al., 2017). Since religious destinations differ from traditional or smart urban destinations, visiting such destinations offers a different experience (Mahdiloo, 2003). Research is scarce about how smart technology features affect visitors' experiences at religious sites (Balakrishnan et al., 2021). So, the primary purpose of this study is to examine how STT characteristics affect travellers' feelings of place at religious sites. Complementary research has shown that distinct digital services in rural areas improve tourist satisfaction (Ng et al., 2022). However, the effects of implementing STTs in religious destinations on tourist experiences and satisfaction have yet to be thoroughly studied. This research fills this significant gap in the existing literature. Using STTs necessitates specific user expertise for tourists to use these technologies and achieve their trip objectives effectively (Huang et *al.,* 2017). Thus, the second goal of this study is to evaluate how user competency affects the relationship between STT features and travellers' experience and satisfaction. Additionally, this study aims to identify and analyse the specific impact of STT utilisation on tourist experiences and satisfaction within the particular context of religious destinations. It builds on research that shows the positive influence of STT experiences on tourist satisfaction, revisits intentions, and positive destination recommendations (Aziset al., 2020).

LITERATURE REVIEW

Smart Tourism Technology

Artificial intelligence (AI) and other innovative, intelligent technologies significantly improve tourism destinations' efficiency by enhancing tourism assets' management, increasing sustainable resource utilisation, and creating a more engaging experience for residents and tourists through personalised recommendations. These amalgamations involve an ecosystem of infrastructure, software, hardware, highly technically skilled employees and staff, collaborated stakeholders, enablers equipped with training, creativity, diversity, and government and policymakers (Boes et al., 2016). Therefore, innovative technology helps religious places attract tourists more effectively and handle their tourist resources, encouraging their full and long-term use, thereby raising the standard of living for locals and visitors (Zhang et al., 2022). Smart Tourism Technologies (STTs) digitise the payment processes and the system for the services (Gretzel et al., 2015).

Travel agencies (Online), blogs, tourism websites, destination marketing websites, social media, smartphones, and smartphone applications are just a few examples of the many online tourism applications and databases that fall under the umbrella of STTs (Huang, 2017). In order to increase the usability and utility of STTs, these technologies are distinguished by four characteristics: personalisation, interactivity, accessibility, and informativeness (Madu et al., 2002). With the help of STTs, travellers can access information inside and outside tourist destinations. The term "accessibility" translates to the accessibility of digital tourism resources to the users, which are readily available for utilisation by travellers (Huang *et* al., 2017). As the STTs are so widely available, some research from developed nations contend that accessibility is not a deciding factor; however, other studies highlight the critical role that accessibility plays in enhancing visitors' unforgettable experiences, particularly in developing country areas where STT accessibility is limited (Mitala et al., 2021).

Smart Tourism Destination

Integrating technology into tourism destinations requires the cooperation of various stakeholders through an advanced technology-driven framework. This system facilitates the effective exchange of tourism data by employing sophisticated machine learning algorithms. This enhances the tourism experience by empowering stakeholders to make well-informed decisions grounded in data analytics (Buhalis & Amaranggana, 2014). Consequently, intelligent tourism destination implementation can improve the whole tourism sector-visitors, tourism entities, and enablers with efficient, streamlined information access through a centralised and unified data platform by utilising cutting-edge technology (Zhu et al., 2014). An additional trigger facilitating the quick creation or implementation of a smart tourism destination is the concept of a Smart City (Buhalis & Amaranggana, 2013), where strategic and synergistic integration of intelligence, interconnections and instrumentation together enables data sharing of real-time data through the usage of sensors in the urban infrastructure. Seamless access to data (Kuru & Ansell, 2020) among City's stakeholders (Vicini et al., 2012) and tourists as city visitors for data on public transportation (Buhalis & Amaranggana, 2013) will enable tourists to have a hassle-free experience. Three crucial components characterise smart tourism destinations: the first is the user interface, which facilitates the end-user services; the second one is the cloud services; and the third one is the Internet of Things (Buhalis et al., 2023). Cloud services offer access through internet platforms like applications, software programmes, websites and browsers (Wang et al., 2016). Access to tourists is provided by wireless connections, Wi-Fi, telecom interfaces, and payment methods, all put together (e.g., mobile data and Wi-Fi) through supporting devices and applications.

Religious Destination

Many tourists always prefer religious destinations during and after the pandemic (Umukoro et al., 2020). Most of these destinations (religious destinations) needed more advanced technological infrastructure to meet the needs of tourists (Reisinger et al., 2019). The ICT infrastructure in these areas has undergone substantial upgrades. The enhancement occurred due to increased demand for visits to religious sites and tourists' expectations for consistent and dependable access to innovative smart tourism technologies (Zhu et al., 2019). Enhancement has led to the development of modern rural destinations that provide advanced facilities for travellers. As stated by extant researchers (Ugar & Akbiyik, 2020; Femenia et al., 2022; Olsen & Timothy, 2020; Khan et al., 2020), travellers' interactions with new technologies when they arrive at different locations have changed dramatically due to the pandemic's rapid effects on economics, technology, and social dynamics. There has been a notable shift in stakeholders' attitudes before and after travel after the pandemic, suggesting travellers' growing dependence on intelligent electronic devices (Pencarelli, 2020). To strengthen the integration of intelligent technologies, it is thus, crucial that both managers and policymakers in these locations, modify and adjust their approaches to correspond with the changing expectations and demands of stakeholders (Goo et al., 2022).

Tourist' Experience

Pai et al. (2020) demonstrate a correlation between enhanced visitor experiences and the accessibility of informative STTs in their research. They posit that customised STTs that provide comprehensive and reliable destination information empower visitors to gain augmented knowledge, thereby facilitating a more seamless and enjoyable visit. This addresses travellers' concerns about getting accurate and trustworthy information, which has become increasingly important in recent times, underscoring the significance of informativeness.

There is a growing trend among travellers to rely on smart technological systems for destination information, particularly in remote religious sites with limited access to pertinent data. Smart technologies have evolved as an indispensable instrument that facilitates access to vital information and enriches their experiences in areas that are geographically and culturally distinct (Xiang et al., 2015). Consequently, it is thus vital and imperative to optimise the informativeness of STTs for all religious tourist destinations. Further, the interactive nature of STTs creates an environment for active participation amongst its users (Dorcis et al., 2019), creating a solid relationship that is beneficial to the user upon reaching their destinations, as this symbiotic exchange enables precise user-designed, curated information that suits their specific needs and context. Therefore, an informative relationship in STTs ultimately enriches the tourists' overall travel experience. Using information, the tourists will be empowered to communicate with folks outside their destination and share virtual tourism-related content in the rural areas, enabling them to share and enrich their travel experience and overcome interaction challenges, particularly in developing nations (Lamsfus et al., 2015). In addition to informativeness, another area of growing concern among tourists regarding the availability of accurate and reliable information is addressed by personalisation. Tourists can curate specific itinerary information in line with their pre-determined itinerary, fulfilling their unique needs (Volchok et al., 2022).

Mediating Role of User Proficiency

Bassellier *et al.* (2004) stress the importance of user expertise and knowledge in operating speech-to-text systems efficiently. Nevertheless, a more advanced level of user expertise is required to generate genuinely inventive and ingenious applications of these technologies (Koo et al., 2015). Munro *et al.* (1997) define user competency in Speech-to-Text technology as comprising three fundamental components: in-depth knowledge, broad knowledge, and the ability to employ that knowledge effectively. The millennial generation's familiarity and skills with technology usage proficiency enable them to experience travel seamlessly (Rathinan & Selmat, 2017). Religious tourists require a distinct set of skills that enhance their ability to properly interact with intelligent technologies, as Koo et al. (2015) mentioned. According to Jeong et al. (2020), individuals can improve their experiences by developing their skills and proficiency in utilising Smart Tourism Technologies (STTs). Marcolin et al. (2020) suggest that religious Travellers with the necessary knowledge and skills to utilise Speech-to-Text Technologies (STTs) can fully utilise the advantages of these technologies when preparing for or during their journeys. These religious tourists skilled in technology are ready to have a distinct and improved travel experience compared to other visitors (Koo et al., 2015). Travellers who make use of STTs report higher levels of satisfaction from their trips and are consequently more likely to return (Wang et al., 2022). Further, it is argued that a visitor's satisfaction and likelihood of returning is known to increase upon obtaining superior travel Experience (Choi et al., 2021). One aspect of knowledge breadth is the ability of the user to use the tools and knowledge to meet their needs effectively. That explains how they can use various STT-related resources and skills to accomplish their goals. Users with a wide range of skills can easily navigate the different features and functionalities, by making the most of such offerings.

On the other hand, depth of knowledge indicates a user's proficiency and mastery over a particular technology (Moore et al., 1991). It relates to their thorough comprehension of the technology's nuances, features, and underlying workings. Deeply knowledgeable users can maximise a given STT by taking advantage of its features to meet their unique needs better (Marcolin et al., 2000). The most creative and innovative way to use this technology that goes beyond standard usage patterns is finesse, the third dimension of user proficiency (Gravill et al., 2006). Intelligent problem-solving abilities are demonstrated by adept users who can modify and personalise the technology to fit their specific requirements and tastes. The amalgamation of three aspects of user proficiency—depth, breadth, and finesse—allows users to optimise the potential of Smart tourism Technologies. Users can fully realise the potential of STTs and create unforgettable travel experiences by developing a deep understanding, expertise, and creativity (Zhang et al., 2022). Given the widespread consequences of the COVID-19 pandemic, user competency in using STTs became especially important for tourists (Torabi et al., 2023). Travellers proficient in STTs could effectively limit their physical contact with others in the face of elevated health and safety concerns (Xie et al., 2022). These travellers navigated their experiences confidently, reducing potential risks associated with close encounters using capabilities like contactless transactions and real-time information updates (Torabi et al., 2023). Due to their recognition of the importance of STTs in enabling more convenient and safe travel experiences, many tourists are actively involved in increasing their proficiency with them during the pandemic (Gravill et al.,2006). This increased awareness and quest for user competence highlighted the importance of digital competence along with flexibility in the tourism domain (Cheng et al., 2022), emphasising the pivotal catalyst role technology plays in mitigating the multifarious challenges that the tourists experience, and fortifying security measures, streamline the operational process by leveraging cutting-edge technologies (Aoun et al., 2023), therefore technologies leveraging fingerprints, eye-iris patterns, facial recognition and other biometric features (Ashbourne, 2014), seamless verifications of travellers identity enhances overall safety and curtails nefarious activities.

The ability of users to effectively use STTs has a profound impact on the experiences and the satisfaction that tourists have (Yoo et al., 2017). It is crucial, therefore, to fully understand the intricate relationship between the tourist experience led by religious tourism facilitators at holy sites and the ensuing contentment to improve the visitor's satisfaction and overall experiences and contentment (Yu et al., 2023). Since it is assumed that user proficiency in utilizing STTs has a mediated relationship between the STTs attributes and tourists' experience along with satisfaction (Ng, 2022), it is regarded as a mediating variable in this study (Koo et al., 2015).

Memorable Tourist Experience

Tourist experiences are defined as the tourist's interaction with the tourist's destination (Stamboulis & Skayannis, 2003). In their research study of modelling tourist experience, Cole and Scott (2015) posit that tourist experiences combine four dimensions: performance quality, experience quality, overall satisfaction and revisit intentions. In this research study, the travel experiences made possible by STTs, considered unique and highly valued, are referred to as tourist experiences (Torabi et al., 2022). Orden-Mejía et al. (2022) state that by embracing and utilizing STTs, tourists improve their own travel experiences since they learn about the scope and depth of tourism offerings (Chang,

2022). With a plethora of information on tourism activities, travellers can fully immerse themselves in the location, creating memorable and enduring experiences (Jeong et al., 2020). Religious tourists can utilize STTs more effectively to record memorable experiences using STTs in destinations of developing economies (Ng et al., 2022). Thus, Digital tools are crucial in developing countries' travel destinations, as these destinations generally tend to have less sophisticated digital services (Wan, 2018). Further, documenting more memorable moments from a visit increases visitors' satisfaction and desire to return (Um et al., 2021). Moreover, tourists engaging in STTS at multiple stages of their tourist itinerary experience higher satisfaction levels, leading to enriched, memorable travel experiences (Lee et al., 2018). Therefore, satisfying experiences positively impact future decision-making and satisfaction towards a particular location (Molina-Collado et al., 2022).

Research Questions and Hypothesis

Based on the above literature, the following research questions are developed.

- Research Question 1 - To what extent does Smart Tourism Technology (STTs) influence the user proficiency and technology adoption of tourist?
- Research Question 2 - Will a tourist's user proficiency potentially mediate the relationship between usage and integration of Smart Tourism Technologies on tourist Memorable experience (ME).
- Research Question 3 - Will a tourist's user proficiency potentially mediate the relationship between usage and integration of Smart Tourism Technologies (STTs) and formation of memorable travel experience?

Hypotheses for RQ 1 are as follows:

- *Hypothesis 1 (H1):* The accessibility of Smart Tourism Technology (STTs) positively impacts the user proficiency of the tourist.
- *Hypothesis 2 (H2):* The informativeness of Smart Tourism Technology (STTs) positively impacts the user proficiency of the tourist.
- *Hypothesis 3 (H3):* The interactivity of Smart Tourism Technology (STTs) positively influences the user proficiency of the tourist.
- *Hypothesis 4 (H4):* The personalization of Smart Tourism Technology (STTs) positively influences the user proficiency of the tourist.

Hypotheses for RQ 2 are as follows:

- *Hypothesis 1a (H1a):* The accessibility of Smart Tourism Technology (STTs) positively impacts the tourist's memorable experiences.
- *Hypothesis 2a (H2a):* The informativeness of Smart Tourism Technology (STTs) positively impacts the tourist's memorable experiences.
- *Hypothesis 3a (H3a):* The interactivity of Smart Tourism Technology (STTs positively impacts the tourist's memorable experiences.
- *Hypothesis 4a (H4a):* The personalization of Smart Tourism Technology (STTs positively impacts the tourist's memorable experiences.

Hypothesis for RQ3 is as follows:

- *Hypothesis 5 (H5):* User tech proficiency mediates the relationship between Smart Tourism Technology (STTs) features and tourist's memorable experience.

THEORETICAL FRAMEWORK AND RESEARCH MODEL

Learning is a process which enables proficiency specifically to technology and the application (Wu et al., 2017). STT integrates new technologies, making it necessary for tourists to embrace them in their journey, thus motivating them to acquire newer, more profound knowledge of technologies. Technology usage and technology adoption thus play significant roles in enhancing the tourism experience and helping them to create a memorable experience (Neuhofer et al., 2012; Huang et al., 2016; Buhalis & Amarangganana, 2015; Buhalis et al., 2019). At the core of this research study, Kolb's experiential learning theory is entwined with smart tourism technology and travellers' memorable experiences. Kolb's description of learning from an experiential perspective states that knowledge develops from the learning process where experiences are transformed. The theory postulates engaging learners with hands-on experience, which creates opportunities for reflection, and the newfound learning could be applied in different contexts. The acquired knowledge is reinforced by a tangible experience that aligns with this knowledge. Kolb's theory has four cyclical stages at the core of the learning experience: concrete experience, reflective observation, abstract conceptualization and active experimentation. This means that by leveraging STT tools effectively, the tourists create immersive, memorable experiences. Kolb's experiential learning theory gives a framework for understanding how tourists learn to intensify their memorable experiences through the nuances of STT usage. Hence, this study adopts the experience cycle given by Kolb (1984), which emphasises experience as the critical enabler of knowledge and is at the heart of the learning process. The cycle adopted in this study is shown in Fig. 1. It explains how Kolb's learning theory is helpful in developing more hands-on learning opportunities for tourist.

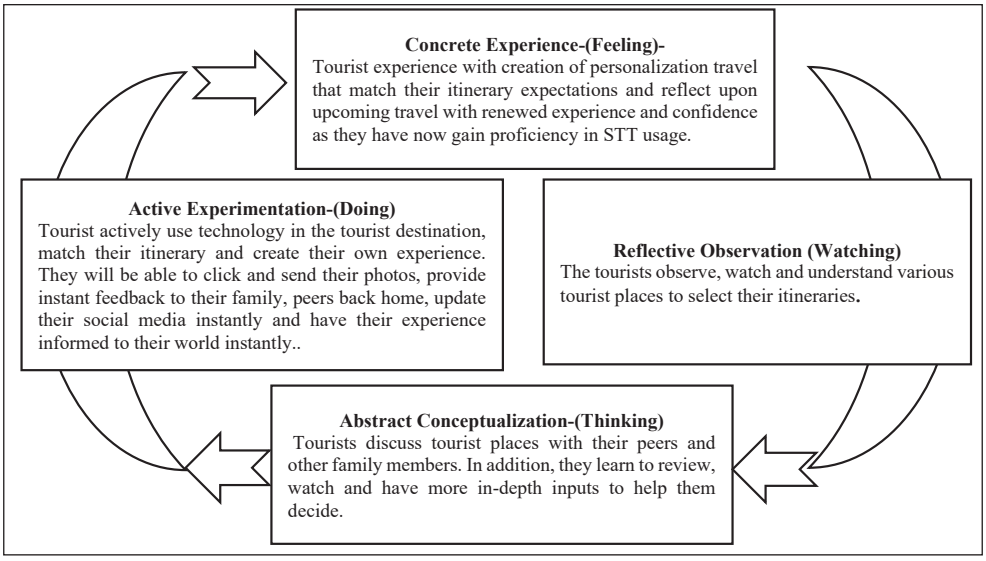


Fig. 1: Adapted Kolb' Learning Cycle in Smart Tourism

Smart Tourism Technologies (STTs) on the experience and gratification of tourists. The conceptual framework functions developed for the research study incorporating Kolb's learning theory is given below in Fig. 2. This conceptual framework serves as the foundation for the above derived hypotheses. The model has two levels - the initial tier (H1-H4) examines the direct impacts of STT characteristics (namely accessibility, interactivity, informativeness, and personalization) on the Memorable experience of tourists while the second level (H5) investigates the role of user proficiency in utilizing STTs as a mediator.

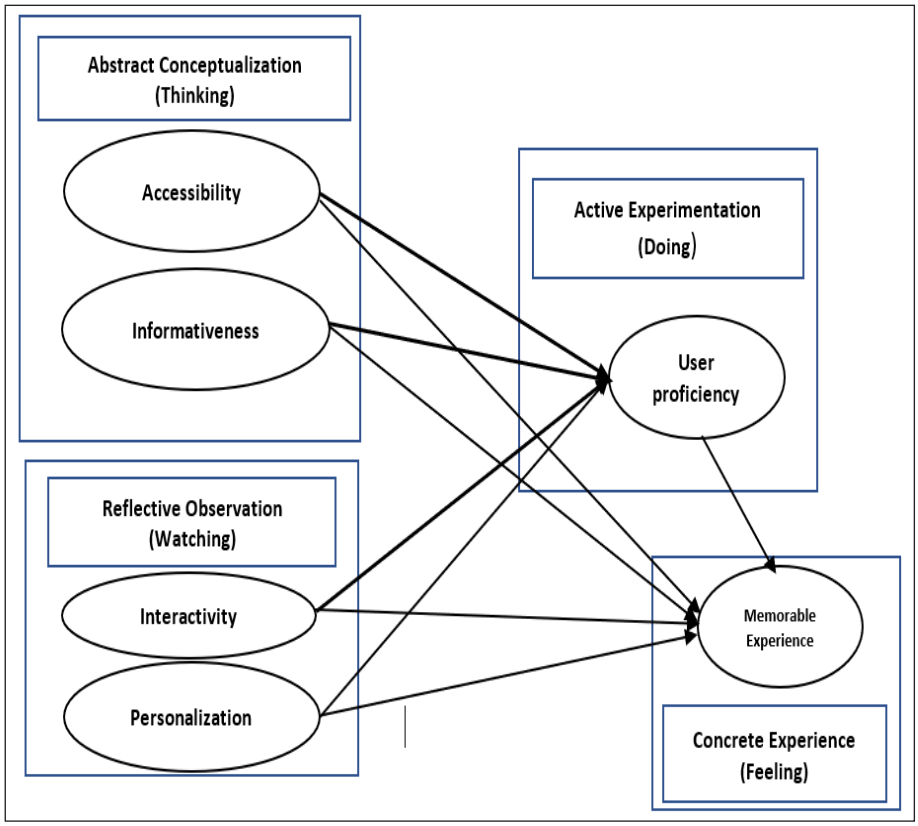


Fig. 2: Adapted Kolb' Learning Cycle in Smart Tourism

RESEARCH METHODS

This quantitative research uses a purposive sampling method in line with choosing specific criteria critical for data collection (Etikan, 2016). It is conducted in religious temple sites in Karnataka like:

- Kukke Subramanya Temple,
- Shringeri Sharadamba Temple,
- Udupi Sri Krishna Temple,
- Sri Manjunatha Swamy Temple, Dharmasthala,
- Sri Chamundeshwari Temple, Mysuru,
- Mookambika Temple, Kollur,
- Murudeshwar Temple.

These temples are some of Karnataka, India's few major religious sites. Many private agencies, including government travel agencies, have coordinated efforts to promote innovative technology in these regions. A quantitative framework design was adopted to test the conceptual research model that had been developed. The constructs under study are accessibility, personalization, interactivity, informativeness, and memorable tourist experiences. The variable- user proficiency is a construct with breadth and depth of knowledge and finesse as its dimensions and serves as a mediator. The target market comprised people who visited these popular religious destinations in Karnataka.

Questionnaire

A structured questionnaire with a five-point Likert scale was developed for this study. This questionnaire was then reviewed and revised by an expert panel of four tourism professors. The questionnaire was designed using the approved statements of the six constructs with a five-point Likert scale as the response for these with assigned values from 5" Strongly Agree" to 1 "Strongly Disagree". The study used six constructs in the questionnaire with details, as shown in Table 1.

Table 1: Showing the Constructs-Variables and Their Sources

Variable	Indicators	Reference
Accessibility	Acc1: In the religious destinations, I was able to access the potential of smart technologies anytime and anywhere. Acc2: In this religious destinations, smart tourism technologies (e.g., Wi-Fi, smart telephone services, smart technologies in accommodation, etc.) were easily accessible. Acc3: In these religious destinations, I could easily gain access to smart tourism technologies via other relevant websites.	Yoo, C.W et al. (2017) Balakrishna, J et al. (2021) Orden-Mejia et al. (2022) Torab, Z et al. (2022)
Interactivity	Int1: Smart tourism technologies facilitated my participation in review, feedback, Q&A sessions, and fostered interaction with fellow visitors during my visit to religious destinations. Int2: Throughout the religious tourism, I effortlessly disseminated information about religious tourism through smart tourism technologies. Int3: During the journey, I seamlessly engaged with others via smart tourism technologies.	Yoo, C.W et al (2017) Azis, N et al. (2020) Torab, Z et al. (2022)
Information	Info1: The information I receive through smart tourism technologies greatly enhances my travel experience at religious destinations. Info2: Smart tourism technologies empower me with comprehensive and dependable travel guidance, ensuring smooth journeys across the religious destinations. Info3: Smart tourism technologies play a significant role in alleviating my worries during travel to the religious destinations.	Yoo, C.W et al., (2017) Azis, N et al., (2020) Balakrishna,J et al., (2021) Torab, Z et al., (2022)
Personalization	Per1: Smart tourism technologies curated optimal routes and information tailored to the prevailing conditions during my trip to religious destinations. Per2: Smart tourism technologies empowered me to personalize information searches pertaining to religious tourism destinations. Per3: The personalized information delivered through smart tourism technologies addressed my specific needs related to tourism and travel to religious destinations.	Yoo, C.W et al (2017) Balakrishna,J et al.(2021) Torab, Z et al. (2022) Ng, K.S.P et al., (2022)
User Proficiency	Up1:I possess the required skills and knowledge to utilize Smart Tourism Technology Effectively. Up2: I have sufficient proficiency to independently navigate smart tourism technologies. Up3: I am well versed at installing new applications related to smart tourism technologies on my mobile phone.	Bassellier, G et al., (2004) Gravi, H et al., (2006) Koo. C et al., (2015)
Memorable Experience	Me1: The smart tourism technology applications in the religious destinations facilitated in attaining memorable experiences for me at the religious destination.	Torab, Z et al., (2022) Yang, X et al., (2022)

Sampling and Data Collection

G*Power (version 3.1.9.7) software calculates the required minimum sample size. Keeping the effect size at the significant level of 0.05 and the power of 0.95, an a priori power analysis was run. The suggested minimum sample size needed for the research study model is 220. The population in this study is the tourists of the religious temples of Karnataka. The purposive sampling technique used in this study is purposive sampling. The data collected took place between October 2023 and November 2023. The structured questionnaire was distributed to tourists in the religious temples. Around 356 survey questionnaires were disseminated among the tourists in the religious destinations. The tourists were requested to respond to the statement stating their agreement or disagreement via a five-point Likert scale ranging from 1 strongly disagree to agree 5=strongly. From the completed survey questionnaires, 280 questionnaires were found appropriate and usable for analysis, with a response rate of 78.65%, exceeding the 70% response rate free from response error (Nutty, 2008).

ANALYSIS AND FINDINGS

To rule out the chance of Common method bias (CMB), all the study variables were assessed simultaneously in SPSS using Harman's single-factor test as recommended by Podsakoff *et al*. (2017). The results indicate that no single factor explained more than 34.35% of the variances among the variables, removing the possibility of the existence of CMB. After ascertaining the non-existence of standard method bias, Smart PLS (version 4) was used to analyze the data to test the conceptual research model developed using structural equation modelling (PLS-SEM) estimation.

Sample Assessment

Among the sample respondents of 280, 147 (52.5%) were male and 133 (47.5%) were female respondents. Among them, the majority were in the age group of 20-30 years (68, 24.29%), and 22.86% (64) were in the age group 15-20. There were 47 people (16.79%) above 50 years old and 54 people between 40 and 50 (19.29%). Concerning educational qualifications, it was found that the majority (127, 45.36%) were between matriculations and intermediary education, 69 (24.64%) graduates followed this, and then there were 47 (16.795%) respondents who had completed their masters. Lastly, 34 members (12.14%) were tourists who had not completed their matriculations. The descriptive details of the sample respondents are given in Table 2.

Table 2: Descriptive Statistics

Variables	Frequency	%
Employed	134	47.86
Unemployed	146	52.14
Regular user of STT		
Users	231	82.5
Non-Users	49	17.5
Total	280	100

Source: Primary data.

Measurement Model Assessment

The reliability of each indicator of the study, convergent validity, internal consistency reliability and discriminant validity (Hair et al., 2019) are shown in Table 3. Henseler et al. (2016) stated that the convergent validity of constructs is confirmed if the measured variables' outer loading indicators have a value >0.70 and the average variance extracted (AVE) values are higher than 0.5. Hair *et al*. (2011) consider a variable to be reliable when both their Cronbach Alpha (CA) and Composite Reliability (CR) values are more significant than 0.07.

Table 3: Measurement Model Results

Constructs	Loadings	CA	CR	AVE
Accessibility		0.706	0.779	0.542
ACC1	0.757			
ACC2	0.742			
ACC3	0.801			
Interactivity		0.731	0.836	0.631
Int1	0.862			
Int2	0.747			
Int3	0.768			
Information		0.757	0.854	0.661
Info1	0.813			
Info2	0.837			
Info3	0.787			
Personalization		0.871	0.921	0.795
Per1	0.856			
Per2	0.924			
Per3	0.894			
User Proficiency		0.906	0.941	0.842
Up1	0.894			
Up2	0.900			
Up3	0.958			
Memorable Experience				
Me1	1.00			

Source: Primary data.

Table 3 shows the results of the measurement model analysis. ACC from the study to achieve the validity and reliability of the research model. All the study variables exhibit acceptable threshold values. The Fornell-Larcker criterion- refer to Table 4, according to Hair et al., 2017, requires that for a variable to meet the Fornell-Larcker criterion, its correlation value with its respective construct must be greater than its correlation value with other constructs. Table 4 shows the results of the discriminant validity measures of the Fornell-Larcker Criterion, confirming that the variables used for the research study are valid and reliable for structure modelling analysis. These results indicate that with the discriminant reliability and validity established for the constructs under study, the model is suitable for further structural model testing.

Table 4: Fornell-Larcker Criterion Showing Discriminant Validity

Variables	ACC	INFO	INTE	ME	PER	UP
ACC	0.736					
INFO	0.418	0.813				
INTE	0.419	0.446	0.794			
ME	0.401	0.343	0.548	1		
PER	0.693	0.379	0.491	0.43	0.892	
UP	0.53	0.389	0.525	0.501	0.595	0.918

Source: Primary data.

Structural Model Analysis

The structural model examines the relationship among the study variables in the research model developed. The values of the goodness of fit indices (GoF), Coefficient of Determination (R2), Predictive relevance (Q2), effect size (F2) and path coefficients are considered (Hair et al., 2019). The coefficient of determination assesses the model's accuracy and indicates the model's adequacy of fit if it ranges between 0 and 1 (Chicco et al., 2021). From Table 5, the R2 values of the research construct range between 0 and 1, indicating the adequacy of model fit. The Goodness of Fit indices of the research model from the results (Table 5) is 0.620, which is above the threshold value of 0.36 as grouped by Henseler et al. (2016), indicating as significant indicating that the model has a high level of suitability and accuracy (Wang et al., 2016). Further, the Q2 values of 0.701 for user proficiency and 0.313 for memorable experience are positive, indicating better predictive performance for the model developed (Shmueli et al., 2016).

Table 5: Showing the Goodness of Fit Results

Variables	AVE	R^2	Q^2
Accessibility	0.542		
Information	0.661		
Interactivity	0.631		
Personalization	0.795		
User Proficiency	0.842	0.716	0.701
Memorable Experiences		0.394	0.313
Average score	0.694	0.555	
Goodness of Fit Sq.rt of AVE*R^2		0.620	

Source: Primary data.

The R2 values explain the percentage impact of the indicators on the construct. Hair et al. (2017) classify the effect and prediction of the exogenous variable on the endogenous variable between 0.19-weak, 0.33-moderate and 0.67 as significant. The R2 value of the construct -User Proficiency is 0.716, which indicates that the constructs-accessibility, Information, interactivity and personalization, together explain a large 71.6 percentage of the variance of User Proficiency while the R2 value of the construct Memorable Experience is 0.394 which indicates that the construct User Proficiency explains a moderate 39.4 percentage of the variance of the construct- Memorable Experience.

The F-square value (Table 6) indicates the extent of influence exogenous variables have on the endogenous variable. The variable Accessibility has a very negligible influence (F2=0.032) on the User Proficiency variable. In contrast, the variable Information has no influence (F2=0.001) but the variable Interactivity (F2=1.018) has a very strong influence, and Personalization (F2=0.088) influence is low.

Table 6: Showing the F-Square Values

Construct	F-Square
ACC -> UP	0.032
INFO -> UP	0.001
INTE -> UP	1.018
PER -> UP	0.088

Source: Primary data.

The Q2 value measures how well the research model predicts the endogenous variables- in simple terms- it shows the predictive relevance of the model. Table 7 shows the Q2 values of the two endogenous variables of the study- User Proficiency and Memorable Experience. A high Q2 value indicates high predictive relevance. The

model with the four constructs of Accessibility, Information, Interactivity and Personalization predicts the endogenous variable-user proficiency very well, as confirmed by the root mean square error (RMSE) value of 0.533, but the model with User Proficiency is a poor predictor of the memorable experience as evident with a very high RMSE value of 0.834

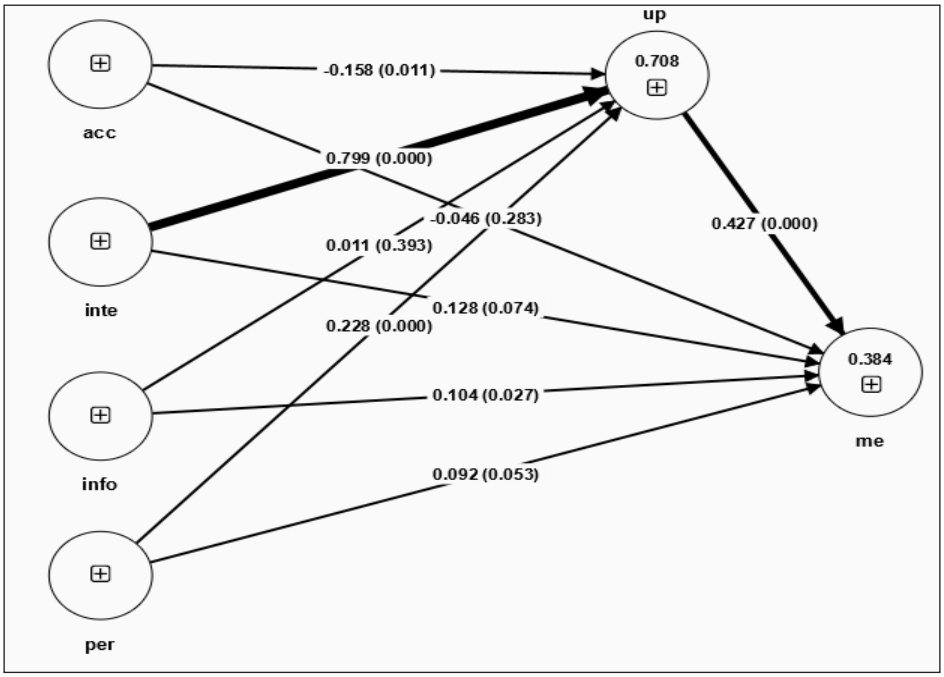
Table 7: Showing the Q-Square and RMSE Values

Construct	Q² Predict	RMSE	MAE
me	0.384	0.834	0.694
up	0.708	0.553	0.398

Source: Primary data.

Fig. 3 shows the results of the structural modelling executed using bootstrapping, with the objective of understanding the significance of the relationship between the variables under the study and the hypothesis formed. Hair et al. (2017) posit that hypotheses with a p-value less than 0.05 and a t-value of 1.96 can be accepted. Table 8 shows the results of the hypothesis testing.

The hypothesised relationships relevant to research question 1 are H1, H2, H3 and H4. As seen in Table e, the relationship between accessibility, interactivity and personalisation with user proficiency has a path coefficient of -0.158, 0.799 and 0.228 and a t-stat value of 2.269, 13.502 and 3.465 (more than 1.96).



Source: Primary data.

Fig. 3: The Structural Model

Table 8: Results of Hypothesis Testing

Hypothesis	Direct			Results
	Path Value	T Values	P Values	
H1- acc -> up	-0.158	2.269	0.012*	Accept*
H2- info -> up	0.011	.449	0.393	Reject
H3- inte -> up	0.799	13.502	0.000*	Accept*
H4- per -> up	0.228	3.465	0.000*	Accept*
H1a- acc -> me	-0.046	0.575	0.283	Reject
H2a- info -> me	0.104	1.962	0.027*	Accept*
H3a- inte -> me	0.128	1.448	0.074	Reject
H4a-per -> me	0.092	1.620	0.053	Reject
H5-up -> me(direct)	0.427	5.261	0.000*	Accept*

Note-*P< 0.05

Source: Primary data.

Based on this result, interactivity and personalisation have a significant positive relationship with user proficiency, while accessibility has a significant negative relationship with user proficiency. Therefore, hypotheses H1, H3, and H4 are accepted, and it is evident that information has no significant relationship with user proficiency (P=0.393, T=0.449), with H2 being rejected. The hypothesised relationships relevant to research question 2 are H1a, H2a, H3a and H4a. As seen from the Table 8, the relationship between accessibility, interactivity and personalisation with memorable experience has a path efficiency of -0.046, 0.128 and 0.092, respectively, with a t-stat value of 0.575, 1.448, and 1.620 (less than 1.96). Based on these values, it is evidenced that accessibility, interactivity and personalisation have no significant relationship with memorable experiences.

Based on this evidence, H1a, H3a, and H4a are rejected. However, it is noted that the relationship between information and memorable experience has a path coefficient of 0.104 with a t-stat value of 1.962, which indicates that information has a significant positive relationship with user proficiency.

Mediation Analysis

The mediation analysis was executed to measure the mediating role of user proficiency on the linkage between the STTs variable and tourist memorable experiences. The hypothesized relationship relevant to research question 3 is H5. The relationship between user proficiency and memorable experience is measured directly and indirectly. The direct relationship is the STT variables on a memorable experience, and the indirect relationship is through the variable user proficiency. The direct relationship between user proficiency and memorable experience is positive. As seen in Table 9, the direct relationship between user proficiency and memorable experience has a path coefficient of 0.427 and a t-stat value of 5.261. Based on this evidence, a significant direct positive relationship exists between user proficiency and memorable experience. The indirect relationship of the STT variables on memorable experience through the variable user proficiency is measured through mediation. The mediation analysis results show that the total effects STTs variables-accessibility (β=-0.067 t=1.963 p=<0.025), interactiveness (β=0.341, t=4.573, p=<0.000). Personalisation (β=0.098, t=2.864, p=<0.002).

The STT's indirect effect on memorable experiences through user proficiency is significant for accessibility, interactivity and personalisation but not significant for information, indicating that the association between endogenous variables of STT accessibility, interactivity and personalisation on the exogenous variable memorable experience is fully mediated by user-proficiency. Table 8 shows the complete mediation results.

Table 9: Showing the Mediation Results

Total Effect (STT-> CREA)		Direct Effect (STTs -> ME)		Indirect Effect of STTs on ME through UP					
Co-Efficient	P-Value	Co-Efficient	P-Value	Path	Co-efficient	SD	T-Value	P-Value	BI (2.5%:97.5%)
-0.113	0.088	-0.046	0.283	H5-acc -> up -> me	-0.067	0.034	1.963	0.025*	-0.131 - 0.018
0.109	0.017*	0.104	0.027*	info -> up -> me	0.005	0.018	0.267	0.395*	-0.027 to 0.033
0.469	0.000*	0.128	0.074	inte -> up -> me	0.341	0.075	4.573	0.000*	0.231 to 0.476
0.190	0.000*	0.092	0.053	per -> up -> me	0.098	0.034	2.864	0.002*	0.050 to 0.162

Note: P < 0.05.

Source Primary data.

Considering the above interpretations based on the survey results, the exogenous variables accessibility, interactivity and personalisation have a significant relationship with a memorable experience, and in addition, accessibility, interactivity and personalisation have no significant direct relationship with a memorable experience. Undeniably, user proficiency has a complete mediation bearing on memorable experiences. The role of user-proficiency as a full mediator in the model is statistically found significant and established for the three endogenous variables- accessibility, interactivity and personalisation.

DISCUSSION AND IMPLICATIONS

Religious tourism involves travel that is primarily driven by religious motivations. As the oldest type of tourism, it has been practiced by people of all ages and religions. Bond et al. (2014) posit that religious tourism is approached

commonly to visit, compare and explore the experiences of pilgrim's tourists at a single site. Tourist motivation and needs at religious destinations have been well explored by extant researchers. However, very few studies have explored creating and comparing memorable experiences in the current digital era, where most tourist services are digitally provided to customers. This gap in the religious tourism literature is significant, as it assumes that the pilgrim destination's tourism experiences will be enhanced irrespective of the destination, based on the tourist usage of smart technologies and their proficiency. The diverse tourism itinerary designed to provide different experiences to suit the tourist's specific needs at the religious destination differentiates one tourist operator's offer from the competition (Weidenfeld & Ron, 2008). Being pitted against similar grounds, many religious destinations have focused on using smart technologies to regain prominence after the pandemic (Ghaderi et al., 2018). The religious destinations have incorporated STT technologies to increase their prominence, create awareness, and divulge information to the target market about the various religious offerings, prayer schedules, special days, and unique offerings through social media. The adoption of smart tourism technology, digital infrastructure and connectivity, mobile applications for pilgrims, smart safety and crowd management, digital literacy initiatives, and technology-enabled pilgrimage experiences guided this study in choosing religious destinations.

The demographic results of this study show that the religious tourists are not gender specific- the target market was equally divided across both male and female tourists. However, gender, like other demographic variables, such as income, social status, race, and religion, significantly impacts tourist expectations (Seow, 2020). This study empirically demonstrates that accessibility, personalisation and interactiveness of the STTs have a significant impact on the user proficiency of the tourist but have no significant impact on creating a memorable tourist experience. Similar results are reported by Zabih et al. (2023) in their study of tourists in Turkey. Accessibility is found to influence user proficiency negatively. The readiness of tourists to adopt smart tourism technologies could negatively influence the willingness and readiness of elderly tourists. Similar findings are reported by Tuomi et al. (2023). Among the variables of the STTs, Empirical evidence of the study indicates that interactiveness directly.

Impact user proficiency implies that interactiveness demands a certain level of internet connection that is available individually. The research findings indicate that many religious tourists may need more technical proficiency to help effectively use the connectivity.

Similar findings were reported in the study of technology progress in tourism, where the authors contend that the stress related to technology in tourism for the tourist may seriously hamper the central role of religious tourism in providing the tourist with the hedonic and meaningful pleasure and experience of the destination (Cai et al., 2019). These findings indicate the need for a support mechanism that enables all user segments, irrespective of their technical proficiency, to navigate and use the religious destination's digital platforms in social media. In addition to the above findings, the impact of information design on user proficiency brings out the need to optimize smart the information available on the digital interface/platform to cater to the diverse needs of the user segment. Further, this research study indicates that personalization has a significant positive relationship with user proficiency, suggesting that curated, tailored content significantly increases the tourist's ability to navigate and digitally engage the STT platform. Practitioners should consider browsing behaviors, contextual factors, and segment preferences while designing the offering, as this would enable the creation of an empowering user experience for tourists.

Both these outlay the critical priorities for practitioners and future researchers to address the technical skill gap in the tourist segment and the multifaceted challenges it brings in the design phase. However, if addressed, it could effectively enhance tourists' digital experience and create a seamless, memorable experience by purporting word-of-mouth spread of the destination and positive reviews of their travel experience. The user's proficiency is independent of the availability of information but depends on the user's willingness to adopt technology and its usage. The more willingness and usage, the more proficient the user will become. The availability of the internet has opened the door to tourists for information regarding various religious destinations, offers online travel agencies, travel companies, prices, destinations, places of worship websites, and such general information available online. However, even though internet search for information has surpassed traditional media sources (Tews & Merritt, 2007), the search activity may be daunting for the potential religious tourist. Successful navigation requires repeated interactions and usage of the STT. A high level of uncertainty avoidance impacts usage and interactiveness despite the availability of vast travel information. Similar findings have been reported by earlier researchers in tourism (Jordon et al., 2013; Wober & Gretzel, 2000; Souza & Marques, 2022).

The study's findings further suggest that the triad of accessibility, interaction and personalisation explains about 70 per cent of the variation in user proficiency in the tourism industry. These findings highlight the critical importance of these three key factors for tourist application and service developers in designing and developing the user interface of social media platforms and tourism enabling applications. Optimisation of these critical key factors can optimise user experience and, at the same time, enhance the

efficacy of the digital ecosystems of tourist operators and tourist destinations. Besides that, the indirect relationship of the four relationships-accessibility, information, interactiveness and personalization, only three Mediating relationships are significant. Even though the triads of accessibility, interaction, and personalization in creating memorable experiences are significant and positive, only interactivity has the most pronounced and highest impact on creating memorable experiences. A study conducted by Rasoolimanesh et al. (2021) on revisit intentions contends that the impact of destination positive image on revisit intention if memorable experiences are created. However, no studies have described the mediating role of user proficiency on memorable experiences. This study fills this gap and confirms moderate and high mediating roles of interactivity, personalization and accessibility. This highlights the need to engage the tourist and evoke lasting impressions for the practitioners to create interactive features, multimedia content, virtual tours, and gamification features and incorporate real-time feedback mechanisms in the design and development of the tourist platform that can captivate the users and enable to create a memorable experience.

LIMITATION AND DIRECTION FOR FUTURE RESEARCH

The study has limitations that give opportunities for future research. In this study, the sample respondents were onsite visitors to the chosen religious destination, and the respondents could give details of their memorable experiences on the spot during the visit. At the same time, much research was conducted after the tourist had completed their travel and then asked about their memorable experience. This approach of asking about the experience after its completion is recommended as the time of recall would bring in the best memories that could enable more precision of memories, unlike the current studies, which focus on immediate memorable experiences. The questionnaire focused on pleasant, memorable experiences and did not focus on negative experiences, which would throw further light on the design aspect of the practitioners. The third limitation is security features. This study has not focused on security issues regarding the user end, as the focus was on usage and proficiency. Further research could explore the security aspect from the perception of the user, practitioners, and the religious destination.

CONCLUSION

The research study's contribution to the tourism literature is manifold. Travel users using smart digital offerings for religious destinations are likelier to develop memorable experiences through seamless navigation. The practitioner would incorporate personalized, tailored, and curated offerings on their social media sites to enable more information awareness for potential tourists. It is also noted that the more the smart digital offer is made, the more memorable experiences are enhanced. This suggests that religious destinations can create many more digital offers on their platforms – online bookings for the religious experiences, stays and other offerings in terms of the sevas more offerings like the virtual tours and meta-verse creations that could entice pilgrims to visit more in the years to come. The tourism industry stakeholders would benefit if they could create a strong sense of engagement, satisfaction and memorable experience to increase the revisit intention and spread the word of mouth and electronic word of mouth.

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