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# Impact of Technology-Based Service Innovations on Tourist Site Revisits

## Abstract

The tourism industry is a vital component of the economy and is essential for advancing society, culture, and the environment. Digital technology has changed various facets of the tourism industry, increasing accessibility, convenience, and the capacity to accommodate individual preferences. The tourists' intention to revisit can be taken as a measure of the success of a destination, and it depends on the experience they gain from their visit. The present study assesses how revisiting tourist sites is influenced by the variables of technology-based service innovations, service value, and experience sharing through technology. The study was based on primary data collected from tourists who had visited Ernakulam and Thiruvananthapuram in Kerala, India. The data were collected using a questionnaire from a sample of 380 tourists using purposive sampling. SPSS V 26, Process Macro V 4.2, and SMART PLS 4 were used for data analysis. The study finds that technologically based service innovation increases service value, visitor site revisits, and experience sharing online. The study shows that the quality of the service has a favourable and significant impact on visitors' return visits to the site. The study is limited to tourists' perspectives, and conducting a multistakeholder approach to studying digital tourism is recommended.

***Keywords***: digital tourism, Kerala, technology-based service innovations, service value, experience sharing through technology, tourist site revisits

## 1. Introduction

Tourism is a crucial component of the economy and significantly impacts social, cultural, and environmental development (Nunkoo & Gursoy, 2012; Johnson & Radhika, 2018). It serves both as a means of allowing individuals to unwind and as a tool for fostering economic growth. Due to technological advancements, the tourism industry is currently undergoing significant changes (Nikopoulou et al., 2024). Information and communication technology have completely transformed people's daily tasks, thereby increasing consumer bargaining opportunities. AI tools have been mainly utilised in the service industry (Huang and Rust, 2021), but they have also worked as a barrier to growth for some firms. Some businesses have successfully used these technologies as a new business opportunity to survive and grow (Yeh, 2020). Travel demand and supply have changed due to contemporary technologies (Jopp et al., 2019), and innovative ideas, methods, and industry competitiveness drive it. Information technology is essential for adapting to changing disruptions and staying competitive (Seyitoğlu & Ivanov, 2022). It has transformed how tourism is marketed, leading to digital tourism (Koo et al., 2015).

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Understanding tourists' experiences in digital tourism is crucial for planning promotional strategies, as it affects their intentions to revisit. Designing a new tourism strategy necessitates careful consideration of both positive and negative tourist experiences. The pandemic's spread brought significant changes to the tourism industry (P.J. et al., 2024), making it essential to examine tourists' experiences in digital tourism. Technological advances allow travellers to share experiences on social media platforms such as Facebook, Twitter, and Instagram, promoting destinations to others. Satisfied tourists are more likely to want to return to the destination or provide positive recommendations (Wang et al. 2017). Many scholars have studied various aspects of technology applications in tourism, including information searching, experience sharing, the link between technological innovation and revisit, and the role of social media influencers (Sharma& Bhat, 2022; Babu et al., 2024). Moreover, Technological innovation enhances visitor satisfaction, impacting their decisions and likelihood of returning to the hotel (Sharma & Bhat, 2022). Preko et al. (2022) indicated that technology-based service innovativeness significantly impacts service value, tourist site revisits, and experience sharing via technology.

While studies exist on how technological innovations influence revisits, a gap remains in understanding the relationship between technology-based service sharing and revisits. No researchers have examined how service value and experience sharing via technology jointly mediate the link between technology-based service innovativeness and tourist revisit. This study addresses this gap by conducting a serial mediation analysis to examine how the mediator's service value and experience sharing through technology influence the relationship between technology-based service innovations and tourists' revisit intention. Objectives include assessing the impact of technology-based service innovations, service value, and experience sharing on tourists' site revisits. Understanding this serial mediation effect will shed light on the relationship between experience sharing and tourist revisits for tourism service providers. This insight will help them enhance service value, encourage more positive feedback during experience sharing, and allow for better planning of activities to improve service value.

## 2. Review of literature

The global economy, particularly travel and tourism, relies on the internet to promote and engage travellers. Digital technologies have led to a new form of tourism: digital tourism. Digital tourism involves using technology to manage travel experiences and share moments on social media platforms, including websites and online booking services (Preko et al., 2022). Digital technologies facilitate significant service exchanges among tourism stakeholders, enhancing the travel experience. Gretzel et al. (2015) highlighted that mobile apps offer travellers easy access to destination information and booking options while travelling. Innovative digital technologies, termed technology-based service innovation, enable providers to discover new opportunities and enhance service value or memorable customer experiences. However, the key question remains whether these technologies are utilized to their fullest potential. What will tourists' perceptions be of using these digital technologies in tourism? Will these technologies improve the tourism experience or service value and lead to repeat visits to the destination? Table 1 provides a thorough overview of the existing literature.

**Table 1**
***Studies highlighting the impact of Smart Tourism Technologies (STT) on tourist revisit***

| Source | Aim | Theory/ Model | Methodology | Key Findings |
|---|---|---|---|---|
| Neuhofer et al., (2015a) | Examined the impact of technology on the tourist experience, including enablers, barriers, and consequences. | Personalised experience creation model. | Qualitative case study approach. | The study identified the technological enablers of the tourist experience, such as software, telecommunication, and infrastructure, as well as usage and usability enablers. It also highlighted the technological barriers leading to emotional responses, missed opportunities, behavioural consequences, etc. |
| Ranjbarian & Pool (2015) | Examined how tourists' perceptions of destination quality and value affect their satisfaction and intention to return. | Cognitive-affective framework | SEM | Their perception of quality and value positively influences tourists' satisfaction and intention to revisit. |

**Table 1** ***(continued)***

| | | | | |
|---|---|---|---|---|
| Huang et al. (2017) | Examined travellers' use of STTs, including travel websites, social media, and smartphones, to improve travel satisfaction. | Theory of exploration and exploitation. | SEM | The study revealed that STTs encourage explorative and exploitative use, whereas users' security and privacy concerns negatively impact this engagement. |
| Wang et al. (2017) | Analyzed the connections between perceived quality of destinations, tourist satisfaction, and Word-of-mouth (WOM). | Destination perceived quality, tourist satisfaction and WOM | SEM | Found that destination quality enhances tourist satisfaction and word-of-mouth. A strong relationship exists between visit frequency and WOM. |
| Jeong and Shin (2020) | Explored how travellers utilize STTs at destinations and their impact on the travel experience and intent to revisit. | Balance theory and theory of planned behaviour. | SEM | Three attributes of STTs (informativeness, interactivity, and personalisation) significantly influenced tourists' experience, satisfaction, and intentions to revisit. |
| Pai et al. (2020) | Examined tourist satisfaction with STT's informativeness, accessibility, interaction, personalisation, and security. This study also examined how STT affects tourist satisfaction and return. | Perceived STT experience, travel experience satisfaction, tourist happiness, and revisit intention. | SEM | The results indicated that accessibility affects STT the most and customization the least. STT experience is strongly linked with travel experience satisfaction, boosting tourists' happiness and revisit intention. |
| Azis et al. (2020) | Examined the impact of STTs and memorable experiences on tourist satisfaction and destination loyalty. | STTs, memorable tourism experiences, tourist satisfaction, and destination loyalty. | SEM | STT and memorable experiences boost tourist satisfaction and destination loyalty. Travellers with positive memories and satisfaction are more likely to return and recommend the destination. |
| Pai et al. (2021) | Analyzed the links between perceived STT experience, travel experience, and intention to revisit. | Theory of perceived STT. | SEM | The study found a strong link between perceived STT experience, travel experience, and the intention to revisit. |
| Sharma & Bhat (2022) | Examined the link between co-creation, technological innovation, visitor satisfaction, and revisit intention. | Co-creation. | SEM | The study observed a positive link between co-creation, technological innovation, visitor satisfaction, and revisit intention. |
| Goo et al. (2022) | Explored the links between novelty, anxiety, and travel enjoyment and examined how travellers enhance their journeys using STTs. | Uncertainty reduction theory. | SEM | Tourists' desire for novelty enhanced trip experiences and satisfaction, while their worries can diminish. |
| Preko et al. (2022) | Assessed how technology-based innovation affects service value and tourist revisits in a growing market. | Social cognitive theory | SEM | The study found that technology-based service innovativeness significantly impacts service value, tourist site revisits, and experience sharing via technology. It also found a strong impact of service value on tourist site revisits and experience-sharing via technology. |
| Torabi et al. (2023) | Examined how STTs affect tourists' intentions to return and share their experiences in emerging and smart rural tourist destinations in Iran. | STTs, revisit intention and word of mouth | SEM | Three aspects of STTs—informativeness, accessibility, and interaction—significantly enhance tourists' memorable experiences. |
| Gregoriades et al. (2023) | Analysed revisit intention patterns among visitors via electronic word of mouth using big data analytics | Three-factor theory. | Natural language processing | Provided a novel method for investigating revisit intention and identifying negative and positive factors affecting customer value perception. |

*Source:* Compiled by the authors

## 2.1. Theoretical lens of the study:

The study utilized social cognitive theory (SCT) (Bandura, 1989) to explain advanced knowledge of technological progress and tourist revisit experiences. Scholars have applied SCT to assess COVID-19's impact on tourism and travel willingness (Hao et al., 2021), identify entrepreneurship factors in tourism and hospitality (Wang et al., 2019), and investigate tourists' revisit intentions in Ghana (Preko et al., 2022). People's circumstances

shape their intentions and actions, according to SCT theory. SCT suggests that human functioning depends on the interaction between behaviour, the environment, and individual traits. The environment can influence an individual's thoughts and behaviours. Technological tools in travel and tourism significantly impact overall experiences, sharing of those experiences, and the likelihood of revisiting tourist sites (Preko et al., 2022). Accessible digital technology in the tourism industry can influence tourists' chances of revisiting. The study examines factors affecting tourists' intentions to revisit the digital tourism era through multiple variables.

## 2.2. Technology-based service innovation (TSI):

TSI opens new avenues for business survival, creates value, and, notably, improves corporate reputation during economic challenges (Hughes et al., 2021; Preko et al., 2022). TSI is transforming tourism services and enhancing visitor satisfaction. It also enhances delivery techniques and boosts service value. Technology services and AI strengthen customer service, particularly during the COVID-19 pandemic (Preko et al., 2022). Research shows that STTs are transforming the tourism industry and enhancing tourist site revisits (Jeong & Shin, 2020; Pai et al., 2020; Pai et al., 2021; Preko et al., 2022; Sharma & Bhat, 2022; Bader et al., 2023). The tourism industry has adopted technology to improve customer experiences and efficiency. These innovations enhance service quality and shape tourists' perceptions of value, affecting their likelihood of revisiting. Thus, the following hypotheses are proposed.

*H1:* Technology-based service innovation has a significant positive impact on service value.

*H2:* Technology-based service innovation has a positive impact on revisiting tourist sites.

*H5:* Technology-based service innovation positively impacts experience sharing through technology.

## 2.3. Service value (SV):

SV highlights how various service components shape consumers' value perceptions (Ruiz et al. 2008). SV in tourism includes multiple factors that shape a tourist's overall experience evaluation. Various scholars have examined SV dimensions. For instance, Ranjbarian & Pool (2015) studied how tourists' perceptions of destination quality and value affect their satisfaction and likelihood of returning. A study by Wang et al. (2017) shows that perceived quality positively affects tourist satisfaction and word-of-mouth. Moreover, Shahijan et al. (2015) demonstrated a strong link between service quality and the intention to revisit and word-of-mouth publicity. Thus, high-quality services that meet tourist expectations lead to satisfaction and the intention to revisit a destination. Satisfied tourists share positive feedback about the destination. SV leads to positive word-of-mouth publicity. In the digital era, people use technology to share positive experiences. The hypotheses proposed in this case are as follows.

*H3:* Service value has a significant positive impact on tourist site revisits.

*H4:* Service value has a significant positive impact on experience sharing through technology.

## 2.4. Tourist site revisit (TSR)

TSR is vital in tourism studies, affecting the sustainability and profitability of destinations. Knowing what drives tourists to return can help marketers and managers create strategies to boost visitor loyalty. Jalilvand et al. (2012) found that positive online reviews boost tourists' intentions to revisit a destination. Gregoriades et al. (2023) employed big data analytics to examine the revisit intention patterns of visitors through the analysis of electronic word of mouth. Many scholars have studied STT's impact on TSR (Jeong & Shin, 2020; Pai et al., 2020; Azis et al., 2020; Pai et al., 2021; Preko et al., 2022; Bader et al., 2023; Torabi et al., 2023). Using technological applications boosts electronic word of mouth and positively affects revisit

intention. However, this research aims to fill the gap by studying the combined effect of service value and experience sharing through technology on the relationship between technology-based service innovativeness and revisit intention.

### 2.5. Experience sharing through technology (EST)

Digital technology has revolutionized marketing and promotion in the travel and tourism industries. Smartphones have significantly transformed tourism by enhancing how tourists access information and share experiences while travelling (Jung et al., 2015). Social networking sites, instant messaging, online photo albums, and private blogs were the most widely used mediums (Lo et al., 2011). Tourism businesses use social media platforms like Facebook, Twitter, and Instagram to connect with potential clients and promote their services, serving as personal sources over commercial ones (Hu and Wei, 2013). These platforms allow destination marketers to showcase unique experiences and attractions through photos, videos, and stories. Torabi et al. (2023) found that word-of-mouth recommendations affect tourists' willingness to return to destinations. Customers often refrain from returning due to negative electronic word-of-mouth, which management must address (Gregoriades et al., 2023). This study addresses a gap in the literature by examining how EST affects TSR and mediates the relationship between TSI and TST. Thus, the following hypotheses are proposed:

*H6:* Experience sharing through technology positively influences tourist site revisits.

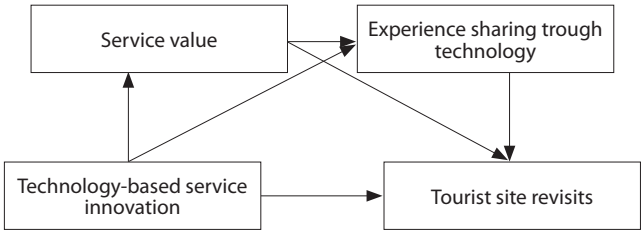
*H7:* Service value mediates the association between technology-based service innovation and tourist site revisits.

*H8:* Experience sharing through technology mediates the association between technology-based service innovation and tourist site revisits.

*H9:* Service value and experience sharing through technology mediate the association between technology-based service innovation and tourist site revisits.

The conceptual model has been outlined in Figure 1.

**Figure 1**
***Conceptual model***



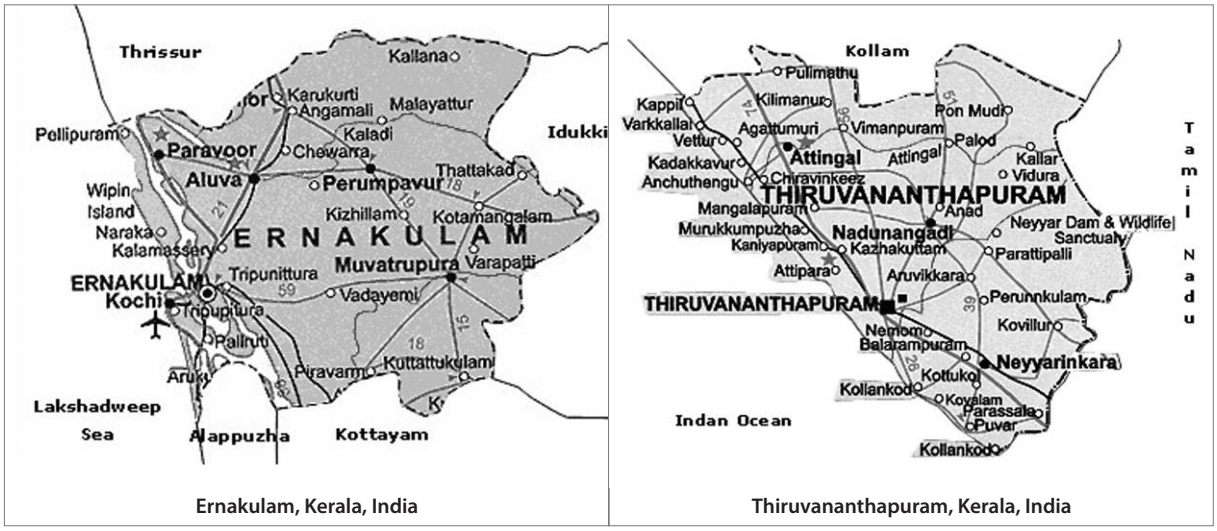

## 3. Methodology

### 3.1. Study location

The survey method is used to collect data from tourists who have visited major destinations, viz., Ernakulam and Thiruvananthapuram, in Kerala, India. Kerala (known as God's own country) is one of the premier tourism hubs in India and a pioneer in adapting technological innovations in tourism. Kerala has been recognized with several awards, such as the Global Award at the World Travel Mart, the Pacific-Asia Travel Association Grand Award for Marketing, etc. These accolades demonstrate Kerala's leadership in digital tourism in India, making it an ideal location for the study (Kerala Tourism, 2023). The successful integration of digital solutions has strategically positioned Kerala as a digitally adept destination, resulting in heightened visitor involvement

and the comprehensive promotion of its wide-ranging tourism products. Ernakulam and Thiruvananthapuram districts were chosen for the study due to their prominence in foreign and domestic tourist inflow in 2022 (Tourist Statistics, 2022). Figure 2 displays the maps of the districts.

**Figure 2**
***Maps of Locations***




*Note.* The figure depicts the maps of Ernakulam and Thiruvananthapuram.

## 3.2 Sampling

The study invited 520 foreign and domestic tourists who used digital tourism applications, 446 of whom agreed to participate, and discarded 66 incomplete questionnaires. The final data resulted in a response rate of 73.08 per cent (n = 380). The first part of the questionnaire comprised questions about the participants' demographic profiles, whereas the subsequent section included questions about constructs and their corresponding items. The study employed a purposive sampling method to gather data from tourists who have used digital tourism applications for their travel choices.

## 3.3 Measurement of constructs

The questionnaire comprised 14 items on a 5-point Likert scale (5-strongly agree to disagree 1-strongly). A three-item scale from Yen et al. (2020) was adapted to measure TSI. Service Value (SV) was measured using a three-item scale adapted from Preko et al. (2022). Oliveira et al. (2020) adapted a three-item scale to measure EST. For TSR, a five-item scale from Song et al. (2012) and Preko et al. (2022) was adapted for the study. Appendix 1 lists the constructs and items.

# 4. Results and discussion

## 4.1. Demographic profile of the respondents

In the study sample, 60 per cent of the respondents were male, and 40 per cent were female. Forty per cent of the respondents were within the age range of 30–40 years, followed by 20 per cent in the 40–50 age bracket. Concerning marital status, 55% of the individuals surveyed were not married, while 25 per cent were married. Fifty-five per cent of the respondents were graduates. Furthermore, it was observed that only those tourists who use digital applications for travelling were included in the study.

## 4.2. Analysis

SPSS, Process Macro, and Smart PLS 4 were used for data analysis. SPSS was used for descriptive statistical analysis and construct reliability. Process macro was used to assess the direct and indirect effects of the model. Hypotheses testing was done using path analysis with SPSS PROCESS Macro V 4.2 (Hayes, 2017). Model 6 was used to examine the proposed serial mediation relationship. Bootstrapping was done with a 95 per cent confidence interval to determine the indirect effects of the mediators and assess the statistical significance of the moderation effects. Smart PLS 4 was used to measure composite reliability, convergent validity, and discriminant validity. Rasoolimanesh et al. (2021) suggested that hospitality and tourism researchers use an explicit method, like the product of coefficients combined with bootstrapping, resampling, and confidence intervals, for more reliable results in assessing mediator and indirect effects. Moreover, serial mediation involves the sequential linking of many mediators in a causal chain.

## 4.3. Measurement model

Cronbach's alpha is a statistical metric used to assess reliability, and a well-accepted rule of thumb is that an alpha value of 0.7 or above indicates good reliability. All constructs had a Cronbach's alpha above 0.7, showing high reliability. Higher composite reliability (CR) scores indicate more excellent reliability. Values within the range of 0.70 to 0.90 are considered adequate or reasonable. Values of 0.95 or higher indicate redundancy among elements, reducing construct validity. In the present study, there are constructs with a CR value beyond the threshold of 0.9; they are considered acceptable as they fall below the threshold of 0.95 (Hair et al., 2019). Farrell (2010) defines the average variance extracted (AVE) estimate as the average level of variance a latent construct can account for in the observable variables it conceptually associates with. The AVE metric evaluates the convergent validity of a construct by measuring its entire item pool. The AVE values of the constructs exceed 0.50, confirming convergent validity. Discriminant validity is a key factor in evaluating the validity of reflective measurement models (Sarstedt et al., 2022). We assessed discriminant validity using the Fornell-Larcker criteria. Table 3 shows the discriminant validity assessment via the Fornell-Larcker method (Fornell & Larcker, 1981). The square root of the AVE scores for a construct surpassed its highest correlation with another latent variable. Table 2 displays the measurement model.

**Table 2**
***Measurement model***

| | Outer loadings | Cronbach's alpha | Composite Reliability | Average variance extracted (AVE) |
|---|---|---|---|---|
| EST1 ← EST | 0.967 | 0.981 | 0.94 | 0.940 |
| EST2 ← EST | 0.989 | | | |
| EST3 ← EST | 0.987 | | | |
| SV 1 ← SV | 0.91 | 0.87 | 0.92 | 0.794 |
| SV 2 ← SV | 0.914 | | | |
| SV 3 ← SV | 0.847 | | | |
| TSI 1 ← TSI | 0.87 | 0.828 | 0.897 | 0.744 |
| TSI 2 ← TSI | 0.894 | | | |
| TSI 3 ← TSI | 0.823 | | | |
| TSR 1 ← TSR | 0.895 | 0.94 | 0.93 | 0.808 |
| TSR 2 ← TSR | 0.898 | | | |
| TSR 3 ← TSR | 0.939 | | | |
| TSR 4 ← TSR | 0.917 | | | |
| TSR 5 ← TSR | 0.845 | | | |

*Note.* The table outlines the measurement model assessment computed using Smart Pls 4.

**Table 3**
***Fornell-Larcker Criterion***

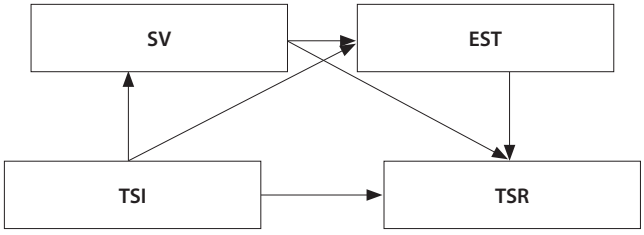
| | EST | SV | TSI | TSR |
|---|---|---|---|---|
| **EST** | **0.981** | | | |
| **SV** | 0.017 | **0.891** | | |
| **TSI** | 0.099 | 0.776 | **0.863** | |
| **TSR** | 0.155 | 0.626 | 0.589 | **0.899** |

*Note.* The table outlines the discriminant validity assessment using Fornell-Larcker criteria.

## 4.4. Hypotheses testing

The study tests six direct and three indirect hypotheses (Fig. 3); the results are shown in Table 2. According to the data provided in Table 4, the coefficient of determination (R2) for the variable SV is 0.5961, suggesting that it explains approximately 59.61 per cent of the variability seen in the variable. The R-Square or EST is 0.0165, indicating that it accounts for roughly 1.65 per cent of the variability seen in the variable. The R-Square for TSR is 0.4212, signifying that it accounts for approximately 42.12 per cent of the variability seen in the variable.

**Figure 3**
***Serial Mediation Model***




*Note.* The model outlines the Serial Mediation analysis performed using Process Macro

**Table 4**
***Direct, indirect, and total effects of TSI on TSR***

| Direct/Indirect/ Total effect | Estimate | Standard error (SE) | p value | Lower limit confidence interval | Upper limit confidence interval |
|---|---|---|---|---|---|
| **Direct Effect:** | | | | | |
| TSI – SV | .7984 | .0338 | 0.0000* | .7320 | .8649 |
| SV- EST | -.2202 | 1308 | 0.0931 | -4773 | .0369 |
| TSI-EST | 3359 | .1352 | 0.0134* | .0700 | .6018 |
| SV-TSR | .4829 | .0690 | 0.0000* | 3472 | 6185 |
| EST-TSR | .0837 | .0271 | 0.0021* | .0305 | 1370 |
| TSI-TSR | 2685 | .0716 | 0.0002* | .1277 | .4094 |
| **Indirect effect:** | | | | | |
| TSI - SV- TSR | .3349 | .0554 | | .2325 | .4463 |
| TSI - EST- TSR | .0244 | .0144 | | .0016 | .0570 |
| TSI - SV- EST- TSR | -0128 | .0096 | | -.0354 | .0025 |
| **Total effect:** | .6675 | .0482 | | .5726 | .7623 |
| **R square values:** | | | | | |
| SV: .5961 | | | | | |
| EST: .0165 | | | | | |
| TSR: .4212 | | | | | |

*Significant at 1% level.
*Note.* The table outlines the direct, indirect, and total effects concerning the hypotheses testing.

#### *4.4.1. Direct effect*

The analysis (refer to Table 4) fully comprehends the interconnections among the variables, accompanied by rigorous hypothesis testing and reliable estimates of confidence intervals. The direct effect investigates whether the link between the independent and dependent variables is direct and unmediated by a third variable. The study found a strong and statistically significant connection between TSI and SV (estimate = 0.7984, SE = 0.0338, $p < 0.001$). This suggests that a one-unit rise in TSI is related to a substantial increase in SV. The aforementioned observation is substantiated by a closely bordered confidence interval (0.7320 to 0.8649), which exhibits no overlap with zero. However, the statistical analysis did not reveal a significant direct influence of SV on EST (estimate = -0.2202, SE = 0.1308, $p = 0.0931$). The confidence range, ranging from -0.4773 to 0.0369, indicates a possible effect that necessitates more examination owing to its proximity to zero. The direct impact of TSI on EST demonstrated statistical significance (Estimate = 0.3359, SE = 0.1352, $p = 0.0134$), as evidenced by a confidence range ranging from 0.0700 to 0.6018. The analysis results provide strong evidence for SV's substantial and statistically significant impact on TSR (estimate = 0.4829, SE = 0.0690, $p < 0.001$). This conclusion is further supported by the narrow confidence interval (0.3472 to 0.6185). The analysis also revealed that EST and TSI significantly impacted TSR. Specifically, the estimate for EST was 0.0837, with a standard error of 0.0271 and a p-value of 0.0021. Similarly, the forecast for TSI was 0.2685, with a standard error of 0.0716 and a p-value less than 0.001. These findings were further supported by the nonoverlapping confidence intervals for EST (ranging from 0.0305 to 0.1370) and TSI (ranging from 0.1277 to 0.4094) with zero.

#### *4.4.2. Indirect effect*

The sequential mediation analysis (refer to Table 4) explored the complex connections between variables, revealing complicated indirect paths and providing insights into the interplay of impacts. The study of indirect effects offered valuable insights into the relationship between the variable TSI and TSR, elucidating the influence of different errors. The initial analysis revealed that the impact of TSI on TSR was mediated by SV, resulting in a statistically significant positive indirect effect (estimate = 0.3349, 95 per cent CI [0.2325, 0.4463]). Similarly, the analysis demonstrated a favourable indirect impact of TSI on TSR employing the mediation of EST, with an estimate of 0.0244 and a 95 per cent confidence interval of [0.0016, 0.0570]. The intricate connection of variables was shown in the third route, wherein the influence of TSI on TSR was sequentially mediated through SV and EST. This mediation resulted in a negative indirect effect (estimate = -0.0128, 95 per cent CI [-0.0354, 0.0025]), which was statistically insignificant.

### 4.5. Discussion of the findings and implications

Digital tourism leverages technology to enhance the visitor experience. Kerala leverages technology to strengthen tourism, earning numerous national and international accolades. The pandemic's spread accelerated the industry's adoption of technological tools to enhance tourist experiences. This study's hypotheses examined the links between TSI, SV, EST, and TSR. The significant positive impact of TSI on SV (H1) was supported, aligning with Barile et al. (2017) and Preko et al. (2022). This highlights the vital role of technical advancements in enhancing the perceived value of services in travel and tourism. Service innovation through technology improves service delivery techniques (Tajeddini et al., 2020) and boosts SV. The positive impact of TSI on TSR, as proposed in H2, is supported by Jeon & Shin (2020) and Preko et al. (2022). The study highlights the significant effect of innovative technology services on visitors' return rates to sites. This underscores the enduring impact of advanced technology on current experiences and future travel decisions. The study also supports H3, which suggests that SV positively impacts TSR. The assertion is supported by research from Shahijan et al. (2015), Wang et al. (2017), and Preko et al. (2022). This finding suggests that a positive view of SV increases the chances of visitors returning to sites. This highlights the enduring effect of

service quality on visitors' intentions to return, stressing the importance of consistently delivering excellent service in tourism.

H4, which suggests that the SV positively influences EST was not supported. The result contradicts the findings of Shahijan et al. (2015), Wang et al. (2017), and Preko et al. (2022). Despite dissatisfaction with services, tourists use technology to share their experiences. This study challenges common beliefs and suggests that sharing experiences may extend beyond immediate gratification from services. The result confirms hypothesis H5, i.e., TSI positively impacts EST, supported by Park et al. (2020), Preko et al. (2022), and Kokkinou et al. (2022). TSI enhances EST by offering tools for real-time communication, content creation, and feedback. Innovations like mobile apps and social media enable tourists to share experiences, influence others and enhance travel narratives efficiently. User-friendly interfaces, instant sharing, and personalized recommendations enhance engagement, prompting users to share their journeys (Neuhofer et al., 2015b). This sharing enhances travel experiences and promotes destinations through user-generated content, highlighting technology's positive impact on tourism.

H6 suggests that EST positively influences TSR. The study's findings support this assertion. Tourists who actively share their experiences online are more likely to revisit sites. This underscores the importance of digital engagement in shaping lasting connections between travellers and their favourite destinations. H7 and H8 suggest mediated connections between SV and EST within TSI and TSR. SV mediates the link between TSI and TSR (H7), aligning with Preko et al. (2022). The study confirmed that EST mediates the relationship between TSI and TSR (H8). Mobile apps and social media enhance sharing, boosting user engagement and satisfaction (Hu & Wei, 2013). This sharing influences peers and reinforces tourists' experiences, increasing their likelihood of revisiting the site. These platforms enable user feedback and recommendations, fostering a cycle that boosts revisit intentions through enhanced shared experiences. One of the significant contributions of this study is that no previous research has tested how experience sharing through technology mediates the association between technology-based service innovation and tourist site revisits. The empirical evidence supports the two mediated interactions, highlighting the significant roles of SV and EST as mediators in the link between technological innovation and visitors' desire to revisit destinations. H9 lacks empirical support, so a serial mediation model with SV, EST, and TSR is proposed. These findings indicate that the direct influence of SV and EST on TSR is more substantial than the indirect influence through these factors.

The findings show that marketers' use of these opportunities in tourism can greatly enhance SV, ensuring visitors' return intent. Technological applications enable visitors to share real-time experiences, positively impacting their likelihood of revisiting. The study indicates that SV does not enhance EST, as tourists will share their experiences with loved ones, regardless of poor SV. This study also aims to predict future travellers' behaviour regarding TSR and EST. The research showed that TSI enhances SV, increases TSR, and boosts EST. The research also indicates SV boosts perceived quality and satisfaction, prompting TSR. Furthermore, the mediators provide insights to tourism providers on improving customer experiences, leveraging technology to foster loyalty, and promoting repeat visits, underscoring the necessity of incorporating innovative digital solutions into their strategies.

# 5. Conclusion

This research underscores the impact of digital technology on tourism, especially in promotion and marketing. Tourism is vital for economic, social, cultural, and environmental advancement, reflecting ongoing change and growth. Koo et al. (2015) highlight that digital tourism has fundamentally transformed the perception and promotion of destinations. Our inquiry focuses on the complex interconnections of TSI, SV, and EST. We seek to understand how these factors influence visitors' intentions to return to a destination. The results highlight TSI's key role in influencing SV and TSR. This study's findings align with those of Preko et al. (2022), indicating consensus among scholars on the significant impact of technology improvements on visitors'

perceptions and behaviours. This study demonstrates that TSI is vital for enhancing SV, promoting TSR, and enabling EST. The research underscores SV's strong influence on visitors' likelihood of future engagement. SV's role in shaping revisit intentions highlights the need for tourist service providers to focus on excellence in digital operations. This study adopts a novel serial mediation approach to explore TSI's impact on TSR at tourist sites, differing from prior research. Our study uniquely explores SV and EST as consecutive mediators in the TSI-TSR relationship. This study introduces a novel model, highlighting its unique contributions to tourism research. The study highlights that existing literature indicates SV enhances experience sharing via electronic word of mouth, leading to increased revisits.

Contrary to typical understanding, this research shows that SV does not affect EST. These findings suggest that factors beyond SV may play a more significant role in facilitating experience sharing among tourists. This study's findings offer practical insights for tourist service providers seeking to use digital technology solutions effectively. The study suggests that adopting and optimizing TSI can enhance SV, promote TSR, and provide positive virtual experiences.

## 6. Limitations and future research directions

Given the findings and conclusions of this study regarding the impact of TSI on TSR, it is essential to acknowledge some methodological limitations and provide recommendations for future improvements and advancements in this field. Although the present study employed purposive sampling, probability sampling methods could be utilised for future studies, increasing the generalisability of the study results. This approach improves sampling by yielding a more representative group of tourists. The cross-sectional design demonstrates the collection and analysis of data at a specific time and development stage. This design limits causal relationship inferences about variable interactions. Longitudinal research can enhance understanding of TSI's impact on TSR. Future research could incorporate variables like travellers' technology readiness and efficacy to improve the model's predictability. This study uses a quantitative research approach, limiting its ability to explore tourists perceived and felt experiences. Integrating quantitative and qualitative data collection techniques offers a clearer understanding of the phenomena. Interviews or focus groups can provide insights into tourists' experiences and perceptions that quantitative measures cannot capture.

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# Appendix 1

***Constructs and items***

| Construct and Items | Source |
|---|---|
| **Technology-Based Service Innovation (TSI):** | Yen et al., (2020) |
| TSI 1: The tourist destination provides me with the latest apps or online booking facilities. | |
| TSI 2: This tourism location has incorporated cutting-edge technologies into the services it provides. | |
| TSI 3: This tourism attraction provides state-of-the-art services. | |
| **Service Value (SV):** | Preko et al., (2022) |
| SV 1: The service is an excellent value for the money paid. | |
| SV 2: I believe that this service possesses commendable value. | |
| SV 3: The cost of this service is reasonable or affordable. | |
| **Experience Sharing through Technology (EST):** | Oliveira et al., (2020) |
| EST 1: Upon visiting tourist locations, I actively provide reviews on travel review websites. | |
| EST 2: I document my experiences at tourist sites on personal blogs and/or social media platforms. | |
| EST 3: I have posted images or videos of tourist attractions on social media sites to distribute among others. | |
| **Tourist Site Revisit (TSR):** | Song et al., (2012) & Preko et al., (2022) |
| TSR 1: I am prepared to revisit places of interest. | |
| TSR 2: I will spend money to revisit tourist destinations. | |
| TSR 3: I will attempt to revisit tourist destinations. | |
| TSR 4: I have an intention to revisit tourist sites. | |
| TSR 5: I am prepared to visit this tour site in the near future. | |

*Note.* The Appendix outlines the list of constructs and items used in the study.