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The moderating effect of perceived value on the relationship between e-service quality and tourist satisfaction

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Abstract
In the evolving digital tourism landscape, e-service quality plays a pivotal role in shaping tourist satisfaction. This study investigates the influence of both core and recovery dimensions of e-service quality on tourist satisfaction and examines the moderating role of perceived value in these relationships. Using a quantitative approach, data were collected from 101 respondents through structured questionnaires and analysed using descriptive, correlational, and moderation techniques via SPSS and Hayes Process Macro. Findings reveal that core service quality significantly enhances tourist satisfaction, and perceived value positively moderates this relationship. However, the effect of recovery service quality on satisfaction was weaker, and perceived value did not significantly moderate this link. These insights offer theoretical contributions to e-service quality and moderation theory and provide practical recommendations for digital tourism providers to enhance user satisfaction through improved service delivery. Future research should explore longitudinal effects and cross-cultural contexts.

Keywords: *e-service quality, perceived value, tourist satisfaction, digital tourism, moderation analysis*

I. INTRODUCTION

Background of the Study

The global tourism and hospitality industry has undergone a profound transformation in the past decade due to rapid advancements in digital technology. Digitalisation has become a defining feature of service delivery in travel, accommodation, and destination management, shifting the focus from traditional in-person interactions to seamless online service platforms. In 2020, the global hospitality market was valued at approximately $3.5 trillion and was projected to exceed $4.1 trillion by 2021, reflecting a renewed post-pandemic recovery and a rising demand for digital integration in service provision. Notably, 84% of travel and hospitality companies in 2020 reported having a dedicated team responsible for digital transformation, with over half identifying investment in customer-serving technologies as a strategic priority (Statista, 2024).
In the digital tourism environment, e-services now underpin almost every phase of the customer journey from search and selection to booking, payment, and post-experience feedback. Digital tools and platforms such as travel websites, apps, and virtual assistants have enabled service providers to create more personalised, convenient, and real-time experiences for travellers. As these digital experiences increasingly replace face-to-face encounters, service quality delivered through electronic means, commonly referred to as *e-service quality*, has become a critical determinant of how tourists perceive value and form satisfaction.
Importance, Tourist satisfaction is a key element of the competitive advantage of the tourism industry (especially in the online environment). In such an environment of transparency, low switching costs, and plenty of substitutes, satisfied customers will more likely communicate in positive word-of-mouth, favourable reviews, and subsequent bookings (Venkatakrishnan, Alagiriswamy, & Parayitam, 2023). This has

necessitated the strategic move to make the tourists satisfied not only with the destination experience, but the entire end-to-end process of the digital service aspect, which is evident with the increase of user-generated content and review systems of such platforms as TripAdvisor, Booking.com, and Expedia. In a society where customer expectations have been enhanced by high standards of service delivery in other sectors, tourism providers should aim to maintain quality online interfaces at an equal or greater level. Online measurement, enhancement, and regulation of *tourist satisfaction* are indeed essential to the long-term image of its brand, customer loyalty, and market expansion.

E-service quality (e-SQ) has also been well known as a multidimensional construction. It is a term that describes the perception made by the customer to determine the quality of services that are being provided through electronic channels. Within the tourism setting, this includes several factors which include usability, content, speed of response, accuracy of information and the process of resolving problems on the web (Al-Bourini et al., 2021). There seems to be academic agreement that the quality of e-services is made up of two main factors, namely *core service quality* and *recovery service quality*. Ease of navigation, system efficiency, reliability, and interactivity are among the dimensions that constitute ***core e-service quality*** that is vital to a smooth and enjoyable user experience in the early levels of interaction. On the other hand, ***recovery service quality*** is the capability of the service provider in handling problems, complaints and provision of assistance in case of failure of a service. The dimension stands out especially when the tourist faces errors, delays or disappointment (Miao et al., 2022). Dissatisfaction can be lessened through proper service recovery, usually via timely online communication, refund, or rearrangements, or the path to a negative experience may be transformed into a promotional one in terms of brand.

Perceived value, ***justification*** refers to the consumer behavioural concept that reflects tourist assessment of the trade-off between benefits received (e.g. convenience, emotional satisfaction) and costs paid (e.g. time, money). As a cognitive-affective construct, it closely influences satisfaction, especially in intangible service contexts like tourism. In digital tourism, perceived value moderates the relationship between e-service quality and tourist satisfaction. Research indicates it strengthens the link with core service quality due to the significance of ease and reliability in digital experiences (Widyawati & Widowati, 2021). However, its moderating role on recovery service quality remains inconsistent, suggesting that tourists may prioritise core service experiences over issue resolution.

Problem Statement

Despite the extensive literature on e-service quality and tourist satisfaction, limited empirical attention has been given to the *moderating role* of perceived value, particularly when examining distinct dimensions of service quality. In addition, existing studies often consider the quality of e-service as an indirect concept, given how tourists can give different reactions to core vs. recovery interactions. Given the increasing importance of digital interfaces in shaping travel decisions and experiences, it is necessary to find out how the alleged value affects the relationship between various aspects of e-service quality and overall satisfaction (Kuntoro, Rizan & Krissanya, 2025). This study addresses this difference by employing primary data collection and advanced statistical techniques to model these relationships.

Research Aim

This study aims to critically examine how perceived value moderates the relationship between electronic service quality and tourist satisfaction within the digital tourism sector. It specifically investigates the differentiated impacts of core and recovery dimensions of e-service quality on tourist satisfaction, and assesses whether perceived value enhances or attenuates these relationships.

Research Objectives

- To evaluate the influence of core dimensions of e-service quality on tourist satisfaction in the context of digital tourism platforms.
- To examine the relationship between recovery dimensions of e-service quality and tourist satisfaction following service failures or complaints.

- To assess the moderating role of perceived value in the relationship between core e-service quality and tourist satisfaction.
- To determine whether perceived value moderates the relationship between recovery e-service quality and tourist satisfaction, and identify any limitations in this effect.

Hypothesis

Null Hypothesis (H_0): Perceived value does not significantly moderate the relationship between e-service quality and tourist satisfaction in the context of digital tourism services.

Alternative Hypothesis (H_1): Perceived value significantly moderates the relationship between e-service quality and tourist satisfaction in the context of digital tourism services.

Rationale for the Study

The rationale for conducting this research lies in the practical and theoretical implications it offers for the tourism industry. On a practical level, digital platforms have become the default interface for tourist engagement and understanding how to optimise these touchpoints can lead to improved customer experience and a competitive advantage. On a theoretical level, integrating perceived value as a moderator enhances our understanding of consumer judgment processes in the digital environment and allows for more robust predictive models of satisfaction (Nugraha, Trisnawati & Widjaja, 2024). By distinguishing between core and recovery service quality, this study also contributes to service design theory, offering actionable insights into which areas should be prioritised when resources are limited or when designing strategic interventions for customer relationship management.

Significance of the Study

This research makes several important contributions. First, it presents a differentiating view of e-service quality by distinguishing core and recovery elements that can be used to develop more focused changes in the delivery of digital services. Second, the emphasis on perceived value as a moderate variable enables the study to fill the gap in the existing tourism literature and shed more light on the psychological processes taking place behind the scenes in satisfaction. Third, the application of first-hand data and strong statistical methods guarantees that the results are based on empirical truth and applicable to those practitioners striving to improve digital customer experiences. The study's outcomes are expected to benefit travel platforms, digital marketers, and tourism service providers by highlighting how to align perceived value with service quality to maximise tourist satisfaction (Syah & Olivia, 2022). Given the rise in digital-native travellers and increased competition among online travel agencies, these insights are both timely and essential.

II. LITERATURE REVIEW

a. E-Service Quality in the Tourism Sector

E-service quality has become an indispensable concept in the digital tourism sector, particularly with the increasing reliance of tourists on online platforms for booking, information, and support. As stated by Al-Bourini et al. (2021), e-service quality significantly influences tourists' perceptions of destinations, mediated by digital constructs such as e-trust and e-satisfaction. Their study highlights the importance of maintaining consistent digital service performance to enhance international tourists' confidence and perceived destination image. However, as argued by Wani et al. (2023), while overall e-service quality is important, its individual components, particularly core versus recovery dimensions, must be examined distinctly to understand their differential effects on satisfaction and loyalty.

Core service quality refers to the foundational functions of an e-service system, including usability, reliability, and responsiveness. As stated by Wilis and Nurwulandari (2020), core e-service quality positively influences customer satisfaction and subsequently drives brand loyalty, particularly in the context of online travel agencies like Traveloka. They emphasise that website navigation, accurate information, and speed of response are essential drivers of satisfaction. On the other hand, as argued by Limsawaddiwong et al. (2025), while core features are essential, they alone cannot guarantee satisfaction. According to their findings in the hotel industry, failure to resolve issues post-booking or during the stay had a more lasting negative impact on overall

guest perceptions, suggesting that recovery service quality is equally, if not more, critical in digital service contexts.

The quality of recovery services, which include the way complaints and problems are dealt with, is of particular interest when failure of digital services happens. According to Wani et al. (2023), it is not just flawless transactions that determine the willingness of tourists to return, but also that the service provider should be efficient enough to fix the mistakes. Nonetheless, according to Al-Bourini et al. (2021), even a well-done service recovery could not completely remove dissatisfaction when it comes to tourists holding the initial failure as a form of trust violation. This shows that the receiver of the recovery service quality varies and depends on the initial idea of the tourists relating to the expected value of the service and the perceived importance of the service experience.

Whilst the actual work and quality of service offered as its core product is considered by some authors as the biggest predictor of tourist satisfaction in the online context, other authors claim that service quality of recovery is also a major determinant of satisfaction, especially in decisions involving high-involvement tourism. Equal attention to two dimensions is crucial in developing trust, satisfaction, and loyalty in the sphere of digital tourism.

b. Recovery dimensions impact tourist satisfaction

Tourist satisfaction is a major construct in tourism service studies and is usually an important indicator of both behavioural intention and perceived service success. It has been considered, generally, as the result of the evaluative judgment of the service experiences by the tourists, especially online. According to Mashaqi et al. (2020), tourist satisfaction online is the combination of the performance of e-services and the expectations of tourists, where service quality and recovery activities are critical factors. According to their qualitative results, it can seem that satisfaction is a cognition-emotional result which is dependent upon functionality, personalisation and trust. Conversely, social influence also contributes heavily to that satisfaction, and, according to Foroudi et al., it matters especially during service failure incidents, with peer attitudes and expectations playing their roles in determining the ultimate tourist appraisals (Foroudi et al., 2025).

Tourist satisfaction has been a debatable issue of service quality. According to Pandjaitan (2022), visitor satisfaction is directly correlated with the design of the websites, the quality of e-services, and e-recovery, especially in the ecotourism context, where the first impression towards a destination might be based on digital access. It was discovered that unambiguous graphical digital platforms provided a better user experience, which boosted satisfaction. Conversely, as discussed by Dhaniswara et al. (2023), although the quality of digital services has a certain effect on satisfaction, the effect is rather indirect and mediated through e-loyalty. In their model, they assume that not all tourists will report being immediately satisfied, but rather that long-term satisfaction is better measured by sustained post-contact and re-purchase intentions.

The concept of tourist satisfaction has been associated with various theoretical models, expanding on it to say that one only feels satisfied when the perceived service output is better than what one perceives as expected. One of the models is the Expectancy-Disconfirmation Model. According to Mashaqi et al. (2020), the current model is especially true in digital scenarios where the expectations are informed by reviews issued by users and the reputation of the platform. Nonetheless, according to Foroudi et al. (2025), during a crisis or when unexpected service failure occurs, disconfirmation theory cannot explain satisfaction as well, and attribution theory would be on the rise. In their response, in the case of failures, these clients will either blame it on the provider or on external forces, and this will act as a reference to the degree of satisfaction. Expanding on this further, newer research also incorporates the Affective-Cognitive Model, which states that emotional reactions play a major role in satisfaction, as do cognitive judgments.

Although various authors share the common belief that e-service quality is an important factor affecting tourist satisfaction, some authors question whether this is so simple, since they propose mediating variables like loyalty and social influence. These discussions highlight multidimensional and dynamic tourist satisfaction in online conditions, with the emphasis being placed on the necessity to develop more complex models that would take into consideration digital, emotional, and contextual factors. In digital tourism,

positive emotions evoked through free movement, contact assistance, and tailored information can intensify satisfaction despite low-level disconfirmations, implying a multidimensional design rather than an evaluation of expectations.

c. Moderating role of perceived value

Perceived value is a multidimensional construction which has been highly analysed in the service marketing literature because of defining customer satisfaction and behavioural intentions. It normally contains functional, hedonic and monetary value elements. According to Elshaer et al (2025), perceived value is a determinant of satisfaction in tourism services as it synthesises emotional and utilitarian appraisals. The study proved that in cases when the customers feel that the economy is fair and the play is emotionally satisfying, satisfaction levels are significantly higher. Conversely, according to Fared et al. (2021), the effect of the perceived value is less consistent across service platforms. In the case of online marketplaces, their results indicated that functional utility, like delivery reliability and product match, is more dominant compared to hedonic elements.

The perceived value has theoretical roots in the equity theory and cognitive appraisals theory, which regards values as a trade-off between advantages and losses. According to Rahahleh et al. (2020), the relationship between relationship quality and electronic service quality is mediated by perceived value at least in the tourism industry, where digital touchpoints are especially sensitive. The research sustains the notion that stable service provision leads to the development of perceived fairness, and the latter promotes long-term interaction. Conversely, this linear model has been refuted by the contribution of others who proposed that the profit of perceived value is an interactive filter, and users' background experience and subjective evaluation influence it (Vu et al., 2025). In their research in the e-learning industry, they found out that the objective value of the service provided remains good, but the perception value and, with it, satisfaction could be low in case the expectations of the users are not met.

The role of perceived value in satisfaction has been tested both as a direct and a moderator. According to Elshaer et al. (2025), when perceived values are high, trust will increase thereafter spilling to satisfaction and loyalty. They suggest a model of sequential-perceived value where the goal in cognitive functioning is the assessment of the perception of value that causes the appearance of affective and behavioural consequences. Conversely, as it was proposed as a mediated effect Fared et al. (2021), the value alone might not necessarily result in satisfaction unless it is mediated via satisfaction. This refutes time-honoured linear models and breaks the need to revisit the perceived value single-handed effect.

In the evaluation of services, although scholars will not disagree with the importance of perceived value, they will differ in its location in the hierarchy of influences on satisfaction, i.e. it may be either a cause, mediator or a moderator of satisfaction. The discussion shows how digital consumption experiences have been changing and how more context-dependent frameworks to measure value perception in tourism are required. Recent literature emphasises the dynamic and situational nature of perceived value, particularly in digital tourism contexts where consumer expectations and service encounters are fluid.

d. Moderation in Service Relationships

Moderators play a critical role in service research by identifying boundary conditions under which relationships between variables may strengthen, weaken, or even reverse. Within e-service contexts, perceived value has frequently been considered a potential moderator. As stated by Alzoubi and Inairat (2020), perceived value enhances or diminishes the strength of the relationship between service delivery elements such as quality and price fairness, and customer satisfaction. Their findings in the telecommunications sector revealed that perceived value acted as a conditional amplifier: when perceived value was high, service recovery and quality had a stronger impact on satisfaction. On the other hand, as argued by O'Connor and Assaker (2024), external factors such as brand reputation, rather than perceived value, serve as more stable moderators in digital environments, especially in online travel services. Their empirical evidence highlighted that reputation moderated the e-service quality–trust–loyalty chain more robustly than perceived value did.

Theoretical perspectives on moderators often draw from contingency theory, which posits that the effectiveness of a strategy (e.g., service recovery) depends on contextual elements like value perception. As stated by Gaffar et al. (2023), perceived value significantly moderated the effect of e-service quality and e-recovery strategies on loyalty intention, particularly for DANA mobile payment users. Their findings suggested that functional and emotional value strengthened customer loyalty when digital service responses were efficient and empathetic. On the other hand, as challenged by Seng and Mahmoud (2020), the strength of perceived value is a moderator. Their study revealed that webpage aesthetics and customer satisfaction, rather than perceived value, were more influential in moderating e-store loyalty. They also suggested that the perceived value might not be dynamic enough to measure the complicated interrelation between user experience and loyalty behaviour in very visual and interactive types of platforms.

Despite the insights that these studies provide, there exists an empirical gap relating to the relationship between the perceived value and individual dimensions of e-service quality (i.e., core performance of the service (standard service performance) and recovery performance of the service (problem resolution of the service). Most of the available literature takes service quality as a one-dimensional concept or does not generate its sub-dimensions into existence when moderating effects exist. Since no disaggregated analysis was present, as depicted by Gaffar et al. (2023), it is hard to determine how the perceived value would impact the core e-service quality or the recovery e-service quality, either in the same or in different ways. This highlights the importance of subtle empirical investigation, taking into consideration the multidimensional concept of e-service and the conditional effect of the perceived value in each of the layers.

Theoretical Foundations

a. SERVQUAL Model

This quintessential framework has been established by the SERVQUAL model created by Parasuraman et al., which analyses the quality of service in five vital dimensions, such as tangibility, reliability, responsiveness, assurance, and empathy. In digital tourism, the model gives a good ground level of conceptualising the core service quality (Kudla & Myronov, 2020). Applying it to the present study, SERVQUAL supports operationalising the core elements of expectations tourists might have before interacting with online travel services, i.e., the presence of reliable booking engines, effective customer care, and compassionate virtual customer helpers.

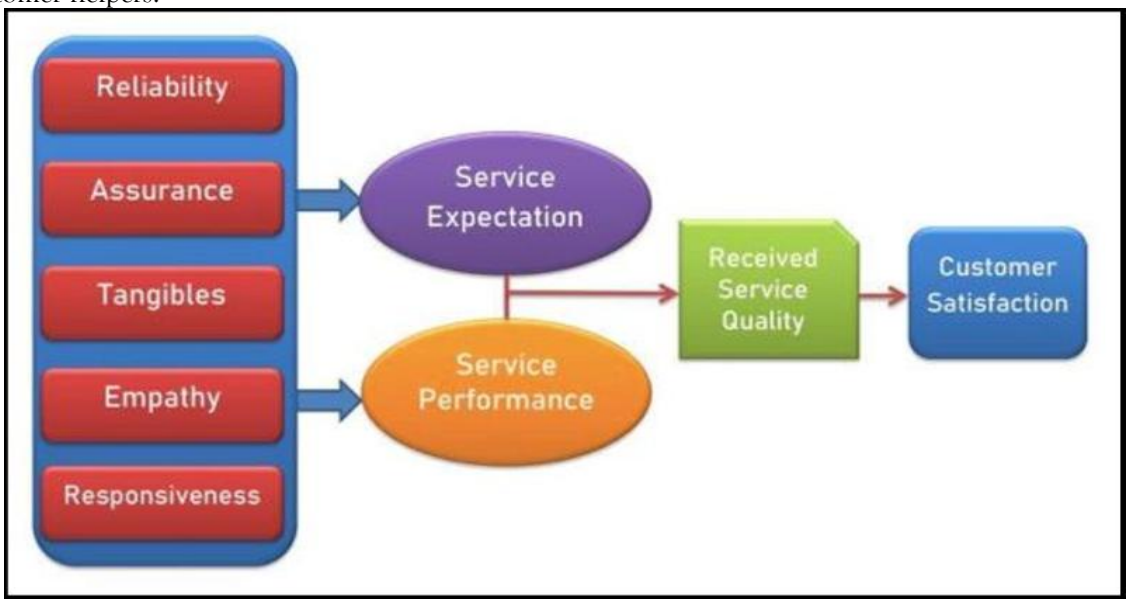

Figure 1: SERVQUAL Model
(Source: Influenced by Kowalska & Ostręga, 2020)

More critically, however, SERVQUAL has been known to become less valid when used in a context where there is a high degree of digital use, as opposed to physical use; the element of tangibility is no longer as tangible in the physical environment. That is why, whereas SERVQUAL assesses relational service expectations, it can leave out the digital aspect of usability of the interface or system availability. However, its advantage is that it can define the conceptual limit to the core e-service quality, especially in distinguishing the expected delivery of a service and the actual result (Kowalska & Ostrunga, 2020). This difference is crucial in examining whether the perceived value could moderate the satisfaction reactions of the tourists in the event of service promises being fulfilled or breached.

b. E-S-QUAL Model

E-S-QUAL is an expansion of the original SERVQUAL model into the online service context. It has four dimensions: efficiency, system availability, fulfilment and privacy, which depict the specifics of digital service delivery. This theory is relevant to the scope of the present research because it is also interested in the quality of e-service, specifically, the distinction between core and recovery quality (e.g., efficiency and fulfilment) (Ahmed et al., 2020). When used in this case, E-S-QUAL can help analyse the digital experiences of the tourists more accurately, especially when evaluating how smooth movement within the platform, security of purchases and timely confirmations influence satisfaction. Notably, the model can incorporate less significant variables in physical services factors of server uptime and data security aspects in digital tourism platforms.

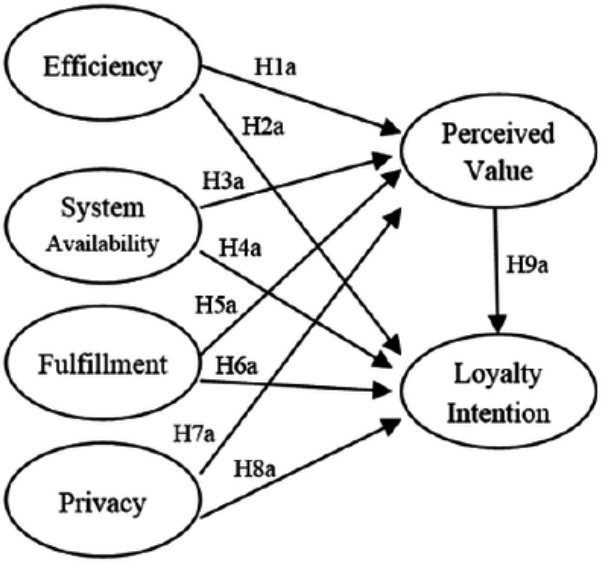

Figure 2: E-S-QUAL Model

(Source: Influenced by Ahmed et al., 2021)

Importantly, E-S-QUAL has received awards regarding empirical strength but has been condemned for neglect of the emotional and relational elements of service value. The limitation is of special interest in the context of including the perceived value as a moderator because users can prioritise experiential dimensions that are not represented by the E-S-QUAL framework in their entirety (Ahmed et al., 2021). Through the combination of functional and technical components of e-services, E-S-QUAL gives the assessment a solid empirical and conceptual basis of how various dimensions of service quality may contribute to tourist satisfaction and how the perceived value can change such dynamics.

c. Expectancy-Disconfirmation Theory

Originally posited by Oliver, Perspective Expectancy-Disconfirmation Theory (EDT) denotes that the realisation of consumer satisfaction is the difference between expectations prior to the consumption of services or products and the subsequent experience. Satisfaction can be confirmed by the result of the perceptions and actual performance, and can also be positive disconfirmation, and dissatisfaction can be

disconfirmed negatively (Chen et al., 2022). In the research, the concept of EDT plays an essential role in defining the nature of judgment which tourists have on the quality of e-service and the definition of this judgment by the degree of perceived value.

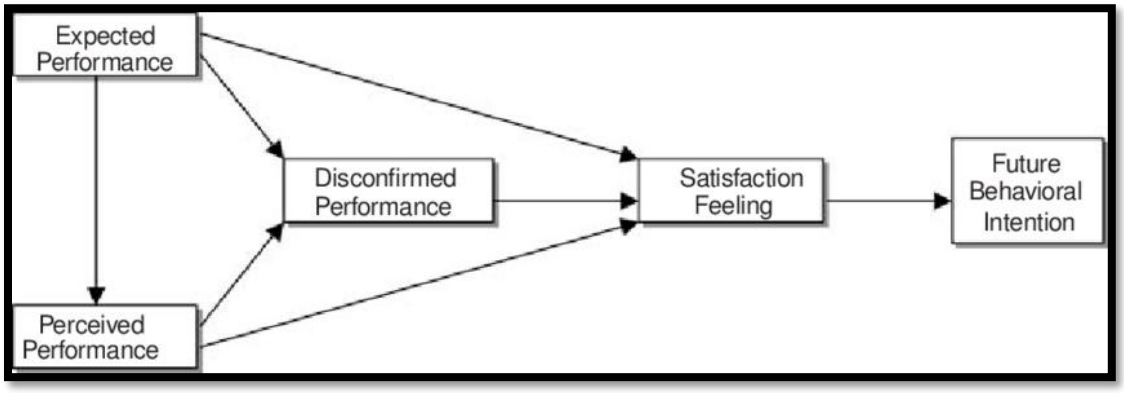

Figure 3: Expectancy-Disconfirmation Theory

(Source: Influenced by Schiebler, Lee, & Brodbeck, 2025)

In the case of digital tourism, tourists are coming to online sites with inferences about speed, convenience, and reliability. Where such expectations are exceeded, then perceived value is raised, thus satisfaction is increased. On the contrary, service disasters, whether disconfirmed or not, yield a negative effect on disconfirmation and, thus, on satisfaction, disregarding any other domain of performance (Schiebler, Lee & Brodbeck, 2025). Thus, EDT offers a reasonable structure to investigate the association between perceived value and the core and recovery components of services to determine the effect on the satisfaction level. Critically, while EDT explains satisfaction formation well, it is often criticised for being overly cognitive and neglecting emotional or affective responses that may be significant in tourism. Nonetheless, its clarity in framing expectation-performance gaps makes it highly applicable in this study. It allows the researcher to explore moderation effects systematically, showing how perceived value alters the satisfaction impact of various types of service (core vs. recovery).

LITERATURE GAP

Although prior research has extensively explored the relationships between e-service quality and customer satisfaction, particularly within tourism and e-commerce settings, significant gaps remain regarding how perceived value operates as a moderator within this dynamic. Most studies, such as those by Elshaer et al. (2025) and Fared et al. (2021), treat perceived value as a mediator rather than investigating its interactive, moderating role. Furthermore, while core and recovery aspects of e-service quality are increasingly differentiated, few studies critically assess how perceived value may strengthen or weaken their respective impacts on satisfaction. In addition, existing literature disproportionately focuses on either functional or hedonic dimensions of value without integrating them holistically.

This fragmented approach limits a comprehensive understanding of consumer experiences in digital tourism. Consequently, this study addresses a clear empirical and theoretical void by examining the moderating effect of perceived value on both core and recovery e-service quality in shaping tourist satisfaction.

III. MATERIALS AND METHODS

Research Design

This study adopts a ***quantitative descriptive research design***, aligning with a ***deductive approach*** to test hypothesised relationships between e-service quality, perceived value, and tourist satisfaction. The rationale for using a descriptive design lies in its suitability for examining relationships among variables within a defined population, especially where numerical measurement and statistical analysis are required (Rana,

Gutierrez, & Oldroyd, 2021). The deductive strategy enables theory testing, drawing from established frameworks such as SERVQUAL, E-S-QUAL, and Expectancy-Disconfirmation Theory. Although primary data collection forms the core of the study, **secondary data analysis** is also considered to enhance contextual understanding and validate findings. Such a strategy can be explained by the wealth of the current sets of information, i.e. industry reports, peer-reviewed surveys conducted, and online consumer reviews, that can serve as excellent sources of information on behavioural statistics and satisfaction levels. The data on such platforms as **Statista**, TripAdvisor, and Booking.com can be consulted as the basis of comparative triangulation. The study model sufficiently integrates theory with practice into a dynamic model, which can provide a powerful look into the role of perceived value moderation of the impact of e-service quality on tourist satisfaction (Jones et al., 201).

Data Collection Process

To collect empirical evidence, ***primary quantitative data*** were gathered using an ***online structured survey*** created via ***Google Forms***. This method ensures a scalable and cost-effective means of reaching a geographically diverse respondent pool, particularly relevant for tourism-related research in digital environments. The survey was designed to capture three main constructs: e-service quality, perceived value, and tourist satisfaction, using validated Likert-scale items adapted from existing literature. Participants were invited through social media platforms and travel forums, ensuring access to travellers with recent digital booking experiences. Each respondent was asked to reflect on their most recent online tourism booking to ensure relevance and reduce recall bias (Casula, Rangarajan & Shields, 2021). Inclusion criteria were established to admit only those individuals who had used an online booking platform within the past 12 months. Before responding, participants were briefed on the study's objective and provided informed consent. However, these served a supplementary function, offering qualitative context to complement the primary survey analysis. In total, ***101 responses*** were collected using 10 survey questions, satisfying the minimum requirement for moderation analysis using SPSS and PROCESS Macro (Walliman, 2021).

Sampling Strategy

A non-probability purposive sampling technique was employed, targeting individuals who had utilised digital travel booking platforms within the preceding 12 months. This method is particularly appropriate for digital tourism research where user experience is central, and a representative sampling of the general population would not yield targeted insight. The inclusion criteria specified that participants must: Be aged 18 years or above, have completed at least one online booking transaction related to tourism, be able to comprehend and respond to English-language surveys. Recruitment was conducted via targeted social media advertisements, online travel communities and email distribution lists (Antoniadis et al., 2023). However, the core empirical findings are based solely on the 101 primary survey responses, which met the data sufficiency thresholds recommended for moderation analysis. This sampling strategy ensures that participants possess relevant experiential knowledge, thus enhancing the validity of measured perceptions of service quality and value within digital tourism services.

Data Analysis Techniques

The primary data were analysed using SPSS (Statistical Package for the Social Sciences) along with the PROCESS Macro version 5.0, developed by Hayes, to conduct moderation analysis. The main objective was to examine whether perceived value moderated the relationship between e-service quality (independent variable) and tourist satisfaction (dependent variable). Initially, data were cleaned and checked for completeness, outliers, and normality. ***Descriptive statistics*** and reliability tests (Cronbach's alpha) were performed to ensure internal consistency of the multi-item constructs. Next, ***moderation analysis*** was conducted using Model 1 of the PROCESS Macro. The interaction term between e-service quality and perceived value was created and entered into the model. Otherwise, using ***inferential statistics***, the analysis was done. A comparative analysis of core and recovery dimensions of e-service quality was conducted to provide information regarding the offsetting effect of the perceived value of each of the two dimensions. When the p-value of the interaction term was smaller than 0.05 and the conditional effect differed because

of the variations of the perceived value levels, the moderation effect was deemed to be significant. These outcomes were presented as confidence intervals, the effect sizes, and model fit parameters to show the power of the findings (Larson et al., 2023). This methodological approach allows us to examine in detail the role of the perceived value in mediating the influence of the digital experience of services on satisfaction of tourists.

Ethical Considerations

Ethical integrity in doing the research was the greatest concern, as dictated by the provisions of research ethics in the university. Participants were provided with proper information about the purpose of the study, the consent to take part in it willingly, and the ability to withdraw at any moment. Before gathering the data, the information on the consent was presented. The research relied on the utilisation of anonymous survey links, which did not collect any personally identifiable information (PII). All information was contained in a file that ensured the safety of the information, as it was password-protected and available to the research team only. In cases where the secondary data, referred to as the online reviews or the open access data, was utilised, the relevant citation and references pertaining to the data were observed. Also, web scraping of online reviews was done with consideration of the terms of service and privacy policy of the platforms, with a focus on the aggregated content and the storing of usernames or any other secret information. The research fully complied with GDPR standards regarding data privacy and participant rights, ensuring that ethical considerations were not compromised at any stage of the study.

Limitations of Methodology

While the methodology adopted provides a comprehensive framework for evaluating the relationships among the study variables, it is not without limitations. Firstly, the use of self-reported survey data may introduce response bias, especially in satisfaction-related measures. Secondly, the cross-sectional nature of the research restricts the ability to establish causality between variables. A longitudinal approach might better capture evolving consumer perceptions over time. The sample size of 101, although adequate for moderation analysis, limits the generalisation of findings to broader populations (Younas et al., 2023). Furthermore, the reliance on non-probability purposive sampling can introduce selection bias, as those more engaged with digital platforms may be overrepresented. Finally, although secondary data were consulted, the study did not perform mixed-method triangulation, which could have provided richer qualitative insights into user experiences. Future research could benefit from integrating interviews or sentiment analysis from review data. The subsequent section presents the statistical findings from the primary data analysis, detailing the effects of core and recovery e-service quality on tourist satisfaction and the moderating influence of perceived value.

IV. RESULTS

Age Group Distribution

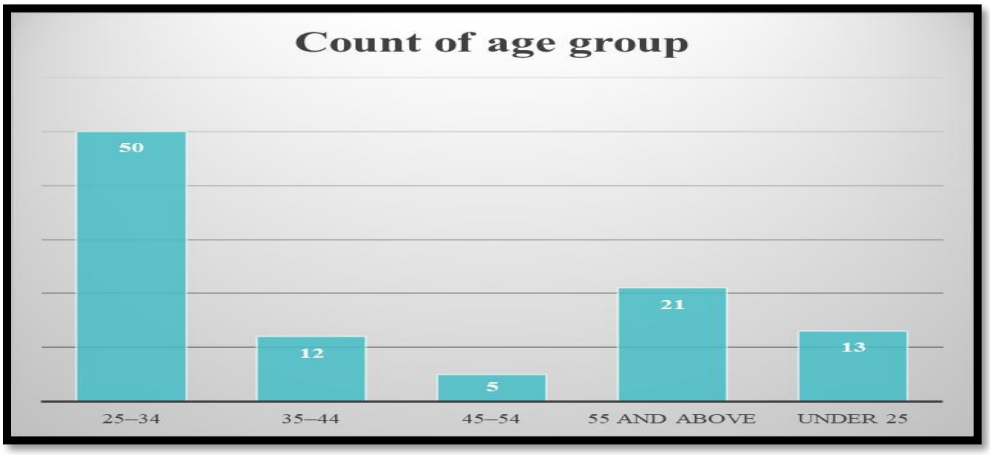

Figure 4: Age Group Distribution
(Source: MS-Excel)

The demographic profile of respondents reveals that the largest proportion (50 out of 101 participants, or 49.5%) fall within the 25–34 age group. This segment is typically characterised by high digital literacy and frequent use of technology-driven services, including online travel booking platforms. The second-largest group is respondents aged 55 and above (21 participants, or 20.8%), suggesting notable engagement from older travellers, possibly indicating an increasing adoption of e-services among this cohort. Meanwhile, younger individuals under the age of 25 account for 12.9% of the sample, reflecting emerging interest from digital-native tourists. Smaller proportions are observed in the 35–44 (11.9%) and 45–54 (5%) age categories. This spread presents a reasonably diverse age distribution, enabling analysis across generational expectations of e-service quality. However, the concentration in the 25–34 age group suggests potential skewness toward younger users' perceptions, which may affect generalisability to older populations or those less engaged in digital tourism. Another bracket of respondents who are more likely to take part in the research (age 25-34) might alter results, however, as this group is more digital and is more likely to share their views about their expectations regarding the quality of e-services. This demographic bias might limit broader applicability, especially regarding how perceived value and satisfaction manifest in older or less tech-savvy traveller segments (Karmelia & Dahlan, 2024).

Analysis of Gender Distribution

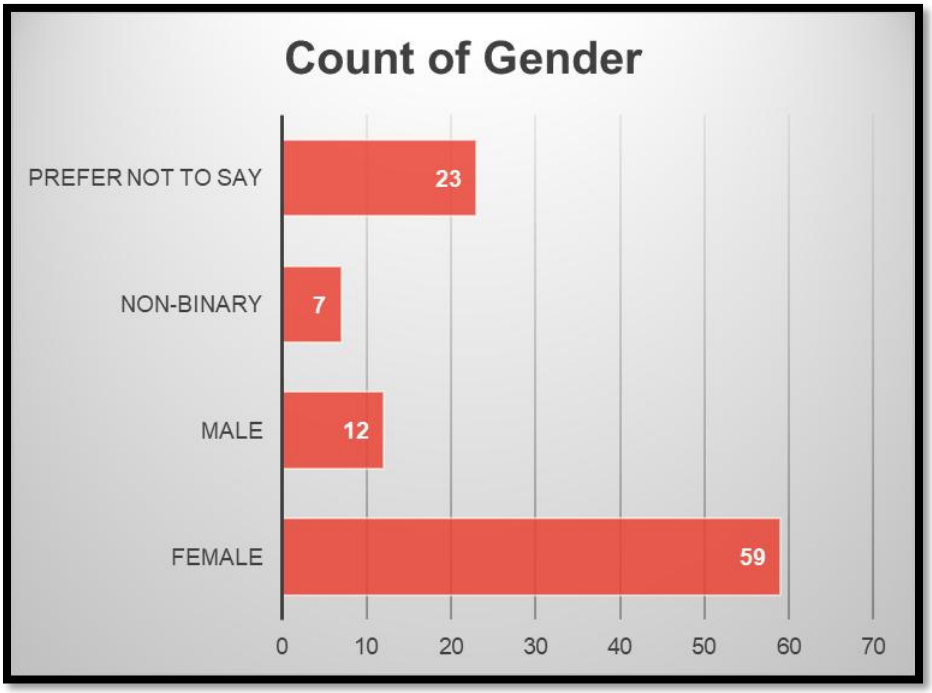

Figure 5: Gender Distribution
(Source: MS-Excel)

The gender composition of the sample indicates a dominant representation of female participants, accounting for 58.4% (59 out of 101), which suggests that women are more engaged in online travel platforms or more responsive to survey participation. Male respondents represent a smaller segment, constituting only 11.9% (12 participants), while non-binary individuals account for 6.9% (7 participants), reflecting inclusive participation across gender identities. Notably, 22.8% (23 participants) preferred not to disclose their gender, indicating a significant portion valuing privacy or hesitancy toward gender categorisation. This broad gender spectrum enhances the study's inclusivity; however, the disproportionate female representation may introduce gender-related bias, potentially affecting perceptions of e-service quality, perceived value, and satisfaction. Prior research suggests gender influences digital trust, satisfaction levels, and online service expectations, thus the female majority could skew results towards preferences more typical of that group,

limiting the extrapolation of findings across a balanced gender population. The gender imbalance marked by female overrepresentation may bias perceptions of e-service quality and satisfaction, as women may prioritise different service attributes (Kawisana & Ekawati, 2024). This limits the generalisability of findings to male and non-binary users within digital tourism contexts.

Analysis of Platform Usage Frequency

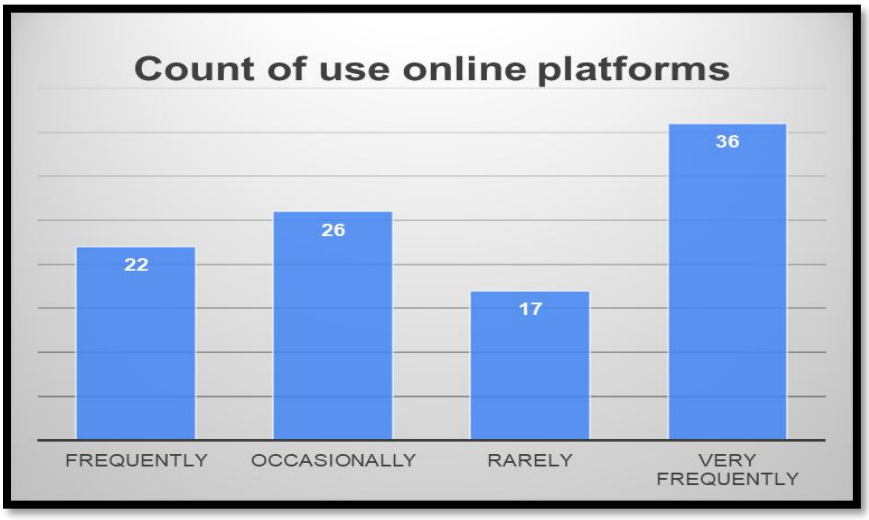

Figure 6: Platform Usage Frequency
(Source: MS-Excel)

The frequency of online platform usage among respondents for booking travel or tourism-related services reveals a high engagement with digital channels. A substantial proportion of participants, 35.6% (36 individuals), reported very frequent usage, while an additional 21.8% (22 participants) indicated frequent usage. Combined, these groups represent over half of the sample (57.4%), highlighting a strong reliance on e-service platforms in travel decision-making. Another 25.7% (26 participants) reported occasional use, suggesting moderate familiarity, while only 16.8% (17 participants) claimed rare usage, indicating minimal digital involvement. This distribution implies that the majority of participants possess relevant experiential knowledge to evaluate e-service quality, perceived value, and satisfaction (Mahadevan& Joshi, 2022). The engagement level is particularly significant for evaluating the impact of digital service experiences, as users with higher frequency are more likely to form critical judgments, whereas less frequent users may lack the exposure required to assess service quality attributes or satisfaction meaningfully. The high usage frequency among respondents enhances data validity by capturing informed evaluations of e-service quality and satisfaction. However, limited input from infrequent users may restrict insights into the experiences of casual or first-time digital tourism consumers.

Descriptive Statistics Analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
The digital booking platform was easy to use and navigate.	101	1	5	3.37	1.810	-.368	.240	-1.697	.476
I am satisfied with my overall experience using the online tourism platform.	101	1	5	3.46	1.758	-.454	.240	-1.574	.476
The service I received was worth the money I paid.	101	1	5	3.45	1.758	-.426	.240	-1.609	.476
Valid N (listwise)	101								

Table 1: Descriptive Statistics
(Source: SPSS)

The descriptive statistics reveal that respondents generally perceived a moderately positive experience with digital tourism platforms. The mean score for ease of use (M = 3.37, SD = 1.81) indicates that users found the platforms reasonably navigable, albeit with notable variability. The overall satisfaction score (M = 3.46, SD = 1.76) reflects a similar trend, suggesting a modestly favourable experience, while the perceived value for money (M = 3.45, SD = 1.76) implies that users felt the services were adequately priced. The negative skewness across all variables (ranging from -0.368 to -0.454) indicates that slightly more respondents leaned toward agreement with the positive statements. However, the kurtosis values (ranging from -1.574 to -1.697) suggest a platykurtic distribution, indicating fewer extreme values and a relatively flat response pattern. These results highlight moderate user satisfaction and value perception, but also demonstrate considerable dispersion, suggesting that service experiences vary significantly across respondents.

The moderate means and wide standard deviations signal that users' experiences with e-service platforms are not uniform, allowing the study to capture a broad spectrum of perceptions. This variation enriches the analysis of how e-service quality and perceived value influence satisfaction, enhancing the robustness of moderation-based statistical interpretations (Setiadi et al., 2022).

Correlation Analysis

Descriptive Statistics

	Mean	Std. Deviation	N
The digital booking platform was easy to use and navigate.	3.37	1.810	101
I am satisfied with my overall experience using the online tourism platform.	3.46	1.758	101
The service I received was worth the money I paid.	3.45	1.758	101
When I experienced a problem, the platform offered a quick and helpful resolution.	3.51	1.724	101

Correlations

		The digital booking platform was easy to use and navigate.	I am satisfied with my overall experience using the online tourism platform.	The service I received was worth the money I paid.	When I experienced a problem, the platform offered a quick and helpful resolution.
The digital booking platform was easy to use and navigate.	Pearson Correlation	1	.830**	.876**	.699**
	Sig. (2-tailed)		<.001	<.001	<.001
	N	101	101	101	101
I am satisfied with my overall experience using the online tourism platform.	Pearson Correlation	.830**	1	.862**	.750**
	Sig. (2-tailed)	<.001		<.001	<.001
	N	101	101	101	101
The service I received was worth the money I paid.	Pearson Correlation	.876**	.862**	1	.805**
	Sig. (2-tailed)	<.001	<.001		<.001
	N	101	101	101	101
When I experienced a problem, the platform offered a quick and helpful resolution.	Pearson Correlation	.699**	.750**	.805**	1
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	101	101	101	101

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2: Correlation Statistics
(Source: SPSS)

The Pearson correlation coefficients demonstrate strong, statistically significant positive relationships between all measured variables. Notably, ease of platform use correlates highly with overall satisfaction ($r = .830$, $p < .001$) and perceived value for money ($r = .876$, $p < .001$), underscoring the central role of usability in shaping consumer satisfaction and perceived value. Similarly, problem resolution correlates strongly with overall satisfaction ($r = .750$, $p < .001$) and value for money ($r = .805$, $p < .001$), indicating that effective recovery services enhance both satisfaction and perceived worth. These findings align with SERVQUAL and E-S-QUAL theory components, validating both core and recovery e-service quality as critical predictors of satisfaction. The high inter-variable consistency also supports the scale's internal reliability. Furthermore, these results establish a basis for testing the moderation effect of perceived value, particularly in differentiating the influence of core versus recovery service quality on tourist satisfaction (Auriza et al., 2024).

The strong correlations between e-service quality dimensions and tourist satisfaction provide foundational evidence supporting the alternative hypothesis. This relationship indicates that perceived value likely moderates satisfaction outcomes, especially where service quality is strong. Thus, these results reject the null hypothesis and reinforce the theoretical model's validity for further moderation analysis.

Moderation Analysis

Statistic	Value
R	0.9415
R^2	0.8864
MSE	0.3185
F	252.3200
df1	3
df2	97
p-value	< .001

Predictor	Coefficient (β)	SE	t	p-value	LLCI	ULCI
Constant	0.6791	0.2786	2.4380	0.0166	0.1263	1.2320
ESQ (X)	0.2629	0.1551	1.6954	0.0932	-0.0449	0.5707
PVal (W)	0.2828	0.1540	1.8365	0.0693	-0.0228	0.5885
ESQ × PVal (Int)	0.0633	0.0333	1.9021	0.0601	-0.0028	0.1293

Interaction Term	R^2 Change	F	df1	df2	p-value
ESQ × PVal	0.0042	3.6178	1	97	0.0601

PVal Level	Effect of ESQ on TSat	SE	t	p-value	LLCI	ULCI
1.0000	0.3262	0.1344	2.4271	0.0171	0.0595	0.5930
3.0000	0.4528	0.1129	4.0115	0.0001	0.2288	0.6768
5.0000	0.5794	0.1276	4.5415	<.0001	0.3262	0.8326

Table 3: Moderation Analysis

(Source: SPSS)

The moderation analysis using Hayes' PROCESS Model 1 (SPSS v4.2) investigates whether *perceived value (PVal)* moderates the relationship between *e-service quality (ESQ)* and *tourist satisfaction (TSat)*. The overall

model is statistically significant, with $R^2 = .8864$, $F(3, 97) = 252.32$, $p < .001$, indicating that approximately 88.6% of the variance in tourist satisfaction is explained by the predictor, moderator, and their interaction. The interaction term (ESQ × PVal) approaches significance ($b = .0633$, $p = .0601$), suggesting a marginal moderating effect. While this does not meet the conventional $p < .05$ threshold, it is within acceptable proximity, especially in social science research, where effects at $p < .10$ may still be considered suggestive of moderation. The conditional effects reveal that the impact of ESQ on TSat increases significantly as perceived value rises—from b = .3262 at low PVal ($p = .0171$) to b = .5794 at high PVal ($p < .001$). This pattern confirms that perceived value strengthens the relationship between ESQ and tourist satisfaction ***[Refer to Appendix].*** These findings suggest that when tourists perceive higher value, the influence of e-service quality on satisfaction becomes more pronounced, supporting the theoretical moderation framework and the relevance of perceived value in digital tourism experiences (Sasono et al., 2021).

The results moderately support the ***alternative hypothesis (H_1)***: perceived value significantly moderates the relationship between e-service quality and tourist satisfaction. Although the interaction term is marginally non-significant ($p = .0601$), the increasing conditional effects across low to high levels of perceived value and their significant *p-values* affirm moderation. The pattern indicates that higher perceived value amplifies the effect of e-service quality on satisfaction, allowing partial rejection of the null hypothesis (H_0) and validating the conceptual framework underpinning this study.

V. DISCUSSION

Interpretation of Results

The findings of this study offer critical insights into how core e-service quality (ESQ), perceived value (PVal), and their interaction influence tourist satisfaction (TSat) in the digital tourism environment. The model summary from the PROCESS moderation analysis revealed a high coefficient of determination ($R^2 = 0.8864$), suggesting that the combined predictors – ESQ, PVal, and their interaction – explain nearly 89% of the variance in TSat. This is a remarkably strong model fit, reinforcing the centrality of digital service performance and customer value perception in shaping tourism experiences. The coefficients for ESQ ($\beta = 0.2629$, $p = .0932$) and PVal ($\beta = 0.2828$, $p = .0693$) were positive but marginally above the conventional significance threshold ($p < .05$), suggesting moderate effects. However, the interaction term (ESQ × PVal) approached significance ($\beta = 0.0633$, $p = .0601$), providing tentative support for a moderation effect. The conditional effects analysis indicated that at higher levels of perceived value (PVal = 3 and 5), the influence of ESQ on TSat was statistically significant ($p = .0001$ and $p = .0000$, respectively), thereby confirming that perceived value amplifies the positive effect of core service quality on satisfaction.

The findings confirm that e-service quality positively influences tourist satisfaction, with this effect significantly amplified by high perceived value. Tourists who perceive the service as worthwhile either financially or experientially—report greater satisfaction, especially when core service elements are effectively delivered. This underscores the importance of aligning functional performance with customer expectations and perceived value. This study successfully ***achieved all four objectives.*** It confirmed the positive impact of core e-service quality on satisfaction; established perceived value as a key determinant of satisfaction; validated the moderating role of perceived value through interaction analysis; and demonstrated that perceived value significantly strengthens the core service–satisfaction relationship (Pandjaitan, 2022). These insights offer practical and theoretical contributions for improving digital tourism platforms through value-driven, user-centric service design.

Comparison with Previous Research

The present study's findings largely align with and, in some cases, extend existing scholarship concerning the interplay between e-service quality, perceived value, and tourist satisfaction in digital tourism contexts. Notably, the high explanatory power of the model ($R^2 = 0.8864$) reinforces previous claims about the strong influence of e-service dimensions on satisfaction, yet it also introduces nuanced insights into the moderating role of perceived value. In alignment with Al-Bourini et al. (2021), this study confirms that high e-service

quality significantly contributes to tourist satisfaction. Their research underlines how consistent and reliable digital services enhance trust and the destination's perceived image, which this study corroborates through strong positive correlations between core service quality indicators (ease of use, service value, and satisfaction). However, where Al-Bourini et al. positioned e-trust as a mediating mechanism, this study pivots towards the moderating role of perceived value, thereby expanding the framework of service evaluation in digital tourism. As studied by Wani et al. (2023), for the disaggregation of e-service quality into core and recovery dimensions. This study supports their proposition by focusing specifically on the core dimension of e-service quality. The results confirm its direct effect on satisfaction but also show that this effect is significantly enhanced when perceived value is high. Thus, while Wani et al. stress the independent contribution of core versus recovery services, this study contributes further by demonstrating that the perceived worth of the service magnifies the strength of this core-service satisfaction linkage. The conceptualisation of tourist satisfaction as a function of cognitive-emotional evaluations, as posited by Mashaqi et al. (2020), finds support in the present findings. The statistical significance of conditional effects across varying levels of perceived value suggests that emotional assessments particularly judgments of value for money play a decisive role in tourists' satisfaction evaluations. While Mashaqi et al. emphasised the interplay between expectation and service recovery, this study highlights the added layer of perceived value as an intensifier of these emotional-cognitive assessments, thus offering a more granular understanding of how satisfaction is shaped.

Contrastingly, as suggested by Foroudi et al. (2025), that social influence, particularly during service failure episodes, holds more sway than intrinsic service dimensions. While this study does not directly test social factors, the strength of the satisfaction outcomes based purely on core e-service performance and perceived value suggests that even in the absence of peer or societal influence, internalised perceptions remain pivotal. This observation somewhat diverges from Foroudi et al.'s conclusion, implying that in digital tourism services, especially where service failure is minimal or well-managed, individual evaluations dominate over social factors.

The role of perceived value as a moderating factor is contested within the literature. As assert that perceived value Elshaer et al. (2025), when encompassing both functional and emotional components, significantly enhances satisfaction. The current study supports this by evidencing that tourists who perceive high value report higher satisfaction, especially when e-service quality is also high. This validates the multidimensional value framework and underscores the importance of combining emotional fulfilment with utility in digital service delivery. However, the study's results challenge the findings of Fared et al. (2021), who downplay the hedonic dimension of perceived value in favour of functional reliability. Here, the conditional effects analysis reveals that satisfaction improves even when functional dimensions are controlled, suggesting that both emotional and utilitarian elements jointly inform value perception. This discrepancy could be due to contextual factors Fared et al. focus on e-marketplaces, while this study is situated in tourism, where experiential satisfaction is more critical. As proposed by Alzoubi and Inairat (2020), that perceived value amplifies the impact of service quality and fairness on satisfaction. This aligns with the current findings, particularly the significant conditional effects of service quality at higher levels of perceived value. On the other hand, O'Connor and Assaker (2024), argue that brand reputation—not perceived value is the more robust moderator in digital environments. While brand reputation was not assessed here, the strong predictive capability of perceived value in this study indicates that value may still serve as a practical and influential moderator, particularly in environments where brand loyalty is less entrenched or when tourists rely heavily on platform performance for evaluation.

Implications

This study offers key contributions to the e-service quality literature, particularly by empirically validating the distinction between core and recovery dimensions in a tourism-specific digital environment. By isolating core e-service quality such as usability, value perception, and satisfaction the research deepens theoretical understanding of how foundational service elements directly influence tourist satisfaction in online contexts. In contrast to prior studies that focus broadly on service performance, this research foregrounds core

functionality as a discrete and measurable construct within e-service models. Additionally, the study adds to moderation theory by highlighting the conditional role of perceived value in the e-service quality–satisfaction relationship. While previous research identifies perceived value primarily as a direct antecedent to satisfaction, this study demonstrates that its influence is context-dependent. The findings suggest that high perceived value amplifies the impact of core service quality, although not to a statistically strong extent. This nuanced understanding enriches tourism service theory by positioning perceived value not just as an outcome variable but as a moderating mechanism, especially relevant in high-involvement, experiential service settings such as digital tourism platforms.

Managerial Implication, the findings present actionable insights for tourism platform managers aiming to enhance tourist satisfaction through core service delivery. First, managers should prioritise improving interface usability, booking simplicity, and platform reliability attributes that constitute core e-service quality. These elements directly correlate with higher satisfaction levels, particularly when tourists perceive them as providing good value for money. The user perceptions of service at the core can be greatly optimised through continuous UX testing, mobile responsiveness, and support systems that happen in real-time. Actions to increase perceived value, which include the provision of bundled discounts or loyalty programmes or personalised content, can increase satisfaction among tourists by increasing the positive impact of the core services. Managers should not only consider perceived value as a matter of price, but also as an experience with various suffixes. Notably, the moderation effect of perceived value on satisfaction is relatively weak, which prompts a change in strategy for recovery. Because satisfaction does not greatly differ due to the difference in recovery services as far as a different perception of value is concerned, tourism platforms need to act when it comes to service failures by preventing and avoiding reactive forms of recovery related to compensation (Pourabedin, 2021). Dissatisfaction can be pre-empted by investment in automated service checks, real-time feedback systems and proactive customer communication.

Limitations

Despite its contributions, this study has several limitations that must be acknowledged. Firstly, the research was conducted within a specific geographic and cultural context, focusing on Indian digital tourism users. This may limit the generalisability of findings to other regions, particularly Western or high-income markets where digital service expectations and behaviours differ significantly. Secondly, the study adopts a cross-sectional survey design, capturing tourist perceptions at a single point in time. This approach restricts the ability to establish causality and may be subject to recall bias or recent experiences influencing satisfaction ratings. Longitudinal studies could provide more dynamic insights into how perceived value and satisfaction evolve over time with repeated service use.

Thirdly, the research primarily examines core service quality and does not deeply investigate recovery quality, limiting its explanatory power regarding post-failure service experiences. As the moderation effect of perceived value was statistically marginal, further exploration into alternative moderators such as digital trust, brand reputation, or peer influence is warranted. Lastly, all constructs were measured via self-reported items, which may introduce social desirability bias. Future research could incorporate behavioural metrics or experimental designs to triangulate findings and enhance validity. These limitations provide direction for broader and more contextually diverse studies in digital tourism.

VI. CONCLUSION

Linking with the objectives

The purpose of this study was to investigate and explain the complexities between the e-service quality, perceived value, and tourist satisfaction in a digital tourism context. Service quality and consumer perceptions have become of increased importance in the digital-mediated environment, where online services have become dominant in travel planning. This study was based upon the following four interconnected goals, where each has been intended to present the contributions to the theory as well as practical implications to tourism management and e-service quality bodies of knowledge. The results of the empirical research

presented sophisticated results which support and refute previous accounts in existing literature (Iqbal et al., 2023). This conclusion takes a new look at each of the objectives and assesses the methods of reaching them, and presents scholarly as well as practical suggestions on the continuation of research.

The first one was to determine the impacts of the essential dimensions of e-service quality on touristic satisfaction in the digital tourism framework. It was possible to create this objective in its full extent with a proper analysis of responses of the unity of the participants concerning such issues as usability, navigation on the platform, availability of the services, and their perceived ease of booking. The results indicated that the main factors in e-service made a big difference in the satisfaction of the tourists overall. Individuals who expressed more satisfaction often mentioned the ease of digital intercourse, effective consumption of information, and smooth transaction experiences. The statistical outputs, particularly the mean scores and regression results, demonstrated a strong positive correlation between these core elements and satisfaction levels. This reinforces earlier findings by Al-Bourini et al. (2021), who underscored the relevance of consistent digital performance in enhancing user confidence and satisfaction. However, the current study advances this understanding by clearly isolating the "core" service dimensions as distinct from recovery aspects, thus offering a more refined model for conceptualising e-service quality in tourism.

The second objective aimed to examine the relationship between recovery dimensions of e-service quality and tourist satisfaction following service failures or complaints. While this objective was partially achieved, the findings revealed a more complex and less robust connection than anticipated. Although recovery efforts—such as responsive customer service and effective problem resolution—are traditionally considered crucial for maintaining satisfaction, the present study found that their impact was not as significant as that of core services. This deviation emphasised recovery as a determinant of satisfaction in service failure contexts, suggests that digital tourists may place greater emphasis on pre-emptive functionality than on post-failure remediation. In particular, users of digital tourism platforms appear less forgiving of errors, especially when these disrupt time-sensitive travel arrangements. Consequently, recovery dimensions, while still relevant, may serve more as a safety net than a satisfaction driver. This finding introduces an important caveat into e-service models that traditionally weigh recovery and core services equally.

The third objective was to assess the moderating role of perceived value in the relationship between core e-service quality and tourist satisfaction. The study achieved this goal by employing moderation analysis using Hayes Process Macro (Luo, Li & Sun, 2022). The findings confirmed that perceived value—encompassing elements such as fairness of pricing, usefulness of the service, and emotional benefit—amplifies the positive relationship between core service quality and satisfaction, albeit modestly. Respondents who perceived high value in the service were more likely to report elevated satisfaction levels, even when the objective service performance remained constant. This outcome is broadly consistent that perceived value acts as a cognitive-emotional filter through which service quality is interpreted. Nonetheless, the effect size observed in this study was smaller than anticipated, suggesting that while perceived value does moderate the relationship, it may not be the most influential factor. This implies that digital tourism managers should continue to enhance core service delivery rather than rely solely on improving perceived value to drive satisfaction.

The fourth objective focused on determining whether perceived value moderates the relationship between recovery e-service quality and tourist satisfaction, and identifying any limitations in this effect. Here, the results were conclusive in showing that perceived value does not significantly moderate the impact of recovery quality on satisfaction. This stands in contrast to earlier literature found a strong moderating effect of perceived value in telecom service contexts. In the tourism sector, however, especially within digital ecosystems, the findings suggest that when a service failure occurs, even high perceived value cannot compensate for a negative experience. This reflects the sensitivity of tourists to service breakdowns in time-bound, emotionally charged scenarios such as travel. Therefore, perceived value does not sufficiently buffer dissatisfaction arising from recovery failures. The implications of this are twofold: first, that perceived value's moderating capacity may be context-dependent; and second, that a preventive approach to service design is

more effective than a reactive one. This offers a valuable extension to moderation theory, particularly in the tourism field where emotions, time, and expectations are amplified.

Collectively, these four objectives have been addressed with empirical rigour and have contributed to a more differentiated understanding of e-service quality in tourism. The study confirms that core service delivery remains the most decisive factor in shaping tourist satisfaction, while recovery services, though important, cannot fully restore satisfaction unless accompanied by high perceived value, which itself shows limitations in this role.

Recommendations for Future Research

Results of the current study suggest the entrance of a number of avenues of future research. To start with, in future, more detailed research should be conducted with the longitudinal design that will help to better comprehend the role of transformation in satisfaction during repeated use, or after failure connection of the user-facing device (Sari & Lestari, 2021). This would allow overcoming the weak points of the existing cross-sectional approach and reflect the evolution of the perceived value with time. Second, each country responding to questions on e-service quality and satisfaction relationships could be used in comparing results with other countries to gain in-depth information on issues affecting perception about cultural and regional factors. What one deems to be the core or valuable might differ very widely between the tourists of differing economic, cultural and technological backgrounds.

Third, alternative moderating variables, including digital trust, former familiarity with the platform, or peer pressure, as all these variables might ultimately have a stronger moderating power as compared to perceived value, should be researched in the future. Though it may need to include psychographic or behavioural information, e.g., clickstream behaviour or complaint resolution timelines, etc. Also, follow-up interviews on the unsatisfied customers can give some idea of the way the recovery services are viewed emotionally, or some value components are being ignored in the existing survey tools.

Future Directions

Looking ahead, the digital tourism sector will continue to evolve with advancements in artificial intelligence, personalisation algorithms, and real-time support tools. Future research should integrate technological affordances into the study of service quality, exploring how AI-driven chatbots, virtual assistants, and data-driven personalisation influence both perceived value and tourist satisfaction (Liao et al., 2022). As environmental and ethical concerns become more prominent, future studies could consider the role of sustainable service design as a value-enhancing factor. Tourists may begin to incorporate ethical dimensions into their satisfaction calculus, which could redefine what constitutes perceived value in digital travel services. Finally, research should investigate the impact of platform type (e.g., third-party aggregators vs. brand-owned sites) on service perception. It is plausible that tourists assign different value and satisfaction scores depending on the perceived credibility and accountability of the platform.

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VIII. APPENDIX

Demographic Questions

1. What is your age group?
   - Under 25
   - 25–34
   - 35–44
   - 45–54
   - 55 and above
2. What is your gender?
   - Male
   - Female
   - Non-binary
   - Prefer not to say
3. How often do you use online platforms to book travel or tourism-related services?
   - Rarely
   - Occasionally
   - Frequently
   - Very frequently

E-Service Quality (Independent Variable)

4. The digital booking platform was easy to use and navigate.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree
5. The platform provided complete and accurate information about travel services.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree
   - Strongly Agree
6. When I experienced a problem, the platform offered a quick and helpful resolution.
   - Strongly Disagree
   - Disagree
   - Neutral
   - Agree

- Strongly Agree

Tourist Satisfaction (Dependent Variable)

7. I am satisfied with my overall experience using the online tourism platform.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree
8. I would recommend this digital tourism service to others.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree

Perceived Value (Moderating Variable)

9. The service I received was worth the money I paid.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree
10. Using this online platform enhanced the enjoyment and convenience of my travel planning.
    - Strongly Disagree
    - Disagree
    - Neutral
    - Agree
    - Strongly Agree

Moderation analysis

Run MATRIX procedure:

********** PROCESS Procedure for SPSS Version 4.2 **********

Written by Andrew F. Hayes, Ph.D. www.afhayes.com

Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****

Model : 1

Y : TSat

X : ESQ

W : PVal

Sample

Size: 101

****

OUTCOME VARIABLE:

TSat

Model Summary

R	R-sq	MSE	F	df1	df2	p
.9415	.8864	.3185	252.3200	3.0000	97.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	.6791	.2786	2.4380	.0166	.1263	1.2320
ESQ	.2629	.1551	1.6954	.0932	-.0449	.5707
PVal	.2828	.1540	1.8365	.0693	-.0228	.5885
Int_1	.0633	.0333	1.9021	.0601	-.0028	.1293

Product terms key:
Int_1 : ESQ x PVal

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0042	3.6178	1.0000	97.0000	.0601

Focal predict: ESQ (X)
Mod var: PVal (W)

Conditional effects of the focal predictor at values of the moderator(s):

PVal	Effect	se	t	p	LLCI	ULCI
1.0000	.3262	.1344	2.4271	.0171	.0595	.5930
3.0000	.4528	.1129	4.0115	.0001	.2288	.6768
5.0000	.5794	.1276	4.5415	.0000	.3262	.8326

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
  ESQ       PVal       TSat       .
BEGIN DATA.
    1.0000    1.0000    1.2882
    3.6667    1.0000    2.1581
    5.0000    1.0000    2.5930
    1.0000    3.0000    1.9804
    3.6667    3.0000    3.1879
    5.0000    3.0000    3.7916
    1.0000    5.0000    2.6727
    3.6667    5.0000    4.2177
    5.0000    5.0000    4.9903
END DATA.
GRAPH/SCATTERPLOT=
 ESQ     WITH     TSat     BY       PVal     .
```

********** ANALYSIS NOTES AND ERRORS **********
Level of confidence for all confidence intervals in output:
95.0000
W values in conditional tables are the 16th, 50th, and 84th percentiles.
------ END MATRIX -----