The Mediating Role of E-Customer Satisfaction in Shaping E- Customer Loyalty: Empirical Evidence from Indonesia's Travel Agency Sector

by Purnamaningsih Purnamaningsih

The Mediating Role of E-Customer Satisfaction in Shaping E-Customer Loyalty: Empirical Evidence from Indonesia's Travel Agency Sector

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Abstract: This study examines the mediating role of e-customer satisfaction in influencing e-customer loyalty within the context of online travel agencies (OTAs) in Indonesia. This research employs a quantitative design, using Structural Equation Modelling-Partial Least Squares (SEM-PLS) to tests the proposed hypotheses. The study employed a non-probability sampling technique to collect data from 235 individuals who actively use OTA websites or apps to purchase tourism products. The findings reveal that ease of use information quality, privacy, and security have a significant impact on e-customer satisfaction. Furthermore, e-customer satisfaction significantly influences e-trust and e-customer loyalty, while e-trust significantly impacts e-customer loyalty. This research contributes to the existing literature by elucidating the interplay between e-customer satisfaction and e-trust as critical factors for fostering e-customer loyalty. Additionally, the study offers actionable insights for OTA service providers to design and implement strategies aimed at strengthening customer loyalty.

Keywords: Ease of Use, E-Customer Loyalty, E-Customer Satisfaction, E-Trust, Information Quality, Privacy & Security

1. Introduction

The rapid growth of information and communication technologies (ICTs), particularly the internet, has profoundly transformed the tourism industry (Buhalis & Law, 2008). This evolution has significantly altered traveler behavior (Hung *et al.,* 2011) and positioned the tourism and travel sector as the largest domain for online transactions, with hotel bookings being the second-largest revenue source following air travel (Conyette, 2012). The global internet travel industry continues to expand, with revenues increasing from 326.11 billion USD in 2021 to an estimated 807.88 billion USD by 2028 (Statista, 2023). The increasing reliance on online travel agencies (OTAs) across the travel and hospitality sectors underscores the need for industry players to understand shifting customer expectations, preferences, and behavioral dynamics (Mollik *et al.,* 2024; Tsang *et al.,* 2010). Beyond the technological advancements, OTAs face heightened competition and must ensure seamless digital operations to maintain customer satisfaction and loyalty (Chaichi *et al.,* 2023). Albattat (2020) noted that travel businesses leveraging internet marketing strategies consistently achieve higher revenue streams and user engagement. In this competitive and rapidly changing landscape, understanding the factors influencing e-customer satisfaction is critical in fostering e-loyalty, as these variables enable more effective resource allocation and enhance the customer experience. Satisfaction remains a cornerstone of organizational success in marketing literature, especially in highly competitive sectors (Singh *et al.*, 2025).

The variables chosen for this study, ease of use, information quality, privacy and security, e-trust, and e-customer loyalty, were carefully selected based on their relevance to the context of OTAs. Ease of use directly impacts the accessibility and navigation of online platforms, which influences user satisfaction in a digital

environment. Information quality is critical in enabling customers to make informed decisions about travel bookings, while privacy and security are essential in building trust in transactional systems where sensitive personal and financial information is exchanged. The subsequent constructs, e-trust and e-customer loyalty, were selected for their integral roles in shaping customer retention and creating long-term competitive advantages for OTAs. By elaborating on these variables, this study seeks to provide actionable insights into optimizing the online travel experience. Despite its frequent use in e-commerce studies, e-satisfaction must be clearly defined within the context of OTAs to underscore its relevance. E-satisfaction refers to a customer's level of fulfillment and contentment derived from navigating and completing transactions on an online travel platform. Its relevance in the OTA domain lies in the necessity for efficient, enjoyable, and trustworthy online experiences amidst the growing complexity of digital travel processes. Unlike satisfaction in traditional contexts, e-satisfaction incorporates digital-specific challenges, such as website usability, the need for real-time updates, and the seamless integration of travel-related services. As OTAs continue to dominate online travel markets, understanding e-satisfaction is vital for improving service delivery and promoting user engagement. While conventional loyalty is often rooted in personal relationships and physical interactions between customers and brick-and-mortar businesses, e-loyalty emerges as an essential construct within the online travel space. E-loyalty refers to a customer's intention to revisit or recommend an OTA platform, driven by a consistent, satisfying digital experience. Unlike traditional loyalty, e-loyalty emphasizes trust in the digital interface, technological performance, and virtual interaction quality. The distinct characteristics of e-loyalty warrant focused attention over conventional loyalty, as OTAs rely on sustaining repeat customers and creating positive word-of-mouth in the absence of physical touchpoints. By highlighting this contrast, this study aims to deepen the understanding of the mechanisms fostering e-loyalty in the increasingly digitalized travel industry.

Although the constructs of e-service quality, e-customer satisfaction, e-trust, and e-loyalty have been extensively studied across multiple sectors, including banking (Gautam & Sah, 2023; Muslim, 2016; Raza *et al.,* 2020), hotels (Alnaim *et al.,* 2022; Kassim & Asiah Abdullah, 2010; Palazzo *et al.,* 2021), hospitals (Asnawi *et al.,* 2019; Fatima *et al.,* 2018; Han & Hyun, 2015), restaurants (Carranza *et al.,* 2018; Lau *et al.,* 2019; Mursid & Wu, 2022; G. Singh *et al.,* 2021), and online shopping (Ashiq & Hussain, 2023; Giao *et al.,* 2020; Kim *et al.,* 2011; Rita *et al.,* 2019), limited research has focused specifically on the e-travel context (Bilgihan & Bujisic, 2015). Beyond the lack of exploration within OTAs, this study also sets out to bridge a deeper research gap by developing an integrated model that examines the antecedents and consequences of e-customer satisfaction. Furthermore, it addresses the need for platform-specific strategies that enhance user satisfaction and trust, which are critical for sustaining competitive advantage in the OTA market. This study aims to explore critical aspects of e-customer satisfaction and loyalty within the online travel agency (OTA) context. Specifically, it seeks to examine the direct impact of e-customer satisfaction on e-trust and e-customer loyalty, as well as analyze the relationship between e-trust and e-customer loyalty. Additionally, the study proposes an integrated model investigating key antecedents, such as ease of use, information quality, and privacy & security, and their consequences, including e-trust and e-loyalty, on customer satisfaction. By identifying actionable recommendations for OTA providers, this research intends to enhance customer satisfaction, trust, and loyalty through targeted interventions. Ultimately, this study addresses critical gaps in the literature and advances the understanding of factors influencing e-customer behavior, contributing to the strategic development of more effective and customer-centric online travel platforms.

2. Literature Review and Hypotheses

2.1 Ease of Use and e-Satisfaction

Several studies have used diverse theoretical frameworks to describe and comprehend consumer acceptance and utilization of technology. A user-friendly website enables customers to navigate it effortlessly, which serves as a critical determinant of both engagement and satisfaction. Li *et al.* (2009) describe ease of use as the ability of users to explore and utilize a website effectively, with subsequent research extending this definition to specific contexts such as travel booking platforms (Agag & El-Masry, 2017; Setiawan & Widanta, 2021). Ease of use ensures the simplicity of interaction with digital interfaces, an essential factor in facilitating seamless user experiences (Hossain *et al.,* 2023). While ease of use denotes the usability of a system, e-satisfaction refers to users' emotional or cognitive evaluations derived from their digital experiences. According to Anderson & Srinivasan (2003), e-satisfaction describes the pleasure or contentment experienced by users, particularly in e-commerce transactions. For ease of

use to influence e-satisfaction, the digital interface must meet the expectations and needs of the user, thereby fostering positive experiences. As Mohammad Shawal *et al.* (2023) found, tools like chatbots enhance usability in online environments, which in turn strengthens e-satisfaction by streamlining user interactions. Notably, Pratminingsih *et al.* (2024) observed that ease of use significantly impacts satisfaction, highlighting the causal pathway linking user-friendly interfaces to gratifying online experiences. Contrary evidence, such as Sabiote *et al.* (2012) where ease of use did not affect e-satisfaction is essential in illustrating the nuanced relationship between these variables. It suggests that external factors (e.g., cultural differences or website design standards) may moderate this relationship. Nonetheless, the majority of empirical studies indicate that enhanced ease of use strengthens e-satisfaction via improved usability and interaction quality (Toufaily, 2016; Gao, 2024 ; Jun et al. 2004). Therefore, the interconnection between ease of use and e-satisfaction is pivotal for developing effective e-commerce strategies. Thus, this study posits that:

H1: Ease of use has a positive relationship with e-customer satisfaction

2.2. Information Quality and e-Customer Satisfaction

A website's role in facilitating effective communication hinges on the quality of the information provided. Information quality refers to how valuable, current, and reliable users perceive a website's content (Park et al., 2007). Particularly in the travel industry, information quality serves as a key driver for decision-making, influencing users' perceptions of the platform's utility and relevance (Wen, 2009). E-satisfaction emerges when users perceive that the website delivers valuable and accurate information tailored to their needs. Li (2018) posits that information quality directly influences e-customer satisfaction by ensuring that details provided, such as itineraries, pricing, and recommendations to enhance decision-making capabilities. Gupta et al. (2024) highlight that real-time updates and personalized information features not only improve satisfaction but also enhance brand loyalty. Additionally, systems built on high-quality information capabilities foster stronger satisfaction outcomes, as indicated by Masri *et al.* (2020) and Ahmad & Sharma (2023). These cross-sector findings extend beyond tourism websites, with parallels in industries such as healthcare and education. Healthcare systems that prioritize robust and trustworthy information, Noronha & Rao (2017) have demonstrated improved patient engagement and satisfaction, mirroring trends observed in e-tourism. Similarly, Madlberger (2014) observed that high-quality educational platforms enhance satisfaction among users through clarity and contextual appropriateness of information. This interdisciplinary evidence reinforces the pivotal role of information in creating satisfying experiences across multiple digital domains, underscoring its universal significance. Thus, to assess the relationship between information quality and e-customer satisfaction:

H2: Information quality has a positive relationship with e-customer satisfaction.

2.3 Privacy & Security and e-Customer Satisfaction

Privacy and security represent critical factors in establishing trust and driving satisfaction in online environments. Privacy concerns encompass the collection and management of personal data, while security addresses technical assurances ensuring the protection of user information (Casaló *et al.,* 2007). With increasing awareness of data security issues, users evaluate e-commerce platforms based on their ability to integrate privacy-enhancing and security-critical features (Mohr & Walter, 2019). E-satisfaction partially relies on users' perceptions of their safety during online transactions. Toufaily *et al.* (2016) found that privacy and security were positively correlated with e-satisfaction in e-commerce contexts, underscoring the necessity of robust safeguards for both personal and transactional data. Similarly, Khatoon *et al.* (2020) observed that reinforced security mechanisms enhance consumer satisfaction by cultivating confidence in digital engagements. However, Ashiq & Hussain (2023) present contrasting evidence, indicating that security features may vary in relevance across cultural or regional contexts. Combined findings highlight the intricate interplay between user expectations, security protocols, and satisfaction outcomes. The travel and tourism sector aligns with broader interdisciplinary insights evidenced in healthcare and financial industries. In healthcare systems, patients exhibit heightened satisfaction when websites demonstrate strict adherence to data privacy laws (Tsang *et al.,* 2010). Similarly, robust security mechanisms drive consumer satisfaction in fintech platforms where transactional integrity is paramount (Ul Haq & Awan, 2020). Drawing from

these interdisciplinary insights, privacy and security universally impact e-satisfaction across both sector-specific and broader domains. Thus, the following hypothesis is proposed:

H3: Privacy and security have a positive relationship with e-customer satisfaction.

2.4 e-Customer Satisfaction and e-Trust

Customer satisfaction has long been conceptualized as an emotional state resulting from prolonged engagement with service providers, whether physical or digital (Giovanis & Athanasopoulou, 2014). In the context of e-commerce, satisfaction specifically refers to the degree of pleasure consumers experience during interactions with online businesses based on prior transactions (Anderson & Srinivasan, 2003). However, e-satisfaction does not exist in isolation; its implications extend to other constructs, most notably e-trust. E-trust, which denotes confidence in the reliability and integrity of an online seller, has been shown to be significantly influenced by e-satisfaction. For instance, Indrawati & Shabila (2020) report that consumer satisfaction from prior interactions with Traveloka's online platform in Indonesia leads to enhanced perceptions of trust. This finding aligns with studies globally, including Kim *et al.* (2011), Giovanis & Athanasopoulou (2014), and Kassim & Abdullah (2010), who collectively demonstrate that heightened satisfaction fosters stronger trust in digital marketplaces. Liang and Chen (2009) further validate the argument by showing how satisfaction positively impacts users' perceived trustability of e-commerce services. Given the interdisciplinary nature of customer satisfaction and trust, relevant findings from other service-based industries like healthcare and education underscore the relationship's universality. For instance, Ribbink *et al.* (2004) emphasize customer satisfaction's role in fostering trust even in non-commercial online environments, supporting the view that this dynamic relationship transcends industry-specific boundaries. Thus, synthesizing these insights leads to the following hypothesis:

H4: e-customer satisfaction has a positive relationship with e-trust.

2.5 e-Customer Satisfaction and e-Customer Loyalty

E-customer satisfaction is widely regarded as a crucial determinant of organizational success, particularly in competitive online markets (Chaichi *et al.,* 2023). In e-commerce, satisfying customers not only reduces acquisition costs but also increases the likelihood of ongoing patronage. Various scholars have contributed to understanding this relationship. Jameel *et al.* (2021) define e-satisfaction as the emotional state derived from consumers' prior interactions with online services, while Toufaily *et al.* (2016) highlight the satisfaction customers derive when an enterprise successfully fulfills their needs. Singh (2025) identifies e-loyalty or sustained repeat engagement as being significantly influenced by satisfaction in the healthcare context. Research by Dutta *et al.* (2017) further underscores the cost implications for online businesses, positing that maintaining customer satisfaction is essential given the high expense of customer acquisition relative to profit margins. In support of this connection, Gao (2024) revealed that satisfied customers demonstrate increased loyalty toward service providers. Similar studies across various sectors (Alnaim *et al.,* 2022; Anderson & Srinivasan, 2003; Cristobal *et al.,* 2007; Muslim, 2016) consistently validate that customer satisfaction strongly correlates with customer loyalty. This relationship extends beyond traditional retail to industries such as education and hospitality, further reinforcing its interdisciplinary applicability. Thus, the following hypothesis is formulated:

H5: e-customer satisfaction has a positive relationship with e-customer loyalty.

2.6 e-Trust and e- Customer Loyalty

Trust represents a critical factor influencing customer retention, particularly within online contexts. Defined broadly as the willingness to rely on the integrity and competence of others, trust provides customers with assurance amidst the perceived risks of e-commerce (Chung & Kwon, 2009; Lin, 2011). Specifically, e-trust reflects consumer confidence in the timeliness and reliability of online services, which significantly impacts behavioral loyalty (Li *et al.,* 2009). These dynamics are especially pronounced in industries like online travel platforms, where trust is essential for encouraging repeat transactions (Kim *et al.,* 2011). From an interdisciplinary perspective, findings from healthcare and education sectors indicate that trust facilitates long-term engagement, highlighting its universality across service

industries. For instance, Saoula *et al.* (2023) argue that strong trust increases customers' tendency to make repeat purchases. The critical contribution of trust in fostering loyalty is echoed by studies in e-commerce platforms as well, including Agag & El-Masry's (2017) investigation of online travel agencies in Egypt. Their findings demonstrate that trust is a critical precursor to e-loyalty, further supported by studies from Kim *et al.* (2011) and Albayrak *et al.* (2020). Given the breadth of evidence pointing to the direct relationship between trust and loyalty across diverse industries, the following hypothesis is proposed:

H6: e-trust has a positive relationship with e-customer loyalty.

2.7 Proposed Model and Hypotheses

The previous hypothesis indicates the direction of influence in the examined relationships is represented in the conceptual model illustrated in Figure I.
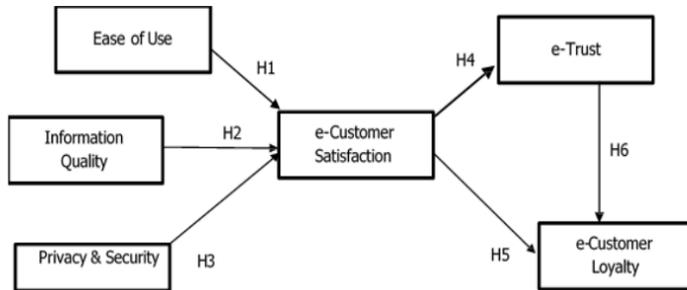

Figure 1. Research Model

3. Research Methodology

A quantitative research method was employed in this study. The data obtained from the chosen sample was examined using an appropriate statistical method and subsequently interpreted. The study utilized a questionnaire as the primary instrument for data collection, designed to gather responses based on actual conditions. A questionnaire is a systematic method of data gathering in which participants respond to a sequence of written or verbal questions (Malhotra, 2020). The study focuses on the customers of ten leading Online Travel Agencies (OTAs) operating in Indonesia, such as Traveloka, Tiket.com, Agoda, Booking.com, Pegipegi.com, Trivago, Airbnb, Tripadvisor, Nusatrip, Skyscanner, and Expedia (Rakuten Insight, 2023). These OTAs were chosen based on their market dominance and recognition among Indonesian users, as identified in industry reports and customer usage statistics. The aim was to ensure that the study included OTAs representing both local and global platforms that play significant roles in the Indonesian market. No OTAs were explicitly excluded from the study unless they were deemed non-dominant or lacked substantial customer bases within Indonesia. This approach was designed to provide comprehensive insights into user experiences across the most widely recognized OTAs in the country. The survey was carried out from September 2024 to December 2024 using Google Forms to facilitate accessibility and efficiency. The questionnaire was structured with items evaluated using a five-point Likert scale, where 1 indicating "strongly disagree" and 5 indicating "strongly agree." The items assessing different variables were sourced from established scales in prior research, as shown in table 1.

To ensure clarity and cross-cultural validity, the questionnaire was prepared in both Indonesian and English. Furthermore, two Indonesian professionals verified its content validity to ensure accurate translation and contextual appropriateness of the questions.

Table 1. The construct variables of study

Construct	Number of Items	Source
Ease of Use	3	Sabiote *et al.,* 2012
Quality of Information	4	Park *et al.,* 2007
Privacy and Security	5	Park *et al.,* 2007
E-Customer Satisfaction and E-Trust	7	Alnaim *et al.,* 2022
E-Customer Loyalty	4	Alnaim *et al.,* 2022

Convenience sampling, a non-probability sampling method, was utilized for this study (Creswell & Creswell, 2018). This method involved recruiting participants based on their proximity and ease of accessibility to the researcher (Bryman, 2016). While convenience sampling has limitations in generalizability, the representativeness of the sample was ensured by targeting participants who had recent experience using the selected OTAs. The sample size for the study comprised 235 respondents. This number was determined considering practical constraints, such as the availability of resources and time, while aiming to ensure sufficient statistical power for analysis and reliable model estimation. The study applied specific criteria to enhance the validity of the data and representativeness of the population. Participants were required to meet the following conditions, first is Recent Usage: Respondents must have engaged with one or more of the targeted OTAs within the last 12 months. And the second is Age Range: Respondents between the ages of 18 and 60 were eligible, aligning with the primary demographic of online travel service users in Indonesia. To verify these criteria, eligibility questions were integrated into the questionnaire.

Additionally, the number of respondents was chosen to balance statistical precision and feasibility while ensuring coverage across diverse backgrounds, including demographics and types of OTAs used. While convenience sampling offers practical advantages, its limitations lie in potential biases stemming from non-random participant selection. To address this, the study prioritized diversity in respondent demographics, ensuring inclusion of participants from various regions of Indonesia, age groups, and user preferences. This approach sought to mitigate sampling bias and enhance the likelihood that the sample adequately represented the broader population of OTA users in the country. Structural Equation Modeling-Partial Least Squares (SEM-PLS) was used to analyze the collected data. This technique was chosen for its ability to simultaneously evaluate measurement and structural models (Hair, 2018). The measurement model was assessed for reliability, convergent validity, and discriminant validity (Straub *et al.,* 2004), while the structural model was used for theoretical development and prediction purposes (Sarstedt *et al.,* 2020).

4. Results & Findings

4.1 Respondents' Profile

There were more female participants (54%) than male participants (46%). The predominant age group among participants was 20 to 30 years, with 149 individuals, representing 63.4% of the entire population. The next largest age group, with 22.1% of participation, was under 20. The age group of 30-40 years accounted for 6.8%, followed by 40-50 years at 6.4%, while the 50 years and older category had just 1.3%. Monthly income ranged from 5,000,000 Rupiah to more than 20,000,000 Rupiah. Nearly 68.1% of the respondents reported a salary below 5,000,000, while 3.4% earned an income between Rp10,000,000 and Rp15,000,000. 38.7% of respondents have accessed the web/app fewer than three times, while 17.4% have used it more than ten times. Furthermore, 84.3% of the participants are single, and 15.7% are married. Most OTA customers, 66.8% possessed a bachelor's degree, whilst 6.8% of respondents obtained a master's or doctoral degree. Table 2 shows the whole sample demographic information.

4.2 Measurement Model Analysis

Hair *et al.* (2010) proposed measurement analysis for assuring concept validity and reliability. Factor loadings, average variance extracted (AVE), and composite reliability (CR) values were examined to evaluate convergent and discriminant validity (Cheah et al., 2018), with a loading value required to be a minimum of 0.70 or 0.50.

Table 2. Profile of Respondents

Category	No. of Respondents	(%)
Gender		
Male	108	46%
Female	127	54%
Age		
20 or Below	52	22.1%
20-30	149	63.4%
30-40	16	6.8%
40-50	15	6.4%
50 or Over	3	1.3%
Monthly Income (IDR)		
5,000,000 or Less	160	68.1%
5,000,000 - 10,000,000	44	18.7%
10,000,000 - 15,000,000	8	3.4%
15,000,000 - 20,000,000	9	3.8%
20,000,000 or Higher	14	6%
Frequency of website/app used		
Less than 3	91	38.7%
3-6 times	82	34.9%
7-9 times	23	9.8%
10 or over	39	16.6%
Marital Status		
Married	37	15.7%
Single	198	84.3%
Level of Education		
High school	58	24.7%
Diploma I - Diploma III	8	3.4%
Bachelor's Degree	157	66.8%
Higher than a Bachelor's Degree (Magister or Doctorate)	12	5.1%

Furthermore, Cronbach's alpha and composite reliability (CR) values are within the acceptable range of 0.60 to 0.7 (Hair *et al.,* 2010). The Average Variance Extracted (AVE) must be equal to or exceed 0.50 (Cheah *et al.,* 2018). Table 3 demonstrates that all values are within the required range. The Heterotrait-Monotrait (HTMT) ratio was calculated using the parameters established by Sarstedt et al. (2019) to assess the discriminant validity. Table 4 illustrates that all values are in the acceptable range. The convergent validity was confirmed by the Fornell-Lacker criterion, with all values falling within the designated range and criteria. Table 5 displays the values identified within the specified range.

Table 3. Values of Cronbach's Alpha, AVE, and CR

Items	Statements	Factor Loadings
Ease of Use AVE (0.76), CR (0.90), α (0.84)	It is easy to get anywhere on online travel agency websites/apps.	0.878
	Information on online travel agency websites/apps is well organized.	0.884
	The online travel agency websites/apps are simple to use.	0.856
Information Quality AVE (0.67), CR (0.89), α (0.83)	At online travel agency websites/apps, I have the full information at hand.	0.823
	Online travel agency websites/apps provide in-depth information.	0.826
	Online travel agency websites/apps give me enough information to identify the item to the same degree as offline.	0.829
	Online travel agency websites/apps are excellent sources of information	0.799
Privacy & Security AVE (0.74), CR (0.93) α (0.91)	Online travel agency websites/apps have adequate security features	0.862
	I feel safe in my transactions with online travel agency websites/apps	0.869
	I feel like my privacy is protected at online travel agency websites/apps.	0.874
	I trust online travel agency websites/apps will not misuse my personal information.	0.867
	I trust online travel agency websites/apps will not give my information to	
	other sites without my permission.	0.838
e-Customer Satisfaction AVE (0.76), CR (0.92), α (0.89)	I am satisfied with the experience of using online travel agency websites/apps.	0,851
	I am pleased with the experience of using online travel agency websites/apps.	0.903
	I am delighted with the experience of using online travel agency websites/apps.	0.896
e-Trust AVE (0.83), CR (0.94), α (0.90)	My feelings about using online travel agency websites/apps are good	0.847
	I trust in online travel agency websites/apps.	0.922
	I have confidence in the online travel agency websites/apps.	0.925
	I can believe in online travel agency websites/apps.	0.900
e-Customer Loyalty AVE (0.75), CR (0.92)	I would recommend online travel agency websites/apps to someone who seeks my advice.	0.868
α (0.89)	I say positive things about online travel agency websites/apps.	0.852
	I intend to continue purchasing from online travel agency websites/apps.	0.892
	I will continue purchasing from online travel agency websites/apps	0.856

Table 4. Discriminant Validity (HTMT Ratios)

		1	2	3	4	5
1	Ease of Use					
2	Information Quality	0.889				
3	Privacy & Security	0.721	0.795			
4	e-Trust	0.722	0.783	0.835		
5	e-Customer Loyalty	0.780	0.836	0.775	0.807	
6	e-Customer Satisfaction	0.847	0.867		0.855	0.869

Source (s): The authors

Table 5. Convergent validity (Fornell–Larcker Criterion)

		1	2	3	4	5	6
1	Ease of Use	0.873					
2	Information Quality	0.748	0.819				
3	Privacy & Security	0.636	0.697	0.862			
4	e-Trust	0.631	0.681	0.759	0.916		
5	e-Customer Loyalty	0.678	0.721	0.702	0.724	0.867	
6	e-Customer Satisfaction	0.738	0.754	0.744	0.771	0.779	0.874

Source (s): The authors

4.3 Structural Model Assessment

Following the statistical analysis, the hypotheses tests are given in table 6 and figure 2. It gives information about the paths, the *T* indicators obtained from bootstrapping, and the significance of the results.
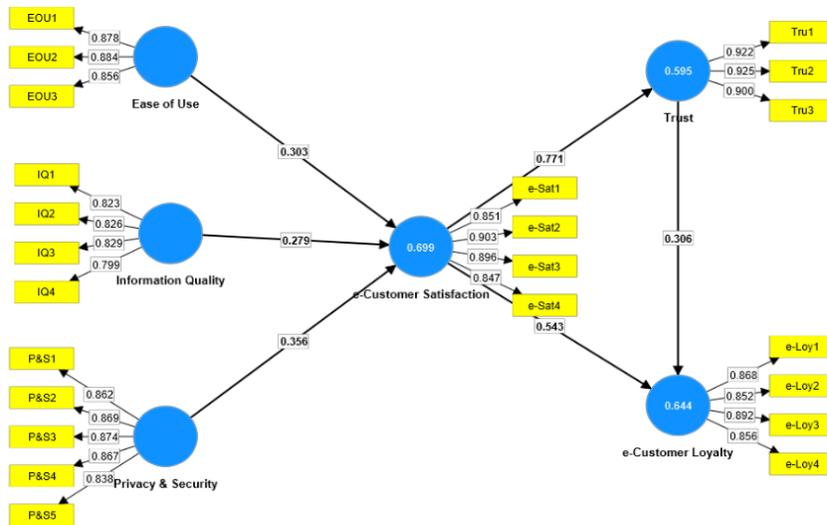

Figure 2. Measurement Model Assessment

Table 6. Hypothesis Test Result

	Hypothesis	Original Sample	t-value	p-value	Discussion
H1	Ease of Use → e- Customer Satisfaction	0.303	4.554	0.000	*Supported*
H2	Information Quality→ e-Customer Satisfaction	0.279	4.167	0.000	*Supported*
H3	Privacy & Security → e-Customer Satisfaction	0.356	6.026	0.000	*Supported*
H4	e-Customer Satisfaction → e-Trust	0.771	20.096	0.000	*Supported*
H5	e-Customer Satisfaction → e- Customer Loyalty	0.543	7.182	0.000	*Supported*
H6	e-Trust → e-Customer Loyalty	0.306	4.033	0.000	*Supported*

4.4 Discussion

This study focuses on the mediating role of e-customer satisfaction in shaping e-customer loyalty. Table 6 displays the results of the multiple regression analysis. While the findings provide valuable insights into the relationships between various constructs, the discussion section may benefit from a deeper theoretical integration and critical engagement with the literature. Key issues include an overly descriptive presentation of the results and insufficient attention to the interplay between variables. Below, the revised discussion explores these dimensions in greater detail.

H1: Ease of Use and E-Customer Satisfaction

The findings confirm that ease of use positively and significantly affects e-customer satisfaction, consistent with prior research (e.g., Filieri *et al.,* 2021; Gao, 2024; Mohammad Shawal *et al.,* 2023; Pratminingsih *et al.,* 2024). While this result supports the hypothesis, the discussion largely restates the statistical evidence and prior studies without critically interrogating the theoretical mechanisms underpinning this relationship. For instance, ease of use presumably impacts satisfaction by reducing cognitive overload and enhancing efficiency and task completion (Venkatesh, 2000). A deeper exploration of how ease of use interacts with other constructs, such as information quality or perceived security could offer more nuanced insights. For example, does ease of use moderate or amplify the impact of information quality on e-customer satisfaction? Future studies could build on this by exploring the moderating or mediating effects of ease of use in multi-variable contexts.

H2: Information Quality and E-Customer Satisfaction

This study also found that information quality positively and significantly impacts e-customer satisfaction, aligning with previous investigations (e.g., Khai & Van, 2020; Ma Sabiote *et al.,* 2012; Ahmad & Sharma, 2023; *et al.*). However, this discussion could benefit from a more critical reflection on what constitutes "high-quality" information in the context of online travel agencies (e.g., timeliness, reliability, relevance). Furthermore, the theoretical discussion lacks depth regarding how information quality interacts with other variables in shaping customer satisfaction. For example, does perceived privacy and security influence customers' trust in the provided information? Could an enhanced ease of use platform strengthen how users perceive information quality? Theoretical perspectives such as Information System (IS) Success models (DeLone & McLean, 2003) could provide a useful lens for interpreting the broader implications of information quality.

H3: Privacy, Security, and E-Customer Satisfaction

The findings demonstrate that privacy and security significantly and positively affect e-customer satisfaction, corroborating prior research (e.g., Khatoon *et al.,* 2020; Sabiote *et al.,* 2012; Ahmed *et al.,* 2021; Kim *et al.,* 2011). While this conclusion reinforces the importance of privacy and security features, the discussion largely treats this construct in isolation. Theoretical elaboration is needed to examine whether privacy and security interact with ease of use or information quality in influencing satisfaction. For example, does a highly secure platform mitigate dissatisfaction caused by lower ease of use? Alternatively, is perceived security more influential for trust than

satisfaction? Such questions provide theoretical depth often informed by trust frameworks (Gefen *et al.,* 2003). Integrating these perspectives could yield richer insights and practical recommendations.

H4: E-Customer Satisfaction and E-Trust

The study revealed that e-customer satisfaction positively impacts e-trust, supporting existing literature (e.g., Giovanis & Athanasopoulou, 2014; Liang & Chen, 2009; Selnes, 1998). While the statistical evidence demonstrates this relationship, the theoretical exploration remains limited. Satisfaction likely fosters trust by signaling reliability, competence, and positive emotional experiences between customers and online travel service providers. However, the discussion could investigate whether trust is influenced differently based on specific facets of satisfaction (e.g., satisfaction derived from privacy/security vs. ease of use). Moreover, little attention is given to how trust mediates the relationship between customer satisfaction and loyalty, which could provide integrated insights grounded in social exchange theory.

H5: E-Customer Satisfaction and E-Customer Loyalty

The findings indicate a positive and significant relationship between e-customer satisfaction and e-customer loyalty, aligning with prior studies (e.g., Gao, 2024; Singh, 2025; Alnaim *et al.,* 2022). While the results corroborate expectations, a critical discussion of why satisfaction leads to loyalty remains underdeveloped. Theoretically, loyalty may stem from both affective (emotional) and cognitive (behavioral) satisfaction, where customers perceive that their needs were met efficiently and securely (Garbarino, 1999). Furthermore, the discussion could examine whether the strength of the satisfaction-loyalty relationship varies depending on external factors such as market competition or brand reputation. Indeed, cross-construct interactions (e.g., the moderating role of trust) warrant further investigation.

H6: E-Trust and E-Customer Loyalty

The study finds that trust significantly affects e-customer loyalty, consistent with previous research (e.g., Saoula *et al.,* 2023; Indrawati & Shabila, 2020; Albayrak *et al.,* 2020 ; Chou et al., 2015). However, the treatment of this relationship is limited to confirming the hypothesis rather than critically analyzing its theoretical implications. Trust may act as a stabilizing factor that ensures customers continue their relationship with e-service providers even when price or service quality fluctuates. The discussion could also explore whether dimensions of trust (e.g., reliability vs. benevolence) differentially impact loyalty within the online travel agency domain. Integrating trust theories, such as Mayer *et al.'s* (1995) trust framework, could deepen the analytical lens provided.

This study primarily discusses each variable in isolation but misses opportunities to explore their interactions and theoretical implications. For example, information quality could moderate the relationship between ease of use and satisfaction, while perceived security might influence customers' trust and loyalty. Constructive integration of these variables creates a comprehensive framework that reflects the complexity of e-customer behavior. The findings should also be interpreted in light of evolving customer expectations in the digital space, where seamless integration of user experience, reliable information, and robust security measures are essential for fostering satisfaction, trust, and loyalty.

This study contributes to the literature by validating the relationships among ease of use, information quality, privacy and security, e-customer satisfaction, e-trust, and e-customer loyalty in the Indonesian online travel agency context. However, advancing theoretical frameworks, such as TAM, the expectancy-confirmation model, and social exchange theory could provide a scaffold for examining interaction effects and boundary conditions, moving beyond descriptive analysis to critical integration. For practitioners, the findings highlight the need for a balanced approach in designing digital platforms that prioritize user convenience, high-quality information, and robust security features. Beyond isolated improvements, online travel agency providers must align these elements to create a seamless and trustworthy ecosystem that fosters customer satisfaction, trust, and loyalty over time.

5. Conclusion

The rapid acceleration of technological advancements and heightened competition within the tourism sector have increasingly necessitated that online travel agencies (OTAs) develop a profound understanding of consumer expectations, preferences, and behaviors. This study's findings offer significant insights into the crucial factors that influence e-customer satisfaction within the digital ecosystem. Specifically, the results demonstrate that ease of use, information quality, and privacy and security exert a significant impact on e-customer satisfaction. Furthermore, e-customer satisfaction plays a pivotal mediating role in fostering e-trust and e-customer loyalty, with e-trust also positively influencing customer loyalty. Together, these interrelated variables form indispensable pillars for OTAs to design effective strategies aimed at enhancing customer experiences and retention rates. From a practical standpoint, these insights suggest that OTAs can achieve competitive advantages by prioritizing initiatives that optimize digital interfaces, improve the accuracy and comprehensiveness of information provided, and maintain rigorous safeguards for customer privacy and data security. Such efforts not only contribute to higher levels of satisfaction but also establish durable trust and loyalty among customers, which are critical factors for long-term business sustainability.

However, the implications of this research transcend the boundaries of the tourism industry. The findings hold broader interdisciplinary significance, particularly within the domains of digital consumer behavior and service innovation. For example, this study's model, which explores the interplay among ease of use, information quality, privacy/security, satisfaction, trust, and loyalty, offers valuable insights that can be extrapolated to other industries leveraging e-commerce, such as retail, healthcare, education, and financial services. In these sectors, businesses also rely on digital platforms to build user trust and loyalty in competitive, data-intensive environments. Thus, the results of this study contribute to the broader discourse on how organizations across diverse domains can holistically align service quality, usability, and data protection efforts to foster positive customer outcomes. From a theoretical perspective, the findings enrich the existing body of knowledge surrounding consumer behavior and the role of trust-building mechanisms in digital contexts. They also underline the transformative impact of the digital revolution on both customer engagement and service delivery models. By addressing the interplay between satisfaction, trust, and loyalty, this study offers a framework that is not only relevant for tourism management but also instructive for broader discussions on the future of consumer-centric innovation in digital markets.

6. Limitation

While this study provides useful insights, certain limitations must be acknowledged to guide future research. The sample size, while adequate for the present analysis, could be expanded to ensure greater statistical robustness and representativeness. Additionally, incorporating moderating variables, such as age, nationality, marital status, and gender, may offer a more nuanced understanding of how demographic factors shape relationships among e-customer satisfaction, e-trust, and e-loyalty (Alnaim *et al.,* 2022). Furthermore, a longitudinal approach using time-series data could enrich the temporal validity of the findings and reveal trends that static cross-sectional data might overlook. Future researchers are encouraged to investigate these dimensions to refine and expand on the existing conclusions, potentially exploring comparable studies in non-tourism contexts to validate the generalizability of the model. By addressing these limitations, forthcoming studies could contribute to a deeper understanding of digital consumer behavior and service innovation across industries globally.

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Authors' Contributions

Rajesh Prettypal Singh: Investigation, Conceptualization, Methodology, and Writing Original Draft. Muhammad Shahid Khan: Methodology, Validation, Formal Analysis, and Supervision. Yoanita Alexandra: Investigation, Writing, Review & Editing, and Resources. Purnamaningsih Purnamaningsih: Investigation. All the authors read and approved the final version of this manuscript.

Does this article screen for similarity?

Yes

Ethics approval

No ethical clearance certificate is applicable for this present study.

Conflict of Interest

The authors have no conflicts of interest to declare. There is also no financial interest to report. The author certifies that the submission is original work and is not under review at any other publication.

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