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Strengthening relationship marketing model through antecedents and consequences of customer e-trust in e-commerce

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Abstract

E-commerce, or internet purchasing, has become more competitive as technology advances. This research aims to develop a relationship marketing model based on the causes and effects of e-trust among online shoppers. E-service quality and e-satisfaction are two factors that contribute to a company gaining their trust online. Meanwhile, e-commitment from customers follows on the heels of e-trust. Purposive sampling was used to choose 200 e-commerce users. This research used Partial Least Square (PLS) for data analysis. According to the findings, e-trust is affected by how satisfied and pleased clients are with the services they get online. E-service quality affects e-satisfaction, which in turn affects e-satisfaction and customers' e-commitment. However, e-trust may also mediate the effects of e-service quality and e-satisfaction on e-commitment. E-satisfaction acts as a mediator between the effects of e-service quality on customers' e-trust and e-commitment. These results show that customers' e-trust is important in strengthening the influence of e-service quality and e-satisfaction on customers' e-commitment. Likewise, e-satisfaction has an important role in strengthening the influence of e-service quality on e-trust and e-commitment. These findings prove that relationship marketing can be strengthened through the antecedents and consequences of customers' e-trust to support and strengthen the achievement of e-commerce's competitive advantage. Managers must create a strategy that integrates e-service quality, satisfaction, trust, and commitment to deliver a holistic customer experience. By prioritising these factors, managers can drive higher customer retention, loyalty, and ultimately, long-term business success in the online marketplace.

Keywords:
e-commerce; e-commitment; e-satisfaction; e-service quality; e-trust.

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Introduction

The increasingly rapid development of technology will impact changes in people's economic lives in carrying out their activities. One of society's economic activities can be displayed through internet trading. Currently, in Indonesia, internet usage to fulfil daily needs is increasing. This can be shown through the increasing internet us for online shopping in society. The number of Indonesian people who use the internet in 2022–2023 is 215.63 million people. Currently, Indonesia's population has reached 275.77 million people. This means that internet usage in Indonesia has currently reached 78.19% (APJII, 2023). Increased internet usage has opened new businesses opportunities. This can be shown through the growth of electronic commerce (e-commerce), which is one of the advanced technologies that encourage the development of digital business in Indonesia. E-commerce is an activity or place to sell products and buy products online (Indonesiabaik.id, 2023). E-commerce is a process of online buying and selling transaction activities via electronic media. Marketplace describes a particular type of online store that acts as an intermediary for customers and sellers. A marketplace is a site that connects buyers and sellers in online transactions (Rahman, 2017). The marketplace will provide facilities and make it easier for sellers to do their business without being limited by distance and time (Fatrina et al., 2019).

There are three most popular marketplace in Indonesia, which are Shopee, Tokopedia, and Lazada. Regarding the number of visitors, Shopee had 161 million visits in May 2023, Tokopedia 106 million, and Lazada 70 million. Apart from that, Shopee is predicted to maintain its position as Indonesia's most popular e-commerce application in 2022, with the most downloads from both Google Play and Apple Store (CNN Indonesia, 2023). The increasing online shopping intention will impact the increasing presence of e-commerce sites and its competitions. Therefore, e-commerce sites must make efforts to win this competition. Successful tactics for beating the competition include building long-term relationships with clients (Niu et al., 2020). Improving e-service quality and e-satisfaction can help businesses win and retain clients in a digital world over the long term. Achieving e-service quality and e-satisfaction that meets customer needs will increase customer trust in online shopping (e-trust) (Agag, 2019). Ultimately, it will impact increasing customer commitment to shopping online (e-commitment). In this way, customers' e-commitment can be built through the antecedents of e-service quality, e-satisfaction, and e-trust for online shopping buyers.

According to Morgan & Hunt (1994), relationship marketing mainly relies on customer trust and loyalty. In this case, it can be understood that customers must trust author marketers and commit to creating mutually beneficial relationships over a long period. The relationship marketing philosophy is oriented towards retaining customers through customer

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commitment and customer loyalty. According to Dharmmesta (1999), there are four levels of client loyalty, i.e., cognitive loyalty, affective loyalty, conative loyalty, and action loyalty. Cognitive loyalty can be displayed through service quality. Affective loyalty can be displayed through customer satisfaction. Conative loyalty can be displayed through customer trust and customer commitment. Action loyalty can be displayed through word-of-mouth communication and customer loyalty. Based on this explanation, e-service quality, e-satisfaction, and e-trust influence the efforts to build customers' e-commitment so that good long-term relationships will be achieved between marketers and customers who carry out online shopping transactions through marketplace. Strengthening customers' e-commitment is a method to increase the industry's competitiveness and secure its competitive advantage. This study aims to determine the importance of customer e-trust is emphasised as a mediator variable, which has a role in mediating the relationship between e-service quality and e-satisfaction with the e-commitment of online shopping buyers through the marketplace application.

Literature review
E-service quality and e-trust

Previous study shows a relationship between e-service quality, e-satisfaction, e-trust, and e-commitment (Garepasha et al., 2020). Electronic service quality (e-service quality), as defined by Parasuraman et al. (2005), refers to the efficiency of online retailers in processing orders and delivering goods to consumers. With increasingly advanced information technology, it will greatly support the achievement of e-service quality that customers expect in terms of fast, safe, and reliable service. Meanwhile, Pudjarti et al. (2019) stated that e-service quality focuses on interactive services using website-based information technology. E-service quality are also developed and evaluated using the internet network (Al-dweeri et al., 2017). Kesuma et al. (2021) and Rita et al. (2019) indicated that e-service quality has positive impact on e-trust among customers. Salehnia et al. (2014) and Al-dweeri et al. (2017) found similar beneficial effects of e-satisfaction to e-trust in online purchasing in Jordan.

H1: E-service quality has significant positive effect on customers' e-trust.

E-satisfaction and e-trust

Rhamadhani & Riptiono (2023) show customer trust increases loyalty. Customer trust in a business is very important for the success of every interaction between the two parties over time (Kim et al., 2009). E-trust is a term used to describe online buyers' trust in online retailers. E-trust is defined as consumer assurance of the safety and efficacy of a company's products (Garbarino & Johnson, 1999). Customers will have confidence in the integrity,

good intentions, and trustworthiness of e-commerce companies in an environment called e-trust (Gefen, 2000). Consumer satisfaction shows the positive experiences experienced by consumers when making transactions will form consumer confidence (Al-Dweeri et al., 2017). In addition, according to Ghane et al. (2011), customer satisfaction is closely related to interpersonal trust and is considered an antecedent of trust, e-satisfaction directly and positively affects e-trust. Purnamasari et al. (2023) also revealed that e-satisfaction positive and significant effect on e-trust in Indonesia.

H2: E-satisfaction has significant positive effect on customers' e-trust.

E-service quality and e-commitment

Apart from customer e-trust, in relationship marketing, there is another important pillar, i.e., customer e-commitment (Morgan & Hunt, 1994; Garbarino & Johnson, 1999). In the context of online shopping, online customer commitment is called e-commitment. E-commitment is an important factor in online retailing, especially in maintaining continuity of relationships with customers so that it will create loyal customers (Rafiq et al., 2013). Likewise, Nurcaya (2021) found that e-service quality influences commitment, while e-trust influences commitment among customers. Hence, this study presents the following hypothesis.

H3: E-service quality has a significant positive effect on customers' e-commitment.

E-satisfaction and e-commitment

In retaining online business customers, improving e-service quality, e-satisfaction, e-trust, and e-commitment is very important to achieve e-loyalty. One way to strengthen a company's competitive advantage through relationship marketing is to achieve e-loyalty among clients in the digital realm. E-commitment is the main factor that differentiates loyal customers from disloyal customers (Garepasha et al., 2020). Meanwhile, Casalo et al. (2007) indicated that happy customers are more loyal. Gharibi et al. (2020) also proved that e-satisfaction significantly affects e-commitment in an Iranian destination website. Thus, this research hypotheses:

H4: E-satisfaction has a significant positive effect on customers' e-commitment.

E-trust and e-commitment

According to Huy et al. (2019), trust is a significant predictor of repetitive customer purchases in the luxury hotel context in Vietnam. It is also a vital factor driving purchase intention in the case of a high level of uncertainty related to e-retailer's online transactions (Antwi, 2021). Trust is also confirmed having a positive association toward commitment in Egyptian e-commerce (Agag, 2019). Furthermore, according to the trust commitment theory, e-trust

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has a significant impact on e-commitment in Tunisia (Ghali-Zinoubi, 2021). Goutam (2020) also proved that e-trust has a direct effect on e-commitment in the context of online shopping in India.

H5:   Customers' e-trust has a significant positive effect on customers' e-commitment.

E-service quality and e-satisfaction

Asakdiyah (2018) indicated that service quality has an impact on student loyalty. Good customer service can increase consumer satisfaction, resulting in loyalty. The relationship between e-service quality and consumer satisfaction is widely studied before. Puriwat & Tripopsakul (2017) mentioned that e-service quality significantly influences consumer satisfaction when using mobile banking applications. Efforts must be made to improve service quality, customer happiness, and trust to increase customer commitment to foster long-term relationships between the business and its clients. In online business, every e-commerce site will always strive to win the competition by improving e-service quality and increasing customer satisfaction and trust. This will have an impact on increasing customers' e-commitment. Apart from e-service quality, e-satisfaction refers to the level of satisfaction of a company's online customers with its services. Customer retention can benefit greatly from a focus on e-satisfaction. E-satisfaction is the overall happiness of online shoppers including their purchases and experiences (Al-Dweeri et al., 2017).

E-service quality has been linked to e-satisfaction through several studies. The level of satisfaction is correlated with the quality of e-commerce services, as shown by Sativa and Astuti (2016), Chang et al. (2009), and Ghane et al. (2011). Thus, this study presents the following hypothesis.

H6:   E-service quality has a significant positive effect on e-satisfaction.

E-trust and e-satisfaction as mediators

Previous research has focused on the relationship between service quality, consumer satisfaction, customer trust, and commitment. Asakdiyah (2021) indicated that the influence of service quality on customer commitment is mediated by customer trust. This shows the important role of customer trust as a variable that strengthens the relationship between service quality and customer commitment. Additionally, student enjoyment mediates the relationship between service quality and student loyalty. Increasing student satisfaction and trust will increase the degree of student dedication.

Nurcaya (2021) shows that the relationship of bank e-service quality and customers' e-commitment is mediated by customer trust. Meanwhile, Parnataria & Abror (2019), Rhamdhani & Riptiono (2023), and Beatson et al. (2006) indicated that customer satisfaction drives trust, and trust drives loyalty. Hence, this study presents the following hypotheses.

H7: The relationship between e-service quality and e-commitment is significantly mediated by customers' e-trust.

H8: The relationship between e-satisfaction and e-commitment is significantly mediated by customers' e-trust.

To become an essential factor for the survival of the company, satisfying the customer's necessity can increase the excellence of rivalry. A customer who is satisfied with the product/ service tends to re-purchase those products or re-use the service when the same necessity has come in the future. It means that satisfaction is a crucial factor for customer in re-purchasing, which become the vast portion of the company sales volume (Gotama & Indarwati, 2019). Satisfaction was found to have a major effect on trust and commitment in previous research (Park, 2018). On the basis of the expectancy disconfirmation theory, previous research confirms that e-satisfaction is an outcome of perceived e-service quality, which also leads to other consequences (Alnaim et al., 2022), such as e-trust and e-commitment. Thus, this study proposes the importance to add e-satisfaction as moderating factors in the the relationship between e-service quality and e-trust and between e-service quality and e-commitment. This study presents the following hypotheses.

H9: The relationship between e-service quality and e-trust is significantly mediated by e-satisfaction.

H10: The relationship between e-service quality and e-commitment is significantly mediated by e-satisfaction.

Research method
Population and sample
The population of this study is e-commerce customers in Indonesia. The sample of this study is e-commerce customers in Special Region of Yogyakarta. Purposive sampling was used as a selection technique for this research. Purposive sampling is a method of taking samples that uses predetermined guidelines (Sugiyono, 2019). The criteria for respondents used as samples are: minimum age 17 years old and have purchased online via e-commerce platform at least twice.

According to Ferdinand (2014), 5-10 times the number of indicators (items) is a good rule of thumb for calculating a representative sample size. The number of samples in this research was $22 \times 9 = 198$ respondents. The minimum number of samples in the study was 198 respondents. The study's total sample was determined to be 200 respondents, to improve the research results.

Data collection technique
The design of this research is quantitative. A cross-sectional approach is utilised to gather the data. This study used online survey to reach the

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respondents. An online survey instrument which is managed by Google form is distributed personally through social media platform.

Research instruments and measurement scales

The independent variables of this research are e-service quality, and e-satisfaction, while e-commitment is the dependent variable. Meanwhile, e-trust acts as a moderating factor. E-service quality was evaluated using seven measurement items adapted from Salehnia et al. (2014) and Ghane et al. (2011). E-satisfaction is measured using five items adapted from Fang et al. (2016), and Garepasha et al. (2020). E-trust was assessed using five measurement items adapted from Toufaily & Pons (2017) and Shin et al. (2013). Meanwhile, five measurement items adapted from Fang et al. (2016) and Garepasha et al. (2020) were used to measure customer e-commitment. All the measurement items use a rating of 5-point scale.

Results

This investigation used Partial Least Square (PLS) as a data analysis technique. The following research uses external measurement models to assess and compare different models. Convergent validity, discriminant validity, and reliability analyses are applied to the outer model. Meanwhile, the structural model is run using the inner model. Significant R-square, Q-square and F-square values are tested using inner models or structural model testing to test the relationship between constructs.

Measurement model (outer model)

This study used convergent validity, discriminant validity, and reliability to evaluate the model. The PLS algorithm is used to determine the measurement model. The assessment of the model can be described as follows.

Convergent validity

If the indicator or item's factor loading is positive and more than 0.7, and the AVE value exceeds 0.5, the indicator or item is considered valid (Latan & Ghozali, 2012). Appendix 1 describes convergent validity result which shows that all items have factor loadings and AVEs exceeding 0.7 and 0.5, respectively. Based on these findings, it can confidently state that these items are valid measures of the latent variable.

Discriminant validity

The result of discriminant validity is presented in Appendix 2 and 3. The result indicates that each item is linked to a latent variable, so its score increases relative to its value when linked to another latent variable. This means that the cross-loading value of all items exceeds 0.70. The results of the discriminant validity test for all items are valid based on these findings.

Reliability

The results of reliability testing are presented in Appendix 4. The composite reliability result of all these variables reaches a value of 0.7, and the cronbach alpha is greater than 0.7. This indicates that all variables have a high level of reliability.

Structural model (inner model)

Inner model testing is conducted to observe the relationship between constructs, R-square, Q-square, F-square, and significance values.

R-square

PLS structural model assessment can be done by calculating the R-square for each latent variable. The R-square test results is presented in Appendix 5. The result shows that e-commitment can be explained by e-service quality, e-satisfaction, and e-trust customer amounting to 75.8% and the remaining 24.2% is explained by other factors. E-service quality can explain e-satisfaction amounting to 66.1%, and the remaining 33.9% can be explained by other aspects factors. Meanwhile, e-service quality and e-satisfaction amounting to 66.7% can explain customers' e-trust. The remaining 33.3% is explained by other factors.

Q-square (predictive relevance)

By analysing the Q-square value, the predictive relevance test determines how accurate the observation figures obtained from the blindfolding process are. A good observation value has a Q-square that exceeds zero. Q-square values below zero indicate poor observation quality. The Q-square values is presented in Appendix 6. The fact that the Q-square score exceeds 0 displays the high quality of research observations.

Table 1.

F-square test result

Variable	F Square	Information
E-Service Quality → E-Trust	0.351	Big Influence
E-Satisfaction → E-Trust	0.071	Little Influence
E-Service Quality → E-Commitment	0.073	Little Influence
E-Satisfaction → E-Commitment	0.259	Medium Influence
E-Trust → E-Commitment	0.070	Little Influence
E-Service Quality → E-Satisfaction	1.950	Big Influence

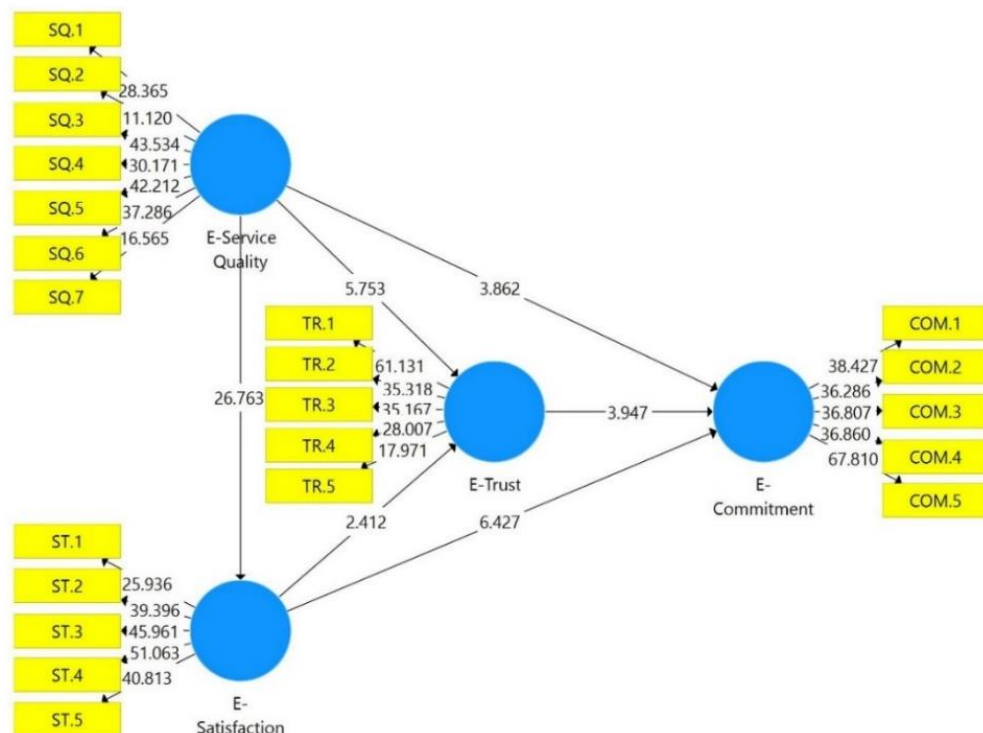Source: Authors' work (2023)

F-square testing

F-square is used to understand whether the latent variable makes a small, medium, or large contribution to the overall structure. The F-square test results is displayed in Table 1. Table 1 shows that F-square value of 0.02 displays a

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negligible influence, 0.15 displays a moderate influence, and 0.325 displays a large influence.

Hypothesis testing results

The aim of testing structural modelling is to test the strength of the relationships between research variables. Structural modelling tests direct and indirect relationships between variables.

Figure 1

Hypothesis test

Source: Authors' work (2023)

The direct and indirect impact results can be observed by checking the p-value. A significant relationship between exogenous and endogenous factors is displayed if the p-value score does not exceed 0.05 and the statistical T-number exceeds 1.960 (Latan & Ghozali, 2012). Figure 1 describes the findings of testing the structural model of this research.

The results of testing the direct effects are presented in Table 2. Based on Table 2, the influence of e-service quality on e-trust customers shows a score of p = 0.000 < 0.05 with a t value of 5.753. This indicates that e-service quality has a significant positive effect on e-trust customers. Hypothesis 1 is supported. The results of testing the effect of e-satisfaction on customer e-trust show a score of p = 0.016 < 0.05 with a t value of 2.412. This indicates that e-satisfaction has a significant positive impact on e-trust customers. Hypothesis 2 is supported. The results of testing the influence of e-service quality on

customer e-commitment show a p = 0.000 < 0.05 with a t value of 3.862. This indicates that e-service quality has a significant positive impact on customer e-commitment. Hypothesis 3 is supported. The results of testing the influence of e-satisfaction on customer e-commitment show a score of p = 0.000 < 0.05 with a t value of 6.427. This indicates that e-satisfaction has a significant positive impact on customer e-commitment. Hypothesis 4 is supported. The results of testing the influence of customer e-trust on customer e-commitment show a p = 0.000 < 0.05 with a calculated t-value of 3.947. This indicates that customer e-trust has a significant positive impact on customer e-commitment. Hypothesis 5 is supported. The results of testing the influence of e-service quality on e-satisfaction show p = 0.000 < 0.05 with t value of 26.763. This indicates that e-service quality has significant positive implications for e-satisfaction. Hypothesis 6 is supported.

Table 2.

Hypothesis test result

Variable	Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (O/STDEV)	P Values
E-Service Quality → E-Trust	0.588	0.590	0.102	5.753	0.000
E-Satisfaction → E-Trust	0.263	0.263	0.109	2.412	0.016
E-Service Quality → E-Commitment	0.266	0.262	0.069	3.862	0.000
E-Satisfaction → E-Commitment	0.445	0.449	0.069	6.427	0.000
E-Trust → E-Commitment	0.226	0.225	0.057	3.947	0.000
E-Service Quality → E-Satisfaction	0.813	0.812	0.030	26.763	0.000

Source: Authors' work (2023)

Table 3.

Mediation testing result

Variable	Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (|O/STDEV|)	P Values
E-Service Quality → E-Trust → E-Commitment	0.133	0.133	0.044	3.049	0.002
E-Satisfaction → E-Trust → E-Commitment	0.060	0.058	0.028	2.155	0.032
E-Service Quality → E-Satisfaction → E-Trust	0.214	0.213	0.087	2.461	0.014
E-Service Quality → E-Satisfaction → E-Commitment	0.362	0.365	0.059	6.154	0.000

Source: Authors' work (2023)

This study also tested a structural model by analysing the indirect influence between research variables. This study tested the role of customer e-trust and e-satisfaction as mediator variables. Testing of mediating variables

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can be displayed in Table 3. Based on Table 3, the role of customers' e-trust and e-satisfaction as mediator variables are displayed from the calculated p-value and t-value. If the p-value < 0.05 and the t-value > 1.96, it can be explained that the mediator variable can mediate the influence of the exogenous variable on the endogenous variable. The mediating analysis result of customers' e-trust in the relationship between e-service quality and customers' e-commitment shows a $p = 0.002 < 0.05$ with a t value of 3.049. This shows that the customer e-trust variable can play a strong role in mediating the influence of e-service quality on customer e-commitment. Hypothesis 7 is supported. The mediating analysis result of customers' e-trust in the relationship between e-satisfaction and customers' e-commitment shows a score of $p = 0.032 < 0.05$ with a t value of 2.155. This shows the strong role of customer e-trust variables in mediating the influence of e-satisfaction on customer e-commitment. Hypothesis 8 is supported. The mediating analysis result of e-satisfaction in the relationship between e-service quality on e-trust customers shows a $p = 0.014 < 0.05$ with a t value of 2.461. This shows the e-satisfaction variable's strong role in mediating the influence of e-service quality on e-trust customers. Hypothesis 9 is supported. The mediating analysis result of e-satisfaction in the relationship between e-service quality on customer e-commitment shows a $p = 0.000 < 0.05$ with a t-value of 6.154. This shows the e-satisfaction variable's strong role in mediating e-service quality's influence on customer e-commitment. Hypothesis 10 is supported.

Discussion

The result reveals that e-service quality has significant positive effect on customers' e-trust. Hypothesis 1 is supported. This result consistent with Kesuma et al. (2021) and Rita et al. (2019). Managers need to ensure that the e-service quality is consistently high across platforms. This includes website speed, usability, design, and functionality, to serve a better service quality that can improve e-trust. Furthermore, managers must focus on building trust through transparency in policies, such as clear return policies, data usage disclosures, and honest communication.

This study proves that e-satisfaction has significant positive effect on customers' e-trust. Hypothesis 2 is supported. This result supports Ghane et al. (2011) and Purnamasari et al. (2023). Managers should focus on customer satisfaction by continuously improving service offerings based on user feedback, so customers' e-trust can be achieved. Moreover, investing in reputation management through customer reviews, social proof, and endorsements can help build e-trust.

The hypothesis testing result also shows that e-service quality has a significant positive effect on customers' e-commitment. Hypothesis 3 is supported. Previous research also indicates similar relationship of e-service

quality and customers' e-commitment, such as Rafiq et al. (2013) and Nurcaya (2021). Ensuring reliability in e-services, such as accurate service delivery, and prompt customer service responses, are critical for retaining customer and gaining customers' e-commitment. Managers can implement loyalty programs and rewards systems to encourage long-term engagement and commitment from customers.

E-satisfaction has a significant positive effect on customers' e-commitment. Hypothesis 4 is supported. This result reinforces previous research by Gharibi et al. (2020) and Casalo et al. (2007). However, prompt and effective resolution of customer issues is crucial. Investing in customer service infrastructure like AI chatbots or 24/7 customer support can improve satisfaction. It is also fostering long-term relationships with customers through consistent communication and exclusive offers helps build commitment.

This research also prove that customers' e-trust has a significant positive effect on customers' e-commitment. Hypothesis 5 is supported. Similar outcomes were reported by Ghali-Zinoubi (2021) dan Goutam (2020). Offering secure and well-known payment methods, along with fraud protection, helps in establishing trust in e-services, which also help to build customers' e-commitment. Additionally, engaging with customers through personalised emails, newsletters, and offers can reinforce commitment by reminding customers of the value of the relationship.

The effect of e-service quality toward e-satisfaction is proven in this study. Hypothesis 6 is supported. E-service quality has a significant positive effect on e-satisfaction. This result consistent with Sativa and Astuti (2016), Chang et al. (2009), and Ghane et al. (2011). Service quality plays a major role in increasing satisfaction. Managers should ensure a seamless experience whether the customer is interacting via desktop, mobile, or other devices to help improving overall satisfaction.

In this research, customers' e-trust significantly mediates the relationship between e-service quality and e-commitment and the relationship between e-satisfaction and e-commitment. Hypothesis 7 and 8 are supported. This result consistent with Parnataria & Abror (2019), Rhamdhani & Riptiono (2023), and Beatson et al. (2006). With growing concerns over data security, managers need to invest in secure platforms that protect customer data to maintain a high level of trust.

The relationship between e-service quality and e-commitment is significantly mediated by e-satisfaction. Hypotheses 9 and 10 are supported. This result consistent with Alnaim et al. (2022) and Park (2018). Managers should focus on enhancing service delivery speed, whether in shipping products or responding to inquiries. Offering fast loading times, easy-to-find information, and a simplified checkout process can significantly boost satisfaction. By strategically focusing on e-satisfaction, managers can enhance

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customer loyalty, increase repeat business, and differentiate their brand in a competitive online marketplace.

Thus, long-term e-commerce relationships with customers can be built through increasing e-service quality, e-satisfaction, e-trust, and e-commitment of e-commerce customers. The study's results prove that the relationship marketing strengthening model can be achieved through the antecedents and consequences of e-trust of e-commerce customers so that it will support and accelerate the achievement of e-commerce's competitive advantage in online business.

Conclusions, limitation, and future research

This study concludes that e-service quality and e-satisfaction significantly positively affect customers' e-trust, e-commitment, and e-satisfaction. It also highlights the moderating effect of customers' e-trust in the relationship between e-service quality and e-commitment and between e-satisfaction and e-commitment. Furthermore, e-satisfaction is a crucial variable that moderates the relationship between e-service quality and e-trust and between e-service quality and e-commitment. This study is limited to one region in Indonesia, so generalisation is not possible. This study also does not limit the e-commerce type or a particular age cohort. This study only uses a sample of e-commerce customers. For future research, the sample can be expanded by involving sellers from e-commerce so that the research results will be more comprehensive with a sample of customers and sellers in e-commerce. It is necessary to explore other variables in subsequent research, both related to exogenous and endogenous variables and other mediating variables, to strengthen the construction of long-term relationships between industry and consumers. To develop and retain e-commerce customers, it is necessary to develop customer intimacy variables, endogenous customer loyalty variables and customer commitment mediator variables. In this way, e-commerce customer loyalty will be achieved. This will strengthen long-term relationships between e-commerce and customers.

Author contribution

Salamatun Asakdiyah: Conseptualisation, Methodology, Validation, Data Curation, Formal Analysis, Writing. **Deny Ismanto** and **Jason Keith Bonaga**: Writing – Review & Editing.

Declaration of interest

The authors confirm that no financial or interpersonal conflicts would have appeared to impact the research presented in this study.

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Appendix 1.

Convergent validity test result

Variable	Items	Loading Factor	AVE	Information
E-Commitment	COM.1	0.867	0.760	Valid
	COM.2	0.882		Valid
	COM.3	0.834		Valid
	COM.4	0.860		Valid
	COM.5	0.913		Valid
E-Service Quality	SQ.1	0.822	0.656	Valid
	SQ.2	0.711		Valid
	SQ.3	0.849		Valid
	SQ.4	0.823		Valid
	SQ.5	0.856		Valid
	SQ.6	0.852		Valid
	SQ.7	0.743		Valid
E-Satisfaction	ST.1	0.844	0.762	Valid
	ST.2	0.876		Valid
	ST.3	0.885		Valid
	ST.4	0.880		Valid
	ST.5	0.878		Valid
E-Trust	TR.1	0.887	0.680	Valid
	TR.2	0.841		Valid
	TR.3	0.825		Valid
	TR.4	0.815		Valid
	TR.5	0.750		Valid

Source: Authors' work (2023)

Appendix 2.

Fornell-Lareker criterion values

Variable	E-Commitment	E-Satisfaction	E-Service Quality	E-Trust
E-Commitment	0.872			
E-Satisfaction	0.829	0.873		
E-Service Quality	0.809	0.813	0.810	
E-Trust	0.769	0.741	0.802	0.825

Source: Authors' work (2023)

Appendix 3.

Cross loading values

Items	E-Commitment	E-Satisfaction	E-Service Quality	E-Trust
COM.1	0.867	0.761	0.688	0.692
COM.2	0.882	0.720	0.705	0.683
COM.3	0.834	0.678	0.646	0.633
COM.4	0.860	0.729	0.754	0.679
COM.5	0.913	0.720	0.728	0.662
SQ.1	0.667	0.676	0.822	0.643
SQ.2	0.554	0.594	0.711	0.599
SQ.3	0.736	0.669	0.849	0.710
SQ.4	0.690	0.624	0.823	0.620
SQ.5	0.659	0.716	0.856	0.670
SQ.6	0.648	0.688	0.852	0.715
SQ.7	0.622	0.636	0.743	0.580
ST.1	0.676	0.844	0.682	0.651
ST.2	0.773	0.876	0.705	0.693
ST.3	0.721	0.885	0.729	0.640
ST.4	0.740	0.880	0.723	0.637
ST.5	0.704	0.878	0.709	0.612
TR.1	0.745	0.704	0.756	0.887
TR.2	0.660	0.623	0.664	0.841
TR.3	0.641	0.604	0.684	0.825
TR.4	0.591	0.585	0.567	0.815
TR.5	0.507	0.521	0.620	0.750

Source: Authors' work (2023)

Appendix 4.

Reliability test result

Variable	Cronbach's Alpha	Composite Reliability
E-Commitment	0.921	0.940
E-Satisfaction	0.922	0.941
E-Service Quality	0.912	0.930
E-Trust	0.882	0.914

Source: Authors' work (2023)

Appendix 5.

R-Square test results result

Variable	R-*Square*	R-*Square Adjusted*
E-Commitment	0.758	0.754
E-Satisfaction	0.661	0.659
E-Trust	0.667	0.663

Source: Authors' work (2023)

Appendix 6.

Predictive relevance

Variable	Q^2 (=1-SSE/SSO)	Information
E-Commitment	0.569	Value predictive relevance
E-Satisfaction	0.496	Value predictive relevance
E-Trust	0.444	Value predictive relevance

Source: Authors' work (2023)