Optimizing E-Loyalty on The Bukalapak E-Commerce Platform: Exploring the Role of E-Service Quality Mediated by E-Satisfaction and E-Trust

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Abstract

This study aims to analyze and prove the effect of e-service quality on optimizing e-loyalty mediated by e-trust and e-satisfaction on the Bukalapak e-commerce platform by focusing on Bukalapak users in Cirebon City. This research focuses on using Bukalapak, where Bukalapak users still feel many complaints regarding long delivery, the Bukalapak help center cannot be contacted, and the pay later payment service is never late but the payment status is pending. These indications can be seen from user reviews published on several news sites. Sample determination was carried out through a purposive sampling technique. In this study, the sampling technique was carried out using the Slovin formula with an error tolerance level of 10%, so the number of respondents was 100. Respondents were selected based on the criteria of having used Bukalapak e-commerce services for the last 5 months and being domiciled in Cirebon City. The data collection method was done by distributing questionnaires online via Google Forms. Path analysis technique using SPSS Version 29.0.2.0 for Windows. Hypothesis testing was carried out using the Sobel test method. The results showed that e-service quality has a positive and significant effect on e-trust, e-satisfaction, and e-loyalty. E-satisfaction and e-trust have a positive and significant effect on e-loyalty. The results of this study also show that e-satisfaction and e-trust can mediate the effect of e-service quality on e-loyalty.

Keywords: E-commerce, E-service quality, E-satisfaction, E-trust, E-loyalty

1. Introduction

In the growing digital era, e-commerce has become one of the most important phenomena in global trade. The e-commerce market in Indonesia has grown very rapidly, the increase is in line with the increase in internet users, the population of middle-income people, and the penetration of mobile devices (Alfanur & Kadono, 2021). According to data obtained from research by the Association of Indonesian Internet Service Providers (APJII), the number of individuals using the Internet in Indonesia will reach 215.63 million people between 2022 and 2023. Meanwhile, data obtained from We Are Social (Putri & Setiawati, 2021) shows that interest in buying on *online* product sites in Indonesia through e-commerce applications reaches 80%, and online retail through websites shows a figure of 90% of internet usage about e-commerce usage activities. The rapid development of technology in the last twenty years has been implemented with the existence of e-commerce which has been able to drive revolutionary changes in business globally, including the entry of new markets, a diverse customer base, supply chain efficiency, improved customer service, increased profits, and reduced costs. In addition, e-commerce has many advantages in terms of overcoming geographical limitations, expanding market reach, creating markets for specialized products, and remaining available around the clock (Hamdani & Sari, 2023). With e-commerce, consumers can shop without being limited by time or location. Mobile devices equipped with internet access allow customers to access online stores without time limitations (Hongdiyanto et al., 2020). The existence of an e-commerce platform provides various services including buying and selling various products, services, and various other types of services that focus on business transactions via the Internet (Handayani et al., 2021). Along with the increasing competition in the e-commerce market, many service providers try to fulfill consumer desires by offering a variety of services to be able to face increasingly fierce competition to maintain the survival of the company.

Based on information from the Badan Pusat Statistik (BPS), there is an estimated 4.46% increase in the number of e-commerce businesses by 2022, reaching a total of 2.995.986 businesses (Badan Pusat Statistik, 2023). Meanwhile, the e-commerce market in Indonesia has a gross merchandise value (GMV) in 2030 of US$160 billion, demonstrating

the strength of the market. In line with this, a major contributor to this promising market prospect is the increasing number of e-commerce users in Indonesia, which by 2028 is estimated to reach around 131 million (Nurhayati-Wolff, 2023). According to information compiled from Statista Market Insights, the number of individuals using e-commerce in Indonesia in 2022 will reach around 178.94 million users. This figure continues to increase compared to the previous year by 12.79% or 158.65 million users (Deny, 2023).

Table 1: Data of E-commerce Visitors in Indonesia 2023

No	E-commerce	Data on *e-commerce* visitors in Indonesia for the period 2023			
		Q 1	Q 2	Q 3	Q 4
1	Shopee	157.97 million/month	166.97 million/month	216.77 million/month	241.6 million/month
2	Tokopedia	117.03 million/month	107.2 million/month	97.07 million/month	96.93 million/month
3	Lazada	83.23 million/month	74.53 million/month	52.23 million/month	44.13 million/month
4	Blibli	25.43 million/month	27.1 million/month	28.4 million/month	31.53 million/month
5	Bukalapak	18.07 million/month	15.57 million/month	12.37 million/month	10.07 million/month

Source: Databoks.katadata.co.id

Based on Table 1 above, data on e-commerce visitors in Indonesia for the period 2023 is presented. One of the popular platforms in Indonesia which in its operational activities adopts the Customer-to-Customer (C2C) business model is Bukalapak, this e-commerce platform was founded by Achmad Zaky, Nugroho Herucahyono, and Muhamad Fajrin Rasyid in 2010. Bukalapak is a digital platform that aims to facilitate the entry of small and medium enterprises (SMEs) into the Indonesian market. As an e-commerce platform that gains a significant amount of traffic in Indonesia, Bukalapak lags in terms of user engagement from its four main competitors namely Shopee, Lazada, Tokopedia, and Blibli (Ida Bagus Agung Surya Ari et al., n.d., 2023). The decline in the number of visits to the Bukalapak e-commerce platform cannot be separated from the assessment given by consumers about the quality of service felt by users. Based on data obtained from databooks.katadata.co.id (Adi Ahdiat, 2023) shows the number of visits from some of the largest e-commerce in Indonesia in the 2023 period, Shopee is ranked first with total visits from the first quarter (Q-1) to the fourth quarter (Q-4) which continues to increase, namely 783.31 million / month. The second position is occupied by Tokopedia, which in each quarter has decreased with a total of 418.23 million / month. Then the third position is followed by Lazada with a total visit of 254.12 million / month. Then Blibli occupied the fourth position with a total visit of 112.46 million / month. Meanwhile, Bukalapak, which filled the fifth position, experienced a very significant decline in the first quarter (Q-1) to the fourth quarter (Q-4) compared to other competitors, namely Bukalapak received visits totaling 56.08 million / month.

Table 2: Data of Bukalapak E-Commerce Site Visits in Indonesia in 5 Years

Year	Number of Visits Per Year
2019	287.16 million/month
2020	142.91 million/month
2021	119.52 million/month
2022	88.2 million/month
2023	56.08 million/month

Source: Databoks.katadata.co.id (Adi Ahdiat, 2023) and Wantiknas.go.id (Wantiknas, 2022)

The data in Table 2 shows a decline in visits to the Bukalapak e-commerce platform in the last five years. The decline in the number of visits cannot be separated from the reviews given by users while using Bukalapak. The number of negative reviews and negative news given by users on several news sites such as cnnindonesia.com (Eka Santhika, 2018), kredibel.com (Kredibel.com, 2024), antaranews.com (Andarningtyas, 2019) and many more. Complaints felt by Bukalapak users are related to platforms that often experience downtime, product delivery is not by the specified time, interference when making product purchase transactions, the lack of response given by Bukalapak in responding to complaints and negative comments from consumers which indicates poor service quality, and negative news related to leaked Bukalapak user data (Putu Puspita Sari Sastradi Putri, P. I., 2021). With the

increasingly fierce competition in the e-commerce industry, as is the case with the Bukalapak platform that implements the Customer-to-Customer (C2C) model, the main focus of its business does not only rest on increasing sales volume but emphasizes more efforts to meet customer needs and build their loyalty. The main goal of a company's success is to create customers who have loyalty to the company e-loyalty refers to the level of customer loyalty to a particular product platform or brand within the scope of online commerce. In addition, an element that is no less important in building better relationships with customers is loyalty and satisfaction (Yesica et al., 2023). Factors such as shopping convenience, competitive prices, good user experience, and responsive and quality customer service, play an important role in building loyalty. Other efforts that can be made to maintain long-term relationships with customers through e-commerce can be done by providing good e-service quality during the customer's purchasing process (Komang et al., n.d., 2023). According to (Handayani et al., 2021) in general, some literature states that the higher the e-service quality, the higher the e-satisfaction. Professionally, business can be carried out by utilizing technical advances to be able to establish good relationships with customers so that it will foster customer satisfaction, trust, and loyalty to products or services in the long term (Ida Bagus Agung Surya Ari et al., n.d., 2023). When an online platform provides good service quality (e-service quality), which includes responsiveness, intuitiveness, and efficiency, this will be able to increase the level of user trust (e-trust) in the platform used. This trust will then have an impact on user satisfaction (e-satisfaction), where users will feel satisfied with the experience. Long-term loyalty (e-loyalty) results from high satisfaction where users tend to use the platform repeatedly. Therefore, maintaining and improving the quality of online services, building customer trust, and ensuring customers are satisfied with the services offered are key to creating and maintaining loyalty in online business. In this context, this study aims to analyze efforts to optimize the role of e-loyalty through e-service quality mediated by e-trust and e-satisfaction on the Bukalapak e-commerce platform by focusing on Bukalapak users in Cirebon City. Bukalapak was chosen as the focus of the research because the e-commerce platform is one of the leading ones in Indonesia, with a large number of users spread across various regions in Indonesia.

2. Literature Review

2.1. E-Commerce

E-commerce is a sales process that occurs online via the Internet to meet consumer needs (Siska Ernawati Fatimah, 2023). E-commerce is an activity that involves buying, selling, and marketing products, services, and information over the Internet using electronic systems (Praseptiawan et al., 2022). The use of e-commerce in the business world has several advantages, including the globalization of trade, creation of employment opportunities, expansion of market share, increased productivity, a significant reduction in transaction costs, and increased sales volume (Omranifard & Robatmili, 2022). E-commerce provides great benefits in terms of communication, including product promotion and customer interaction (Pradana et al., 2024).

2.2. E-Service Quality

E-service quality is a service offered online to improve a site's ability to support shopping, transaction, and distribution activities effectively and efficiently (Ellitan et al., 2023). E-service quality is defined as an activity that refers to electronic service facilities that facilitate purchase and sales transactions to customers. Definitions related to e-service quality are also put forward by (Handayani et al., 2021) is the ability of a platform to expand shopping, purchasing, and distribution activities effectively and efficiently. There are seven dimensions and indicators of e-service quality (Ellitan et al., 2023) namely: 1) Efficiency: easy access to the application and smooth access to using the application. 2) Reliability: how efficiently the application is available and how well the application functions. 3) Guarantee: the accuracy of service offerings, product availability, application features, and product delivery according to the promised schedule. 4) Privacy: assurance of user information or personal accounts being protected, and assurance of behavioral data security. 5) Responsiveness: the responsiveness of the application provider and the willingness of the application to help users quickly. 6) Compensation: compensating and reimbursing service fees to users in situations where there is an error from the service provider. 7) Contact: There is customer service accessible by phone and an online representative available to receive complaints.

2.3. E-Satisfaction

E-Satisfaction refers to the level of satisfaction felt by customers when they make repeat purchases online (Putu Artaya & Kamisutara, 2023). Customer satisfaction is the result of consumers' evaluation of the company's performance to their expectations (Anggoro Wilis & Nurwulandari, 2020). E-satisfaction is meeting the standards, goals, or desires reflected in the customer's overall attitude toward online sellers (Armansyah, 2020). The

dimensions of e-satisfaction (Putri & Setiawati, 2021) namely: 1) Convenience, 2) Merchandising, 3) Site Design, and 4) Financial Security.

2.4. E-Trust

E-trust is an individual's perception of a particular entity and its properties that are considered to provide value or benefit (Innayah et al., 2022). E-Trust has an important role for service providers because they offer products that cannot be directly seen by consumers, with consumers paying before experiencing the product firsthand (Fatimah & Purdianto, 2020). Understanding the seller is a key factor in the overall purchase process (Sağlam & Jarrar, 2021). Electronic trust in online transactions is often used as an indicator of the extent to which the quality of a product or service can meet customer expectations (Handayani et al., 2021). According to (Putu Artaya & Kamisutara, 2023) there are three indicators of e-trust, namely: 1) Transaction security. 2) The website can protect privacy. 3) Trusted online store.

2.5. E-Loyalty

E-Loyalty describes the extent to which customers remain loyal in making purchases or using products or services in the future, without considering possible factors that may encourage them to try other options (Wani et al., 2023). Loyalty can be explained as individual loyalty to a product, be it goods or services (Curatman et al., 2019). The quality of electronic services provided by a company plays an important role in determining the level of electronic customer loyalty because it will make every transaction more convenient and efficient for users (Mukaromah Dewi Puspita & Shinta Dhewi, 2022). One of the risks of loyalty is the design of the program, which may not always be clearly understood by customers and can be confusing, which also negatively affects the results of e-commerce businesses (Šárka Zapletalová, 2023). In this context, e-loyalty is seen as a positive and optimal attitude of customers towards online businesses, which influences their purchasing behavior patterns (Salehzadeh et al., 2023). There are four indicators of e-loyalty (Putu Artaya & Kamisutara, 2023) namely: 1) Repeat purchase. 2) Brand loyalty. 3) Recommend to others. 4) Spread positivity to others.

2.6. E-Service Quality on E-Satisfaction

For e-commerce, the importance of quality customer service, including prompt responses to user queries and feedback, greatly affects the level of customer satisfaction with the e-services provided by a platform. Customer satisfaction can be influenced by the quality of electronic services provided by the company, whether it is satisfactory or not because the quality of these services plays an important role in determining the level of customer satisfaction (Juwaini et al., 2022). Findings from research (Ginting et al., 2023) show that quality e-services significantly affect customer satisfaction.

2.7. E-Service Quality on E-Trust

In the realm of online business, service quality has a much greater importance than cheap price offers or a robust website presence. This level of service quality is measured by how well the service meets the customer's expectations of its performance. It is hypothesized that in a virtual environment, customer trust will increase positively in response to e-service quality (Wani et al., 2023).

2.8. E-Service Quality on E-Loyalty

E-service quality refers to the assessment made by consumers of the e-services provided by digital companies. Several studies have found a relationship between service quality and the level of customer loyalty. Research conducted (Juwaini et al., 2022) concluded that electronic service quality has a positive, but not significant, impact on customer loyalty in the electronic context.

2.9. E-Satisfaction to E-Loyalty

E-satisfaction is the level of satisfaction assessed by customers based on their previous experience with a particular e-commerce company (Wani et al., 2023). Consumers who feel satisfied with the services of a particular company are likely to use it again in the future. Previous research shows that satisfaction has a positive relationship with loyalty. The higher the level of customer satisfaction, the more likely they will remain loyal to the company. Research (Anggoro Wilis & Nurwulandari, 2020) shows that electronic satisfaction has a very positive impact on the electronic loyalty of a platform.

2.10. E-Trust on E-Loyalty

E-trust is a customer's willingness to acknowledge potential imperfections in an online transaction, based on their optimism towards the expected behavior of the online store in the future (Anggoro Wilis & Nurwulandari, 2020). On the other hand, e-loyalty reflects customers' habits of using online services consistently, accessing the platform frequently, and showing continued loyalty over a long period. Research (Anggoro Wilis & Nurwulandari, 2020) found that the e-trust variable with e-loyalty has a positive relationship.

2.11. E-Satisfaction mediates the effect of E-Service Quality on E-Loyalty

E-loyalty is the long-term result of consumer satisfaction with the performance of services provided by an online platform. Based on the literature, website convenience and efficiency along with information quality are core aspects of e-service quality. These have a direct or indirect influence on loyalty through two proven indicators, namely trust and satisfaction. Research conducted by (Ali Alkhateeb, 2020) e-satisfaction positively and significantly plays a role in mediating the effect of e-service quality on e-loyalty.

2.12. E-Trust mediates the effect of E-Service Quality on E-Loyalty

Superior e-service quality is achieved when consumers feel secure and trust the services provided, thus strengthening the relationship between the business and the customer. Trust plays a central role in building loyalty to a particular online platform. In research conducted by (Chmeis & Zaiter, 2024) e-trust positively and significantly plays a role in mediating the effect of e-service quality on e-loyalty.

2.13. Research Model

In this study, there is one independent variable, namely E-service quality, and two moderating variables, namely E-satisfaction and E-trust with the dependent variable E-loyalty.
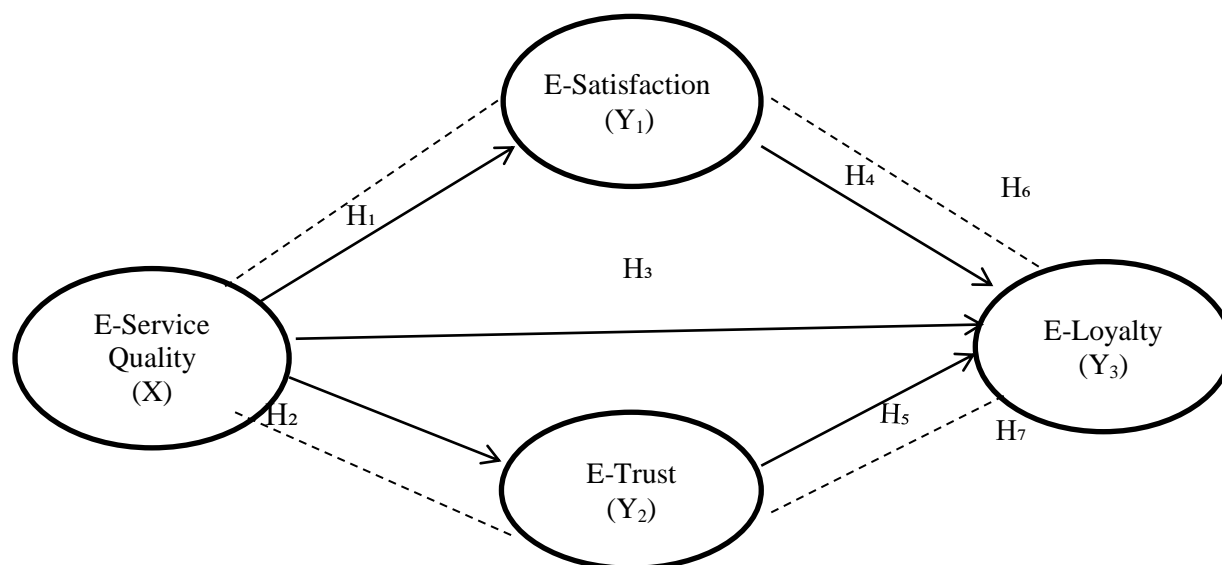

Figure 1: Research Model
Source: Processed by the author

2.14. Hypothesis

Hypotheses are initial assumptions proposed by researchers in a study. The hypothesis presented in this study can be summarized as follows:

H_1: E-service quality has a significant effect on E-satisfaction
H_2: E-service quality has a significant effect on E-trust
H_3: E-service quality has an insignificant effect on electronic E-loyalty
H_4: E-satisfaction has a significant effect on E-loyalty
H_5: E-trust has a significant effect on E-loyalty
H_6: E-satisfaction mediates E-service quality on E-loyalty
H_7: E-trust mediates E-service quality on E-loyalty

3. Materials and Methods

3.1. Materials

The study was conducted in Cirebon City with 348.912 residents (Disdukcapil Jabar, 2023). This research involves residents of Cirebon City who have used the Bukalapak e-commerce platform before. The sampling technique in this study used the Slovin formula (Nalendra et al., 2021) with an error tolerance of 10% then obtained 100 respondents. Sampling using purposive sampling technique with criteria in sampling, namely people who live in Cirebon City and have used Bukalapak e-commerce services for the last 5 months.

3.2. Methods

The method used for data collection is distributing questionnaires online using Google Forms. The path analysis technique was used in this study to know the direct and indirect effects of independent variables (exogenous) on the dependent variable (endogenous) using SPSS Version 29.0.2.0 for Windows. Hypothesis testing is carried out using the Sobel test to evaluate the effect of the independent variable on the dependent variable through the moderating effect of other variables (Zhao et al., 2022). In this study, the Sobel test was conducted to determine the effect of e-service quality (X) on e-loyalty (Y_3) through e-satisfaction (Y_1) and the effect of e-service quality (X) on e-loyalty (Y_3) through e-trust (Y_2) as a moderating variable.

4. Results and Discussion

4.1. Results

Data was collected by filling out a questionnaire by 100 respondents selected according to the predetermined research criteria, using a Google Form distributed through the WhatsApp and Instagram social media platforms. Path analysis was conducted with the following results:

4.1.1. Regression Model I Effect of *E-service quality* Variable (X) on *E-satisfaction* Variable (Y_1)

Table 3: Summary Table of the Effect of *E-service quality* on *E-satisfaction*

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.898[a]	0.806	0.804	2.902
a. Predictors: (Constant), EServiceQuality_X				

Table 4: Table Coefficients Effect of *E-service quality* on *E-satisfaction*

		Coefficients[a]				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.771	1.465		-0.526	0.600
	EServiceQuality_X	0.534	0.026	0.898	20.185	<0.001
a. Dependent Variable: ESatisfaction_Y_1						

Source: Processed with SPSS 29, 2024

In Table 4, it can be seen that the significance value of the e-service quality variable (X) is 0.001 < 0.05. These results provide the conclusion that the e-service quality variable (X) has a significant effect on the e-satisfaction variable (Y_1). The value of R^2 or R Square contained in Table 3 is 0.806, this shows that the contribution of the influence of e-service quality (X) on e-satisfaction (Y_1) is 80.6% while the remaining 19.4% is the contribution of other variables not included in the study. Meanwhile, the value of e_1 can be found by the formula $e_1 = \sqrt{1 - 0.806} = 0.440$.

4.1.2. Regression Model II Effect of E-service quality Variables (X) on E-trust Variables (Y_2)

Table 5: Summary Table of the Effect of *E-service quality* on *E-trust*

			Model Summary	
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.881[a]	0.775	0.773	4.456
a. Predictors: (Constant), EServiceQuality_X				

Table 6: Table Coefficients Effect of *E-service quality* on *E-trust*

	Coefficients[a]					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.370	2.250		-0.609	0.544
	EserviceQuality_X	0.747	0.041	0.881	18.391	<0.001
a. Dependent Variable: Etrust_Y$_2$						

Source: Processed with SPSS 29, 2024

In Table 6, it can be seen that the significance value of the e-service quality variable (X) is 0.001 < 0.05. These results provide the conclusion that the e-service quality variable (X) has a significant effect on the e-trust variable (Y_2). The value of R^2 or R Square found in Table 5 is 0.775 this shows that the contribution of the influence of e-service quality (X) on e-trust (Y_2) is 77.5% while the remaining 22.5% is the contribution of other variables not included in the study. Meanwhile, the value of e_2 can be found by the formula $e_2 = \sqrt{1 - 0.775} = 0.474$.

4.1.3. Regression Model III Effect of E-service quality Variables (X), E-satisfaction (Y_1), and E-trust (Y_2) on E-loyalty (Y_3)

Table 7: Summary Table of the Effect of E-service quality, E-satisfaction, and E-trust on E-loyalty

			Model Summary	
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.893[a]	0.797	0.790	2.424
a. Predictors: (Constant), Etrust_Y$_2$, EserviceQuality_X, Esatisfaction_Y$_1$				

Table 8: Table Coefficients Effect of *E-service quality*, *E-satisfaction*, and *E-trust* on *E-loyalty*

	Coefficients[a]					
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.085	1.226		0.885	0.378
	EserviceQuality_X	-0.053	0.054	-0.110	-0.977	0.331
	Esatisfaction_Y$_1$	0.395	0.099	0.489	3.988	<,001
	Etrust_Y$_2$	0.299	0.064	0.528	4.635	<,001
a. Dependent Variable: Eloyalty_Y$_3$						

Source: Processed with SPSS 29, 2024

In Table 8, it can be seen that the significance value of the e-service quality variable (X) is 0.331 > 0.05, variable e-satisfaction (Y_1) is 0.001 < 0.05, and variable e-trust (Y_2) is 0.001 < 0.05. These results provide the conclusion that the e-service quality variable (X) has an insignificant effect on the e-loyalty variable (Y_3), the e-satisfaction variable (Y_1) has a significant effect on the e-loyalty variable (Y_3), and the e-trust variable (Y_2) has a significant effect on the

e-loyalty variable (Y_3). The value of R^2 or R Square found in Table 7 is 0.797 this shows that the contribution of the influence of e-service quality (X), e-satisfaction (Y_1), and e-trust (Y_2) on e-loyalty (Y_3) is 79.7% while the remaining 20.3% is the contribution of other variables not included in the study. Meanwhile, the value of e_3 can be found using the formula $e_3 = \sqrt{1 - 0.797} = 0.450$.

4.1.4. Direct Effect, Indirect Effect, and Total Effect E-service quality (X), E-satisfaction (Y_1), E-trust (Y_2) and E-loyalty (Y_3)

Table 9: Direct Effect, Indirect Effect, and Total Effect of E-service quality (X), E-satisfaction (Y_1), E-trust (Y_2), and E-loyalty (Y_3)

Variable Influence	Direct Influence	Indirect Effect	Total Influence
E-service quality (X) $\rightarrow$ E-satisfaction (Y_1)	0.898	-	-
E-service quality (X) $\rightarrow$ E-trust (Y_2)	0.881	-	-
E-service quality (X) $\rightarrow$ E-loyalty (Y_3)	-0.110	-	-
E-satisfaction (Y_1) $\rightarrow$ E-loyalty (Y_3)	0.489	0.439	0.329
E-trust (Y_2) $\rightarrow$ E-loyalty (Y_3)	0.528	0.465	0.355

Source: Processed by the author

The e-service quality (X) qualification has a direct effect (-0.110) on e-loyalty (Y_3), and the indirect effect of e-service quality (X) through e-satisfaction (Y_1) on e-loyalty (Y_3) is 0.439. Therefore, the total effect that e-service quality (X) has on e-loyalty (Y_3) is 0.329. The calculation results show that the direct effect value (-0.110) and the indirect effect of 0.439, which means that the indirect effect value is greater than the direct effect value. These results indicate that indirectly, e-service quality (X) through e-satisfaction (Y_1) has a significant effect on e-loyalty (Y_3).

However, e-service quality (X) through e-trust (Y_2) on e-loyalty (Y_3) has an indirect effect of 0.465. Then the total effect given by e-service quality (X) on e-loyalty (Y_3) is 0.355. Based on the calculation results, it is known that the direct effect value is (-0.110) and the indirect effect is 0.465, which means that the indirect effect value is greater than the direct effect value. These results indicate that indirectly, e-service quality (X) through e-trust (Y_2) has a significant effect on e-loyalty (Y_3).

From the known values of e_1, e_2, and e_3, the total coefficient of determination can be calculated as follows:

$$
\begin{aligned}
R^2m &= 1 - (e_1)^2 (e_2)^2 (e_3)^2 \\
&= 1 - (0.440)^2 (0.474)^2 (0.450)^2 \\
&= 1 - (0.194)(0.225)(0.202) \\
&= 1 - 0.009 \\
&= 0.991
\end{aligned}
$$

The total coefficient of determination of 0.991 means that 99.1% of the variation in the e-loyalty variable (Y_3) is influenced by the e-service quality variable (X), e-satisfaction (Y_1), and e-trust (Y_2), while the remaining 0.9% is explained by other factors not included in the research model.

4.1.5. Hypothesis Test
1) Sobel test E-satisfaction mediates the effect of E-service quality on E-loyalty
Table 10: Coefficients table E-satisfaction mediates the effect of E-service quality on E-loyalty

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.961	1.210		-0.795	0.429
	EServiceQuality_X1	0.338	0.036	0.569	9.420	<0.001
	ELoyalty_Y3	0.512	0.075	0.414	6.842	<0.001
a. Dependent Variable: ESatisfaction_Y_1						

Source: Processed with SPSS 29, 2024

Table 10 shows the effect of the hypothesis (intervention). To find out, the value of the Sobel test that has been carried out is calculated with the Sobel Test Calculator for the Significance of Mediation. The value of e-satisfaction (Y_1) is 6.479 > 0.195 t table value. Thus, H_0 is rejected and H_1 is accepted, this indicates that there is an indirect influence between e-satisfaction (Y_1) as an intervention variable mediating e-service quality (X) on e-loyalty (Y_3). So it can be concluded that the results of the proposed hypothesis have been tested.

2) Sobel test E-trust mediates the effect of E-service quality on E-loyalty

Table 11: E-trust coefficients table mediates the effect of E-service quality on E-loyalty

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	-1.676	1.813		-0.925	0.357
EServiceQuality_X1	0.432	0.054	0.510	8.032	<0.001
ELoyalty_Y3	0.825	0.112	0.467	7.347	<0.001
a. Dependent Variable: ETrust_Y_2					

Source: Processed with SPSS 29, 2024

Table 11 shows that to determine the effect of the hypothesis (intervention), the value of the Sobel test that has been carried out is calculated with the Sobel Test Calculator for the Significance of Mediation. The value of e-trust (Y_2) is 6.830 > 0.195 t table value, so H_0 is rejected and H_1 is accepted. This shows that there is an indirect influence between e-trust (Y_2) as an intervening variable that mediates e-service quality (X) on e-loyalty (Y_3), so it can be concluded that this can show the results of the proposed hypothesis have been tested.

4.2. Discussion

The Sobel test value of 6.479 was obtained with a t-table value of 0.195. Therefore, the Sobel test value is greater than the t table value, which is 6.479 > 0.195. As a result, the null hypothesis (H_{01}) is rejected, while the alternative hypothesis (H_{a1}) is accepted. In short, it can be concluded that the proposed hypothesis "E-satisfaction mediates the effect of E-service quality on E-loyalty" is accepted. This is in line with research (Wani et al., 2023). The results of this study show that e-service quality has a positive and significant effect on e-satisfaction. This shows that the better service quality, the higher the level of customer satisfaction.

The Sobel test value is 6.830 with a table t value of 0.195, so the value is greater than the t-table value, namely 6.830 > 0.195. As a result, the second hypothesis (H_{02}) is rejected, while the alternative hypothesis (H_{a2}) is accepted. So it can be concluded that the proposed hypothesis "E-trust mediates the effect of E-service quality on E-loyalty" is accepted. This is in line with research (Wani et al., 2023), which found that e-service quality has a positive and significant impact on e-trust. This means that the better the service provided, the greater the customer's trust in the online store.

5. Conclusion

The results of testing and analysis show that e-service quality affects e-loyalty on the Bukalapak e-commerce platform, which is mediated by e-trust and e-satisfaction. The e-trust variable that mediates the effect of e-service quality on e-loyalty is 64.79%, while the e-trust variable that mediates the effect of e-service quality on e-loyalty is 68.30%. From the research findings, it can be concluded that the hypothesis proposed in this study has been proven valid or accepted. Future researchers are expected to conduct further studies related to the variables in this study based on further journals and test more respondents with different criteria and characteristics. Researchers are also expected to continue to develop innovative methodologies, especially in the marketing field.

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