



Analysis of The Relationship between E-Service Quality, E-Satisfaction, and E-Loyalty in Indonesia E-Commerce Sector

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ARTICLE INFORMATION	ABSTRACT
<i>Section</i> Research Results Articles	This study analyzes the relationship between e-service quality, e-satisfaction, and e-loyalty in the e-commerce sector in Indonesia. The sample used in this study had used or bought goods from e-commerce, had an account or membership of one or more e-commerce operating in Indonesia, both men and women with an age range of 17-60 years totaling 200 respondents. This study used the variables e-service quality, e-satisfaction, and e-loyalty. The data collection technique in this study was using a questionnaire which was then analyzed using the Structural Equation Model (AMOS v 23). The results indicate that e-service quality has a significant positive effect on e-satisfaction. E-satisfaction has a significant positive relationship with e-loyalty. E-service quality has a significant positive effect on e-loyalty. E-satisfaction can mediate the relationship between e-service quality and e-loyalty in a significant positive manner.
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INTRODUCTION

In this era of globalization, information technology is developing rapidly (Ho and Lee, 2007). Currently, all information can be accessed easily and quickly via the Internet. This can be seen from the growth of internet users in Indonesia which continues to increase every year (INTI MEDIA, 2024). Based on data quoted from the Indonesian Internet Service Providers Association (APJII) the total number of internet users in Indonesia is 171 million of the total population in Indonesia, 64.8% are internet users. Active internet users via mobile or



smartphone number 142.8 million. This shows that internet users in Indonesia are quite large because more than half of the population are active internet users (Publisher, 2019).

However, along with the development of the era, the traditional buying and selling process has been abandoned and replaced by online buying and selling or often called e-commerce. E-commerce is an activity of conducting business transactions online through the internet and devices integrated with the internet (Laudon and Laudon, 2020). According to Laudon and Laudon (2020) there are five types of e-commerce, namely: Business-to-Consumer (B2C) E-commerce, Business-to-Business (B2B) E-commerce, Customer-to-Customer (C2C) E-commerce, Peer-to-Peer (P2P) E-commerce, and Mobile Commerce (M-Commerce). One form of e-commerce that is widely known by the Indonesian people is C2C (Customer to Customer) or more familiarly called a buying and selling site. In Indonesia, there are e-commerce companies that use the C2C concept, including Tokopedia, Bukalapak, Shopee, Blibli, and Lazada. These five companies are the main players in e-commerce in Indonesia and can be said to have popularized e-commerce in Indonesia. Service quality in the context of e-commerce is called electronic service (e-servqual). For consistency in mentioning service quality in the context of e-commerce, the term e-servqual will be used.

E-servqual closely related to consumer satisfaction and loyalty, in the context of e-commerce consumer satisfaction is called e-satisfaction, while consumer loyalty is called e-loyalty. According to Giovanis and Athanasopoulou (2014) e-satisfaction is conceptualized as the emotional state of customers due to customer interactions with online retailers. Anderson and Srinivasan (2003) argues that e-loyalty is a favorable attitude of customers towards electronic business that results in repeat purchase behavior. In addition, e-loyalty refers to the consumer's intention to buy from a site or the intention to return to a particular website. In Indonesia, research related to e-servqual has been widely conducted, especially in the online store or e-commerce sector. (Akbar and Djatmiko, 2016; Anisah, Suhendra and Chumaidiyah, 2018; Nabila, Ariyanti and Sumrahadi, 2018) have researched the influence of e-servqual on e-satisfaction. These studies prove that the level of consumer satisfaction on e-commerce sites in Indonesia is influenced by various factors, one of which is e-servqual.

Akbar and Djatmiko (2016) conducted a study to measure Lazada.co.id customer assessments of e-servqual, e-satisfaction, and e-loyalty variables. This study proves that e-servqual has a positive effect on e-satisfaction and e-loyalty. Anisah, Suhendra and Chumaidiyah (2018) studied the e-commerce Blanja.com which tries to measure the effect of implementing e-servqual on e-satisfaction. This study proves that implementing e-servqual on e-commerce platforms can improve the quality of consumer services, especially in the user interface (UI) so that it can increase consumer satisfaction and attract people to use the e-commerce platform. Nabila, Ariyanti and Sumrahadi (2018) studied the Bhinneka.com site to describe the performance of e-servqual based on user assessments of perceived service quality and expected service quality. The results of the study prove that implementing e-servqual can meet the quality expected by consumers.

In addition, research related to e-servqual has also been widely conducted outside Indonesia, some of which are as follows (Ting *et al.*, 2016; Al-dweeri *et al.*, 2017; Rita, Oliveira and Farisa, 2019), which researches are those examples of the many studies on e-servqual conducted outside Indonesia. The results of research conducted by researchers outside Indonesia have similarities with research conducted by Indonesian researchers, namely both proving that e-servqual can influence consumer satisfaction (including e-satisfaction).

Rita, Oliveira and Farisa (2019) studied with the goal of measuring the effect of e-servqual on e-commerce consumer satisfaction. This study proves that consumers are satisfied with the ease of finding information about a product on the e-commerce site. Ting *et al.* (2016) conducted a study aimed at evaluating the application of e-servqual to e-satisfaction. This study

proves that the e-servqual dimension influences e-satisfaction. Al-dweeri *et al.* (2017) studied the Amazon.com site which tries to analyze the effect of the e-servqual dimension on e-satisfaction in e-commerce. The results are that the e-servqual dimension affects e-satisfaction.

Although research on the relationship between e-servqual and consumer satisfaction (including e-satisfaction) has been widely conducted by researchers, these studies only focus on one e-commerce, while research themes that aim to test the dimensions of e-servqual in different e-commerce user groups are still limited. So mainly this study fills the gap in the research theme.

Therefore, conduct research to determine how e-servqual affects e-satisfaction on e-commerce sites in Indonesia. Not only up to satisfaction, research that tests consumer loyalty (e-loyalty) as an impact of satisfaction (e-satisfaction) also needs to be done. Given the variety of e-commerce sites and/or applications used by consumers in Indonesia, testing various factors that form e-servqual, e-satisfaction and e-loyalty in different consumer groups is important to do.

LITERATURE REVIEW & DEVELOPMENT HYPOTHESIS

E-Commerce

According to Laudon and Laudon (2020) e-commerce is a process of buying and selling products electronically by consumers and from company to company with computers as intermediaries for business transactions. E-commerce is the use of communication networks and computers to carry out business processes. E-commerce is one of the important strategies in today's business, because e-commerce can increase the level of efficiency in a company (Rohm and Swaminathan, 2004).

Service Quality (SERVQUAL)

Lewis and Booms (1983) define service quality as a measure of how well the level of service provided is able to match customer expectations. According to Parasuraman, Zeithaml and Berry (1985), service quality is how far the difference is between customer expectations and reality for the services they receive. Tjiptono (2015) argues that service quality can be interpreted as an effort to fulfill consumer needs and desires and the accuracy of its delivery in balancing consumer expectations.

Service Quality Dimensions

According to Tjiptono and Chandra (2017), there are five main dimensions of service quality which are arranged according to their relative level.

- a. Reliability relates to the company's ability to provide accurate services the first time without making any errors and to deliver its services within the agreed time.
- b. Responsiveness, regarding the willingness and ability of employees to help employees and respond to their requests, as well as informing when services will be provided and then providing services promptly.
- c. Assurance, namely the behavior of employees is able to grow customer trust in the company and the company can create a sense of security for its customers.
- d. Empathy, meaning that the company understands its customers' problems and acts in the customer's best interests, as well as providing personal attention to customers and having convenient operating hours.

- e. Physical evidence, regarding the attractiveness of the physical facilities, equipment and materials used by the company and the appearance of employees.

Electronic Service Quality (E-SERVQUAL)

According to Yen and Lu (2008) e-servqual is described as an overall customer evaluation and assessment of the excellence and quality of delivery regarding the excellence and quality of electronic delivery services in the cyberspace market. Parasuraman, Zeithaml and Malhotra (2005) stated that e-servqual includes the ability of customers to access the site, the ability to search for products and information related to the product, and leave the site in question with minimal effort.

E-SERVQUAL Dimensions

According to Suryani (2013), E-Service Quality can be measured using these indicators:

- a. Website Design
A quality website is one that in its design makes it easy to interact with customers. Copied with an attractive appearance is also an important attraction that will influence purchases via the internet.
- b. Reliability
Reliability is assessed from the website's ability to provide information and accuracy in filling in, appropriate and fast responses, and keeping personal information safe.
- c. Responsiveness
Customers expect companies that make purchases online to respond quickly to problems reported by customers. Customers usually assess this responsiveness by the speed of navigation, searching for information, the opportunity to ask questions and receiving answers.
- d. Trust
Trust is demonstrated by customers' confidence to accept the vulnerability of online shopping in meeting their expectations.
- e. Personalization
Personalization includes services that allow customers to receive attention and dialogue with the company.

Customer Satisfaction

Oliver (2010) defines satisfaction as a deep commitment to a service provider. Satisfaction intentions range from giving from the same seller in the future to recommending the seller to others. Mathwick (2002) defines this satisfaction intention as an individual's intention to recommend an online store, retailer's site, and buy something in the future.

E-Satisfaction

E-satisfaction conceptualized as the emotional state of customers resulting from customer interactions with online retailers over time Giovanis and Athanasopoulou (2014). According to Oliver (2010) satisfaction summarizes the state when the emotions surrounding consumers are combined with earlier consumer feelings about the shopping experience. E-satisfaction, in the same vein, according to Anderson and Srinivasan (2003) e-satisfaction as customer satisfaction regarding the previous purchasing experience from an e-commerce company.

Customer Loyalty

According to Tjiptono (2015) consumer loyalty is a customer's commitment to a brand, store or supplier based on very positive traits in long-term purchases. According to Durianto, Sugiarto and Sitinjak (2004) loyal consumers will generally make purchases of the brand even though they face many alternative brands of competing products that offer superior product characteristics viewed from various angles.

E-Loyalty

Anderson and Srinivasan (2003) define e-loyalty as a customer's favorable attitude toward an electronic business that results in repeat purchase behavior. In addition, e-loyalty refers to a consumer's intention to purchase from a website or the intention to return to a particular website (Hur, Ko and Valacich, 2011).

Hypothesis Development

The Relationship between Efficiency and E-Customer Satisfaction

Al-dweeri *et al.* (2017) in their research found that efficiency has a positive effect on customer satisfaction in online shopping. Ting *et al.*, (2016) in their research proved that the efficiency variable shows a positive effect on e-customer satisfaction. Águila-Obra, Antonio and Al-dweeri (2013) studied with the goal of examining the relationship between e-servqual and e-customer satisfaction, the study showed that the efficiency variable has a positive effect on e-customer satisfaction. These studies prove that efficiency can produce feelings of satisfaction in consumers. Based on this statement, a hypothesis can be formed, that is:

H₁: Efficiency has a positive effect on e-customer satisfaction.

The Relationship between Fulfillment and E-Customer Satisfaction

Research conducted by Ting *et al.* (2016) studied the relationship between e-servqual and customer satisfaction, the study showed that the fulfillment variable affects customer satisfaction. Águila-Obra, Antonio and Al-dweeri (2013) in their study proved that the fulfillment dimension in e-servqual has a positive effect on e-satisfaction. Another study conducted by Rita, Oliveira and Farisa (2019) showed that the fulfillment variable has a positive effect on customer satisfaction on online shopping sites. Based on this statement, a hypothesis can be formed, that is:

H₂: Fulfillment positively influences e-customer satisfaction.

The Relationship between Privacy and E-Customer Satisfaction

Research conducted by Rita, Oliveira and Farisa (2019) shows that privacy variables significantly affect e-satisfaction. Ting *et al.* (2016) who studied the relationship between privacy in the e-servqual dimension and e-satisfaction argued that privacy has a positive relationship with e-satisfaction. Behjati, Nahich and Othaman (2012) in their research argued that privacy in the e-servqual dimension can affect consumer satisfaction. Meanwhile, research conducted by Al-dweeri *et al.* (2017) showed that privacy variables have a positive effect on consumer e-satisfaction in online stores. Based on this statement, a hypothesis can be formed, that is:

H₃: Privacy positively influences e-customer satisfaction.

The Relationship between Responsiveness and E-Customer Satisfaction

Behjati, Nahich and Othaman (2012) in their research proved that responsiveness has a positive effect on customer satisfaction. Ting *et al.* (2016) in their research also proved that the responsiveness variable shows a positive effect on e-satisfaction. Lee and Lin (2005) studied online shopping in Taiwan, their research was to examine the relationship between e-servqual and consumer perception, the study showed that the responsiveness variable has a positive effect on customer satisfaction. These studies prove that responsiveness can produce feelings of satisfaction in consumers. Based on this statement, a hypothesis can be formed, that is:

H4: Responsiveness positively influences e-customer satisfaction.

Relationship between Site and E-Customer Satisfaction

Ting *et al.* (2016) in their research found that website design has a positive effect on customer satisfaction. Rita, Oliveira and Farisa (2019) in their research also proved that the dimensions of website design show a positive effect on customer satisfaction. Lee and Lin (2005) studied with the goal of examining the relationship between e-servqual and customer perception, the study showed that the dimensions of website design have a positive effect on customer satisfaction. These studies prove that website design can produce feelings of satisfaction in consumers. Based on this statement, the following hypothesis can be formed:

H5: Website design has a positive effect on e-customer satisfaction.

The Relationship between Contact and E-Customer Satisfaction

Rodríguez *et al.* (2020) studied e-customer satisfaction using the e-servqual approach in fashion e-retail in Spain, their study proved that the contact dimension in e-servqual has a positive effect on e-satisfaction. Ting *et al.* (2016) in their study also proved that the contact variable showed a positive effect on e-customer satisfaction. Parasuraman, Zeithaml and Malhotra (2005) in their study also proved that contact in the e-servqual dimension has a positive effect on customer satisfaction. These studies prove that contact can produce feelings of satisfaction in consumers. Based on this statement, the following hypothesis can be proposed:

H6: Contact positively influences e-customer satisfaction.

The Relationship between E-Satisfaction and E-Loyalty

Behjati, Nahich and Othaman (2012) in their research proved that the variables between e-satisfaction and e-loyalty have a significant positive relationship. Águila-Obra, Antonio and Al-dweeri (2013) in their research proved that e-satisfaction has a positive effect on e-loyalty. Rodríguez *et al.* (2020) also proved in their research that e-satisfaction has a significant relationship with e-loyalty. So the hypothesis related to the relationship between e-satisfaction and e-loyalty can be formulated as follows:

H7: E-satisfaction has a positive effect on e-loyalty.

The Relationship between E-SERVQUAL and E-Loyalty

Behjati, Nahich and Othaman (2012) in their research proved that the variables between e-servqual and e-loyalty have a significant positive relationship. Águila-Obra, Antonio and Al-dweeri (2013) in their research proved that e-servqual has a positive effect on e-loyalty.

Rodríguez *et al.* (2020) also proved in their research that e-servqual has a significant relationship with e-loyalty. So the following hypothesis can be formulated:

H₈: *E-servqual has a positive effect on e-loyalty.*

The Relationship between E-SERVQUAL and E-Loyalty through E-Satisfaction

Szymanski and Henard (2001) in their research stated that e-satisfaction is defined as customer satisfaction in relation to customer experience after purchasing something from a particular e-retailing company. According to Anderson and Srinivasan (2003), there are three e-satisfaction indicators, that is:

- The shopping experience from an e-commerce company is higher than customer expectations.
- Customers are satisfied with their shopping experience at an e-commerce company
- Customers are not interested in looking for alternative e-commerce companies

According to Al-dweeri *et al.* (2017) in his research, he stated that the e-satisfaction variable in its role as a mediator between e-servqual and e-loyalty has a significant positive relationship.

H₉: *E-servqual has a positive effect on e-loyalty through e-satisfaction.*

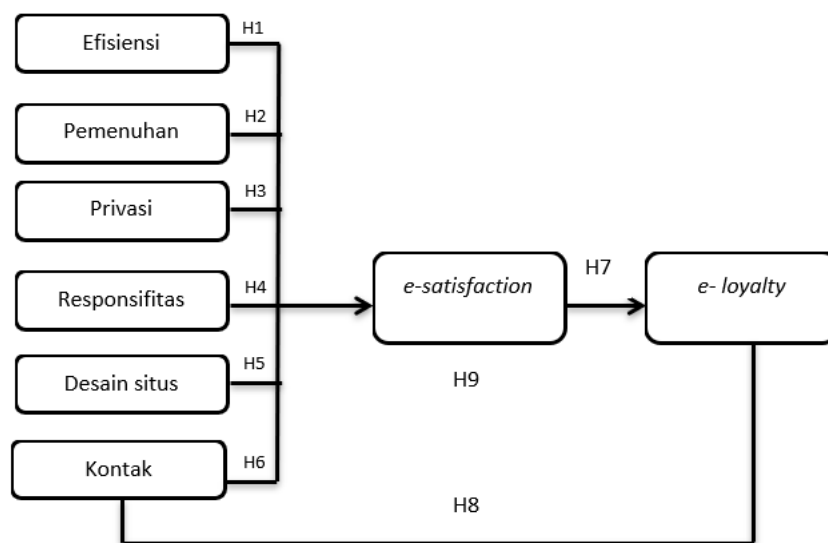


Figure 1. Research Framework

Source: (Behjati, Nahich and Othaman, 2012; Águila-Obra, Antonio and Al-dweeri, 2013; Rodríguez *et al.*, 2020)

RESEARCH METHODS

In this study, the population used is people who have e-commerce accounts and people who have shopped online through e-commerce. In this study, samples were taken from people who have used or purchased goods from e-commerce, have accounts or memberships of one or more e-commerce operating in Indonesia, both men and women with an age range of 17-60 years. Sampling is based on the availability of elements and the ease of obtaining them. Hair Jr. *et al.*

(2019) suggests that the minimum number of research samples whose exact population is unknown is five times the variables analyzed or question indicators.

$$\text{Number of samples} = 5 \times \text{variable indicators (number of questions)}$$

The number of question indicators from this study is 31, so the minimum sample in this study is:

$$5 \times 31 = 155 \text{ Samples}$$

This research is a quantitative research with primary data as the data source. Primary data is data obtained from sources who are directly related to the research and are able to provide information. The data obtained in this study are data obtained from distributing questionnaires to research subjects. Data collection in this study was carried out through two main methods, namely questionnaires and measurement scales. Questionnaires are used as the main tool to obtain data from respondents. In this case, respondents are asked to fill in the questions that have been prepared and return them to the researcher after completion.

Meanwhile, to measure the response to each question asked, a Likert scale is used. This scale is commonly used to assess respondents' attitudes, opinions, and perceptions of an object or event. Answers are given in five levels of assessment, namely strongly disagree (score 1), disagree (score 2), neutral (score 3), agree (score 4), and strongly agree (score 5). This scale helps researchers in processing and analyzing data quantitatively so that the results can be interpreted more objectively. In this study, there are six independent variables, namely efficiency, privacy, fulfillment, responsiveness, contact, and site design. For the mediator variable used is e-satisfaction. Then for the dependent variable used is e-loyalty.

DATA ANALYSIS RESULTS & DISCUSSION

This chapter will explain the research analysis on the relationship between e-servqual, e-satisfaction, and e-loyalty. The first data analysis is a descriptive analysis in the form of a description or description of the data as a whole, then the second is a Structural Equation Modeling (SEM) analysis with AMOS software. The data used in this study came from 200 respondents who were users of e-commerce applications in Indonesia. Based on gender, respondents are divided into two groups, namely male and female. A more detailed explanation of the data based on the gender of the respondents is attached in the following table 1:

Table 1. Gender

		Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	Man	84	42.0	42.0	42.0
	Woman	116	58.0	58.0	100.0
	Total	200	100.0	100.0	

From the table it can be concluded that female respondents are more than male respondents. Female respondents numbered 116, while male respondents numbered 84. If seen in percentage form, 58% of female respondents and 42% of male respondents. This study also has characteristics of respondents based on age with the classification of respondents aged 17-25 years, 26-35 years, 36-45 years, and >45 years. The results of the respondent age grouping will be presented in table 2 as follows:

Table 2. Respondents' Age

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid >45	4	2.0	2.0	2.0
17 – 25	72	36.0	36.0	38.0
26 – 35	109	54.5	54.5	92.5
36 – 45	15	7.5	7.5	100.0
Total	200	100.0	100.0	

Based on the data from table 2, it can be concluded that the respondents in this study were mostly aged 26-35 years with a total of 109 respondents, while respondents aged 17-25 years were 72 respondents, respondents aged 36-45 were 15 respondents, and respondents aged >45 were only 4 respondents.

The next analysis of respondent characteristics is based on the level of education of the respondents. The level of education of the respondents is grouped into 4 groups, namely Elementary/Junior High School, High School, Diploma/Bachelor, and Masters. The results of the analysis will be attached in table 3 below:

Table 3. Last Education

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid Diploma/Bachelor	123	61.5	61.5	61.5
Master	45	22.5	22.5	84.0
Elementary-Middle School	2	1.0	1.0	85.0
High School/Equivalent	30	15.0	15.0	100.0
Total	200	100.0	100.0	

From table 3, it can be concluded that the largest number of respondents were those with diploma/bachelor's education level of 123 respondents, master's education level of 45 respondents, high school/equivalent of 30 respondents, and the lowest number of respondents was elementary-junior high school education level of 2 respondents. The next respondent analysis is the number of e-commerce accounts owned by respondents. This characteristic is divided into four parts, namely 1, 2, 3, and >3. The results of the analysis are as follows:

Table 4. Number of E-Commerce Accounts Owned by Respondents

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid >3	40	20.0	20.0	20.0
1	81	40.5	40.5	60.5
2	53	26.5	26.5	87.0
3	26	13.0	13.0	100.0
Total	200	100.0	100.0	

Based on table 4, it can be concluded that there are 81 respondents who have one e-commerce account, 53 respondents who have two e-commerce accounts, 26 respondents with three e-commerce accounts, and 40 respondents who have more than three e-commerce

accounts. The next respondent analysis is the e-commerce most frequently used by respondents. The results of the analysis are as follows:

Table 5. E-Commerce Most Frequently Used by Respondents

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid Unity	7	3.5	3.5	3.5
Open	5	2.5	2.5	6.0
Lazada	18	9.0	9.0	15.0
olx	9	4.5	4.5	19.5
Shopee	110	55.0	55.0	74.5
Sociolla	3	1.5	1.5	76.0
Tokopedia	48	24.0	24.0	100.0
Total	200	100.0	100.0	

Based on table 5, it can be concluded that respondents who chose Shopee as the e-commerce they often use were 110 respondents, then respondents who chose Tokopedia as the e-commerce they often use were 48 respondents, then respondents who chose Lazada as the e-commerce they often use were 18 respondents, then respondents who chose OLX as the e-commerce they often use were 9 respondents, then respondents who chose Bhinneka as the e-commerce they often use were 7 respondents, then respondents who chose Bukalapak as the e-commerce they often use were 5 respondents, and finally respondents who chose Sociolla as the e-commerce they often use were 3 respondents. The last respondent characteristic analysis is “increased online shopping activity during the pandemic”. This section is divided into two, namely “Yes” and “No”. The results of the analysis are as follows:

Table 6. Increased Online Shopping Activity During the Pandemic

	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid No	104	52.0	52.0	52.0
Yes	96	48.0	48.0	100.0
Total	200	100.0	100.0	

Based on table 6, it can be concluded that as many as 104 respondents stated that they did not experience an increase in online shopping during the pandemic, while 96 respondents stated that they experienced an increase in online shopping activities.

Analysis with Structural Equation Model (SEM)

The analysis used to prove the hypothesis in using the Structural Equation Model (SEM) method using the assistance of AMOS 23 Software. The development of the model in this study is based on the concept of data analysis. The model consists of exogenous variables, namely e-servqual. The endogenous variables in this study are e-satisfaction and e-loyalty.

Normality Test

The assessment of the assumption of data normality must be met, so that the data can be further analyzed for SEM modeling techniques. This normality test can be seen in the Critical Ratio (CR) values of skewness and kurtosis. If the CR value is between the range of -2.58 to 2.58 (± 2.58) at a significance level of 1% (0.01), it can be concluded that the data is normally

distributed, especially in univariate. The results of the data normality test in this study are as seen in table 7:

Table 7. Normality Test

Variable	min	max	skew	cr	kurtosis	cr
Ef	2.000	5.000	-.041	-.237	-.695	-2.005
PE	1.750	5.000	-.152	-.880	-.899	-2,578
Private	2.000	5.000	-.004	-.021	-.364	-1,050
Re	2.000	5.000	.330	1,904	-.608	-1,755
Decit	2.000	5.000	.094	.542	-.649	-1.875
Ko	2.000	5.000	.087	.502	-.554	-1,598
Eloy3	2.000	5.000	-.191	-1.105	-.403	-1.164
Eloy2	2.000	5.000	-.277	-1.601	-.268	-.774
Eloy1	1.000	5.000	-.388	-2.242	-.405	-1.170
Esat7	2.000	5.000	.218	1.257	-.425	-1.226
Esat6	2.000	5.000	-.172	-.995	-.418	-1.206
Esat4	2.000	5.000	-.091	-.526	-.306	-.883
Esat3	2.000	5.000	.056	.324	-.317	-.916
Esat2	2.000	5.000	-.170	-.979	-.279	-.806
Esat1	2.000	5.000	.122	.707	-.329	-.951
Multivariate					48.081	15.055

Reliability Test

The reliability coefficient value ranges from 0-1 so that the higher the coefficient (approaching the number 1), the more reliable the measuring instrument. Good construct reliability if the construct reliability value is >0.7 and the variance extracted value is >0.5. From the calculation results, the results are obtained as in table 8:

Table 8. Reliability Test

Variables and Indicators	Estimate	Error			CR	AVE	Decision
E-SERVQUAL			17.500	3.879	0.987	0.791	Reliable
Ef1	0.852	0.189					Valid
Ef2	0.818	0.182					Valid
Ef3	0.832	0.189					Valid
Pe1	0.829	0.215					Valid
Pe2	0.895	0.149					Valid
Pe3	0.845	0.191					Valid
Pe4	0.905	0.144					Valid
Re1	0.789	0.228					Valid
Re2	0.810	0.189					Valid
Re3	0.802	0.247					Valid
Re4	0.832	0.159					Valid
Desit3	0.878	0.138					Valid
Decit2	0.894	0.107					Valid
Decit1	0.757	0.269					Valid

Variables and Indicators	Estimate	Error					CR	AVE	Decision
Ko1	0.779	0.241							Valid
Ko2	0.833	0.168							Valid
Ko3	0.798	0.229							Valid
Priv3	0.813	0.215							Valid
Priv2	0.939	0.062							Valid
Priv1	0.880	0.132							Valid
Desit4	0.720	0.236							Valid
E-Satisfaction			5.699	1.477	0.957	0.764		Reliable	
Esat1	0.869	0.120							Valid
Esat2	0.855	0.149							Valid
Esat3	0.874	0.109							Valid
Esat4	0.873	0.133							Valid
Esat5	0.479	0.702							Valid
Esat6	0.796	0.224							Valid
Esat7	0.953	0.040							Valid
E-Loyalty			2.519	0.589	0.915	0.783		Reliable	
Eloy1	0.826	0.248							Valid
Eloy2	0.892	0.123							Valid
Eloy3	0.801	0.218							Valid

Model Modification and GOF Testing of The Complete Model

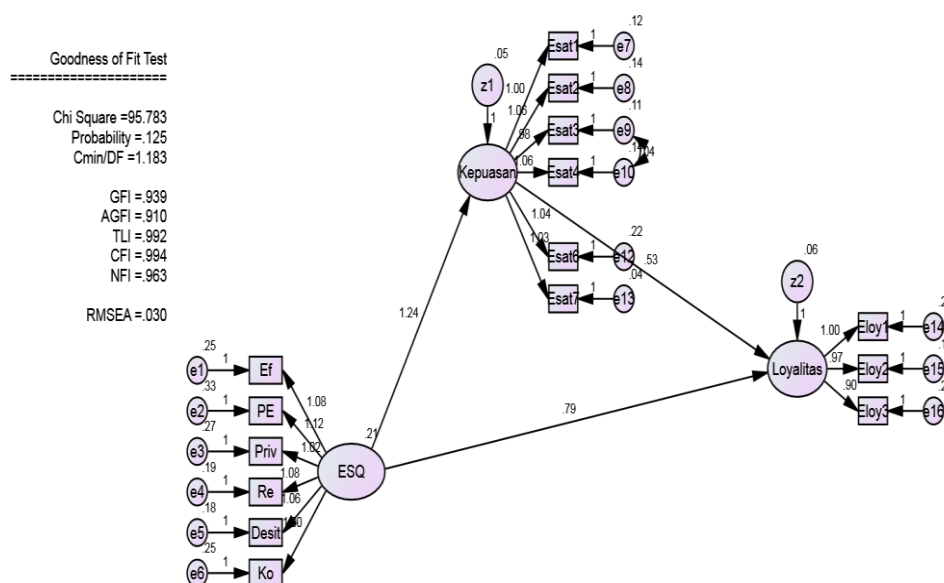


Figure 2. Model Modification and GOF Testing of The Complete Model

After performing the final results of the model modification, a goodness of fit test was conducted. The modified diagrams are the e-servqual, e-satisfaction, and e-loyalty path diagrams. Meanwhile, the six-dimensional e-servqual path diagram with e-satisfaction was not modified because it was considered good (met the loading factor requirements). The results of the Goodness of Fit test have shown that all criteria have been met and the model can be said to be Fit.

The next analysis is SEM analysis, the overall model to test the hypothesis developed in this study. The results of the regression weight test in this study can be seen in table 9:

Table 9. SEM Analysis

Relationship Between Variables			Estimate	SE	CR	P-Value	Information
E-Satisfaction	<---	Efficiency	0.132	0.056	2,344	0.019	Accepted
E-Satisfaction	<---	Fulfillment	0.154	0.053	2,907	0.004	Accepted
E-Satisfaction	<---	Privacy	0.164	0.053	3.120	0.002	Accepted
E-Satisfaction	<---	Response	0.202	0.090	2.238	0.025	Accepted
E-Satisfaction	<---	Website_Design	0.137	0.061	2.243	0.025	Accepted
E-Satisfaction	<---	Contact	0.220	0.087	2,540	0.011	Accepted
E-Satisfaction	<---	ESQ	1.237	0.121	10.225	0.000	Accepted
E-Loyalty	<---	E-Satisfaction	0.530	0.228	2.323	0.020	Accepted
E-Loyalty	<---	ESQ	0.791	0.316	2,501	0.012	Accepted

This analysis draws a conclusion regarding the hypothesis accepted or rejected, namely by paying attention to the Critical Ratio (CR) value and the probability value (P) from the results of the processed data analysis. If the test results show a CR value above 1.96 and a probability value (P) below 0.05/5%, then the hypothesis proposed in the study is declared accepted. The testing of research hypotheses will be discussed and carried out in stages based on the hypotheses that have been proposed.

Mediation Test

The last test is the mediation test. The mediation test can be seen from the significant indirect influence between variables. The results of the indirect influence analysis can be seen in Table 10.

Table 10. Mediation Test

Relationship Between Variables	Sobel Test (t)	P-Value	Information
<i>E-Servqual</i> → <i>E-Satisfaction</i> → <i>E-Loyalty</i>	2.2667	0.0234	Mediating Significant

Based on the mediation test, it is known that the value of the relationship between E-Servqual and E-Consumer Loyalty mediated by E-Consumer Satisfaction has a significance value of 0.0234, which means it is still below 0.05, so this value shows that E-Consumer Satisfaction mediates positively and significantly the relationship between E-Servqual and E-Consumer Loyalty.

DISCUSSION

The results of the study indicate that there is a significant and positive influence between efficiency and e-satisfaction. This result is in line with previous research conducted by Al-dweeri *et al.* (2017) in their research found that efficiency has a positive effect on customer satisfaction in online shopping. Ting *et al.* (2016) in their research proved that the efficiency variable shows a positive influence on e-customer satisfaction. Águila-Obra, Antonio and Al-dweeri (2013) studied with the goal of examining the relationship between e-servqual and e-customer satisfaction, the study showed that the efficiency variable positively influences e-customer satisfaction. These studies prove that efficiency can produce feelings of satisfaction in consumers. The relationship between the fulfillment variable and E-Satisfaction shows that

there is a significant positive influence. This result is also in line with previous research conducted by Ting *et al.* (2016) studied the relationship between e-servqual and customer satisfaction, the study showed that the fulfillment variable affects customer satisfaction. Águila-Obra, Antonio and Al-dweeri (2013) in their research proved that the fulfillment dimension in e-servqual has a positive effect on e-satisfaction. Another study conducted by Rita, Oliveira and Farisa (2019) showed that the fulfillment variable has a positive effect on customer satisfaction on online shopping sites. These studies prove that the fulfillment variable has a positive effect on e-satisfaction.

Furthermore, the results of the study showed that the privacy variable had a significant positive effect on e-satisfaction. This result is also in line with previous research conducted by Rita, Oliveira and Farisa (2019) showed that the privacy variable significantly affected e-satisfaction. Ting *et al.* (2016) who studied the relationship between privacy in the e-servqual dimension and e-satisfaction argued that privacy has a positive relationship with e-satisfaction. Behjati, Nahich and Othaman (2012) in their study argued that privacy in the e-servqual dimension can affect consumer satisfaction. Meanwhile, research conducted by Al-dweeri *et al.* (2017) showed that the privacy variable had a positive effect on consumer e-satisfaction in online stores. These studies prove that the privacy variable has a positive effect on e-satisfaction. This study also proves that responsiveness has a significant positive effect on e-satisfaction. This result is also in line with previous research conducted by Behjati, Nahich and Othaman (2012) in their study proving that responsiveness has a positive effect on customer satisfaction. Ting *et al.* (2016) in their research also proved that the responsiveness variable shows a positive influence on e-customer satisfaction. Lee and Lin (2005) studied online shopping in Taiwan, their study was to examine the relationship between e-servqual and consumer perception, the study showed that the responsiveness variable positively influences customer satisfaction. These studies prove that the responsiveness variable has a positive effect on e-satisfaction.

The website design variable also has a significant positive effect on e-satisfaction. This result is also in line with previous research conducted by Ting *et al.* (2016) in their research found that website design has a positive effect on customer satisfaction. Rita, Oliveira and Farisa (2019) in their research also proved that the website design dimension shows a positive effect on customer satisfaction. Lee and Lin (2005) studied with the goal of examining the relationship between e-servqual and customer perception, the study showed that the website design dimension has a positive effect on customer satisfaction. These studies prove that website design can produce feelings of satisfaction in consumers. The results of this study indicate that the contact variable has a significant positive effect on e-satisfaction. This result is also in line with previous research conducted by Rodríguez *et al.* (2020) studied e-customer satisfaction using the e-servqual approach in fashion e-retail in Spain, their research proved that the contact dimension in e-servqual has a positive effect on e-satisfaction. Ting *et al.* (2016) in their research also proved that the contact variable shows a positive influence on e-customer satisfaction. Parasuraman, Zeithaml and Malhotra (2005) in their research also proved that contact in the e-servqual dimension has a positive effect on customer satisfaction. These studies prove that contact can produce feelings of satisfaction in consumers.

The relationship between contact variables has a significant positive effect on e-satisfaction. These results are also in line with previous research conducted by Rodríguez *et al.* (2020) who studied e-customer satisfaction using the e-servqual approach in fashion e-retail in Spain, their research proved that the contact dimension in e-servqual has a positive effect on e-satisfaction. Ting *et al.* (2016) in their research also proved that the contact variable shows a positive effect on e-customer satisfaction. Parasuraman, Zeithaml and Malhotra (2005) in their research also proved that contact in the e-servqual dimension has a positive effect on customer

satisfaction. These studies prove that contact can produce feelings of satisfaction in consumers. This study shows that the e-satisfaction variable has a significant positive effect on e-loyalty. These results are also in line with previous research conducted by Behjati, Nahich and Othaman (2012) in their research proved that the variables between e-satisfaction and e-loyalty have a significant positive relationship. Águila-Obra, Antonio and Al-dweeri (2013) in their research proved that e-satisfaction has a positive effect on e-loyalty. Rodríguez *et al.* (2020) also proved in their research that e-satisfaction has a significant relationship with e-loyalty.

Next, this study shows that the E-Servqual variable has a significant positive effect on e-loyalty. This result is also in line with previous research conducted by Behjati, Nahich and Othaman (2012) in their research proving that the variables between e-servqual and e-loyalty have a significant positive relationship. Águila-Obra, Antonio and Al-dweeri (2013) in their research proved that e-servqual has a positive effect on e-loyalty. Rodríguez *et al.* (2020) also proved in their research that e-servqual has a significant relationship with e-loyalty. Based on the results of the analysis, it proves that there is a positive and significant influence between E-Servqual and E-Loyalty mediated by E-Satisfaction. This result is also in line with previous research conducted by According to Al-dweeri *et al.* (2017) in their research, it states that the e-satisfaction variable in its role as a mediator between e-servqual and e-loyalty has a significant positive relationship.

CONCLUSION

Based on the results of the research that has been conducted, it was found that all variables studied have a positive and significant influence on electronic satisfaction (e-satisfaction) on e-commerce platforms in Indonesia. Specifically, efficiency, fulfillment, privacy, responsiveness, site design, and contact have been shown to contribute significantly to increasing user e-satisfaction.

Furthermore, e-satisfaction itself has a positive and significant influence on electronic loyalty (e-loyalty), as well as electronic service quality (e-servqual) which also significantly impacts e-loyalty. In addition, e-satisfaction has been shown to be able to mediate the relationship between e-servqual and e-loyalty, which shows that user satisfaction is an important factor in building consumer loyalty in the realm of e-commerce in Indonesia. In carrying out its business activities, all e-commerce in Indonesia are advised to be able to fulfill the rights of consumers or users in order to maintain competitive advantage.

This study shows that out of 200 respondents who are e-commerce application users, they want an easy and practical electronic shopping system. Furthermore, e-commerce is also advised to fulfill all the needs desired by its users, both in terms of the ability to respond to user complaints, maintain account owner data, have an attractive interface design that is easy for everyone to understand, and provide consumer contact services available 24 hours a day. If e-commerce in Indonesia is able to implement all the dimensions in this study, it is hoped that consumers will have a high level of satisfaction and loyalty.

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