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The Impact of E-Service Quality on E-Customer Loyalty through E-Customer Satisfaction as Intervening Variable (Case of LinkAja App in Indonesia)

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Abstract. In the business service, the main focus lies on the quality of service. Good quality of service can give rise to the highest satisfaction from consumers to create an emotional bond of consumer loyalty to a product. LinkAja (a fintech app in Indonesia) has an interesting phenomenon to be observed, seeing that there are many complaints about failed application login access, features which are difficult to be used, difficulty in upgrading full-service, difficulty in withdrawal features. However, customer servicewho should be able to help user's problems is felt to be less helpful; thus, users feel abandoned. This study aims to analyze the effect of the variable e-service quality, e-customer satisfaction, and e-customer loyalty on LinkAja application users in Indonesia. The research uses descriptive with a quantitative approach using purposive sampling, given to 108 respondents. This study uses structural equation modeling (SEM). The data was collected by distributing online questionnaires and then processed using the SmartPLS 3.0 software. The results obtained in this study are: e-service quality has a positive and significant effect on e-customer satisfaction, e- customer satisfaction has a positive and significant effect on e-customer loyalty, and e-service quality has an indirect effect on e-customer loyalty through e-customer satisfaction. For this reason, LinkAja should consider improving the quality of electronic services because it would affect customer satisfaction and loyalty.
Keywords: fintech; promotion; e-commerce; Indonesia

1. Introduction

The advancement of digital technology affects the Indonesian economy. This is because technological advances make it easier for all forms of business activities to finally create a phenomenon of change where sellers and buyers in transactions do not have to be present in one place (cash) but can take advantage of technological sophistication as a means of non-cash payment or so-called digital-based financial services.

According to Article 1 number 7 of Bank Indonesia Regulation Number 18/40 / PBI / 2016 concerning Implementation of Payment Transaction Processing 2 (State Gazette of the Republic of Indonesia of 2016 Number 236, Supplement to State Gazette of the Republic of Indonesia Number 5945), Electronic Wallet is an electronic service that has the benefit of storing data on payment instruments by using cards or electronic money, which can also accommodate funds, to make payments [1].

One of the Indonesian government's efforts to advance the digital economy is through the LinkAja e-wallet, which was issued by the state-owned company PT Telekomunikasi Seluler (Telkomsel) in 2019, previously the digital wallet product was called Tcash. Competition for digital wallets (e-wallets) to dominate the payment market is fierce. Based on data obtained from the iPrice Group in collaboration with App Annie's trusted data analysis, LinkAja or previously named Tcash since the fourth quarter (Q4) of 2017, was ranked third in the first quarter (Q1) of 2018 to the third quarter (Q3) 2018 experienced a ranking increase, namely in the second position, until finally in the fourth quarter (Q4) 2018 it decreased to the fourth position until the second quarter period (Q2) 2020 [2].

In business service, the main focus lies on the quality of service. Good quality service can give rise to the highest satisfaction from consumers to create an emotional bond of consumer loyalty to a

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
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product. Based on the reviews in the Appstore, the quality of service on the LinkAja application still needs improvement, seeing that there are many complaints about failed application login access, features that could not be used, difficulty in upgrading full-service, anddifficulty in Withdrawal features. However, customer service who should be able to help users' difficulties are felt less helpful; thus, users feel abandoned. This indicates that LinkAja still has many tasks to reclaim its position as a leading digital wallet in Indonesia and is no less competitive with wallets. other digital.

In e-wallets, service quality is called e-service quality. Parasuraman and Malhotra in Perwira define the quality of electronic services (e-service quality) as an electronic-based service that makes it easier to make shopping, purchase, and delivery of products and services effectively and efficiently [3]. Service quality and customer satisfaction are some of the company's superior competitive strategies so that it can continue to compete and sustain itself in business. Besides, Ahmad in Junardi (2019) explained that e-customer satisfaction is when online products and services exceed consumer expectations, the level of buyer satisfaction after comparing the purchase experience and the perceived expectations with the post-purchase experience online [4]. If consumers are satisfied, they can return to using the application. According to Anderson and Srinivasan in Ariefandi (2018), e-customer loyalty is a favorable attitude for customers toward the electronic business, which results in repurchasing activities on a product from a certain brand [5].

A study conducted by Amalia (2020) entitled "The Effect of E-Service Quality on E-Customer Loyalty in the KAI Access Application through Customer Satisfaction as an Intervening Variable" states that the variable e-service quality (x) through the e-customer satisfaction variable (z) has a significant effect on the e-customer loyalty variable (y) [6]. This research shows that good service quality will create customer satisfaction, which will create good customer loyalty. This phenomenon is interesting to study because it is a strategy for LinkAja to improve service quality to satisfy consumers. It creates prolonged consumer loyalty.

Based on the background above, the following problems can be proposed:

a. How is E-Service Quality at LinkAja application?
b. How is E-Customer Satisfaction with the LinkAja application?
c. How is E-Customer Loyalty at the LinkAja application?
d. How does E-Service Quality affect E-Customer Satisfaction at LinkAja application?
e. How does E-Customer Satisfaction affect E-Customer Loyalty at LinkAja application?
f. How does E-Service Quality affect E-Customer Loyalty at LinkAja application?
g. How does E-Service Quality affect E-Customer Loyalty through E-Customer Satisfaction at LinkAja application?

With the identification of the problems described above, the objectives of the research are:

a. To find out and analyze the E-Service Quality of the LinkAja application.
b. To find out and analyze E-Customer Satisfaction with the LinkAja application.
c. To find out and analyze E-Customer Loyalty at the LinkAja application.
d. To find out and analyze the effect of E-Service Quality on E-Customer Satisfaction atthe LinkAja application.
e. To find out and analyze the effect of E-Customer Satisfaction on E-Customer Loyalty at the LinkAja application.
f. To find out and analyze the effect of E-Service Quality on E-Customer Loyalty at the LinkAja application.
g. To find out and analyze the effect of E-Service Quality on E-Customer Loyalty through E-Customer Satisfaction at the LinkAja application.

2. Research Method

The authors used causal descriptive research with a quantitative approach in this study. According to Hikmawati, descriptive research is research used to collect information about existing phenomena, namely the situation as it was when the research was carried out without the intention of

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Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

making generalized or generalized conclusions [7]. According to Sugiyono, causal research is a cause-and-effect relationship in which the independent variable affects the dependent variable. Then he also explained that the quantitative approach method is a research method based on the philosophy of positivism, used to research certain populations or samples, data collection using research instruments, and quantitative/statistical data analysis, with the aim of testing predetermined hypotheses [8].

The population in this study is all Indonesians who use the LinkAja application. While the sampling used non-probability sampling technique is a sampling technique that only provides equal opportunities or opportunities for each member of the population to be selected as a sample. Then purposive sampling is a sampling technique with data sources with certain considerations [9]. The number of samples in this study was 108 respondents.

The research framework can be seen in Figure 1.

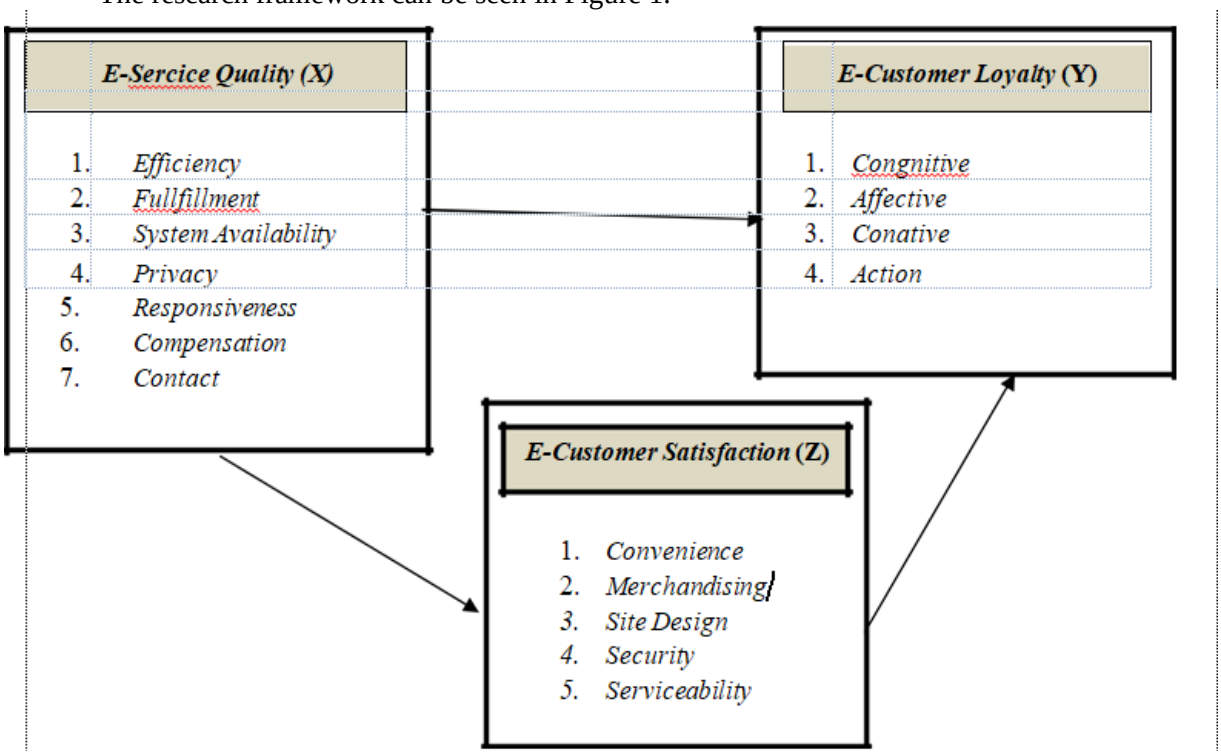

Figure 1. Research Framework

The hypothesis in this study are:

1. There is an impact between E-Service Quality on E-Customer Satisfaction. H0: e-service quality has no impact one-customer satisfaction. H1: e-service quality has an impact on e-customer satisfaction.
2. There is an impact between E-Customer Satisfaction and E-Customer Loyalty. H0: e-customer satisfaction has no impact on e-customer loyalty. H2: e-customer satisfaction has an impact on e-customer loyalty.
3. There is an impact between E-Service Quality on E-Customer Loyalty H0: e-service quality has no impact on e-customer loyalty. H3: e-service quality has an impact on e-customer loyalty.
4. There is an impact between E-Service Quality on E- Customer Loyalty through E-Customer Satisfaction. H0: There is no impact of E-Service Quality on E-Customer Loyalty through E-CustomerSatisfaction. H4: There is an impact of E-Service Quality on

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
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E-Customer Loyalty through E-CustomerSatisfaction.

3. Result and Discussion

In this study, there are three latent variables measured by 32 indicators. Based on the Partial Least Square estimation method, the full model path diagram is obtained as shown in the following

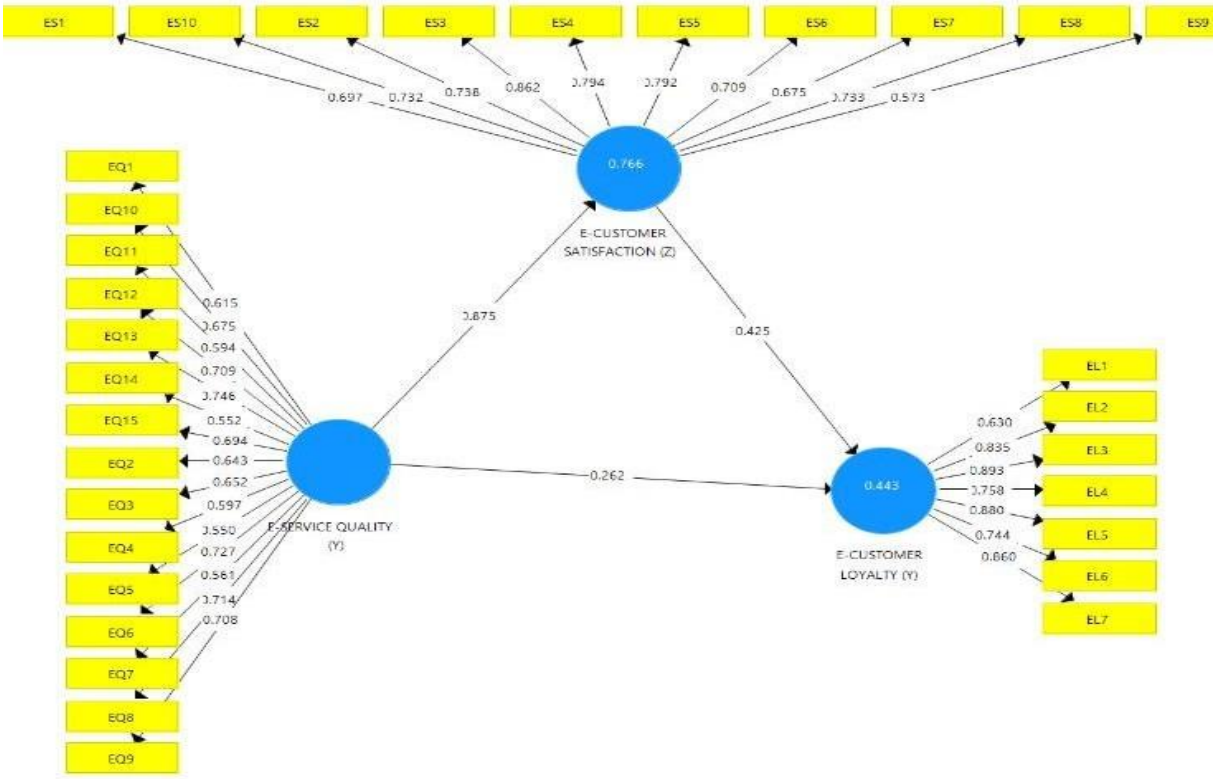

figure:

Figure 2. Outer Model

The outer loading or cross-loading factor value is used to test the convergent validity. Ghozali and Latan in Suwondo state that convergent validity is categorized as good if the outer loading indicator is > 0.7.

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
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Table 1. Valid Data

Variable	Indicator	Loading Factor	P Values	Conclusion
E-Service Quality	EQ1	0.615	0,000	Valid
	EQ2	0.643	0,000	Valid
	EQ3	0.652	0,000	Valid
	EQ4	0.597	0,000	Valid
	EQ5	0.550	0,000	Valid
	EQ6	0.727	0,000	Valid
	EQ7	0.561	0,000	Valid
	EQ8	0.714	0,000	Valid
	EQ9	0.708	0,000	Valid
	EQ10	0.675	0,000	Valid
	EQ11	0.594	0,000	Valid
	EQ12	0.709	0,000	Valid
	EQ13	0.746	0,000	Valid
	EQ14	0.552	0,000	Valid
	EQ15	0.694	0,000	Valid
E-Customer Satisfaction	ES1	0.697	0,000	Valid
	ES2	0.738	0,000	Valid
	ES3	0.862	0,000	Valid
	ES4	0.794	0,000	Valid
	ES5	0.792	0,000	Valid
	ES6	0.709	0,000	Valid
	ES7	0.675	0,000	Valid
	ES8	0.733	0,000	Valid
	ES9	0.573	0,000	Valid
	ES10	0.732	0,000	Valid
E-Customer Loyalty	EL1	0.630	0,000	Valid
	EL2	0.835	0,000	Valid
	EL3	0.893	0,000	Valid
	EL4	0.758	0,000	Valid
	EL5	0880	0,000	Valid
	EL6	0.744	0,000	Valid
	EL7	0860	0,000	Valid

However, the outer loading value between 0.5 - 0.6 is sufficient to meet the convergent validity requirements [10]. Table 1 above shows no indicator whose outer loading is < 0.5. This means the indicators are declared valid for research use and can be used for further analysis. Another method to test the validity is looking at each research variable's AVE value. AVE value > 0.5 indicates that the items in a variable have sufficient convergent validity. The following is the convergent validity test through AVE presented in Table 2 below:

Table 2 Average Variant Extracted (AVE)

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
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Variable	AVE
E-Service Quality	0.517
E-Customer Satisfaction	0.539
E-Customer Loyalty	0.649

(Source: data processed by researchers, 2020)

Table 2 above shows that the AVE value of e-service quality, e-customer satisfaction, and e-customer loyalty is > 0.5. Thus it can be stated that each variable has good convergent validity.

An indicator is declared to meet the discriminant validity of the indicator's cross-loading value on the variable, which is the largest compared to other variables. The following in Table 3 is the cross-loading value of each indicator:

Table 3. Cross Loading Indicator

INDICATOR	E-CUSTOMER LOYALTY (Y)	E-CUSTOMER SATISFACTION (Z)	E-SERVICE QUALITY (x)
EL1	0.630	0.180	0.280
EL2	0.835	0.604	0.606
EL3	0.893	0.531	0.537
EL4	0.758	0.264	0.317
EL5	0880	0.607	0.562
EL6	0.744	0.574	0.490
EL7	0.860	0.633	0.590
EQ1	0.489	0.558	0.615
EQ10	0.442	0.600	0.675
EQ11	0.349	0.555	0.594
EQ12	0.506	0.611	0.709
EQ13	0.498	0.617	0.746
EQ14	0.171	0.538	0.552
EQ15	0.391	0.599	0.694
EQ2	0.459	0.475	0.643
EQ3	0.473	0.594	0.652
EQ4	0.414	0.435	0.550
EQ5	0.333	0.589	0.597
EQ6	0.526	0.639	0.727
EQ7	0.274	0.385	0.561
EQ8	0.396	0.670	0.714
EQ9	0.359	0.620	0.708
ES1	0.470	0.697	0.596
ES10	0.545	0.732	0.686
ES2	0.589	0.738	0.680
ES3	0.481	0.862	0.655
ES4	0.628	0.794	0.741
ES5	0.487	0.792	0.636
ES6	0.385	0.709	0.595
ES7	0.391	0.675	0.647
ES8	0.342	0.733	0.561
ES9	0.382	0.573	0.575

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

Based on Table 3 above, it is known that each indicator has the largest cross-loading value on the variable it forms compared to the cross-loading value on other variables. Based on the results obtained, the indicators used in this study have good discriminant validity.

In Partial Least Square, the reliability test uses composite reliability and Cronbach alpha,where if the composite reliability value is > 0.7 and the Cronbach alpha value on data > 0.6, then the data is said to be reliable [11]. The following are the results of thereliability test presented in the data in Table 4:

Table 4. Reliability Test Results

Variable	Cronbach's Alpha	Critical Value	Composite Reliability	Critical Value
E-Service Quality	0.883	> 0.6	0.906	> 0.7
E-Customer Satisfaction	0.903		0.920	
E-Customer Loyalty	0.883		0.927	

(Source: data processed by researchers, 2020)

From the data in Table 4, it is known that three latent variables (e-service quality, e-customer satisfaction, and e-customer loyalty) have a Composite Reliability (CR) value > 0.7, and Cronbach's Alpha (CA) is more than > 0.6; it can be said that the data it is reliable and all variables have a high level of reliability.

The measurement of the structural model (inner model) aims to address the influence of other latent variables. In PLS, it can be measured using the R-Square (R^2) and the path coefficient. The structural model test was carried out by paying attention to the R^2 value in the endogenous (dependent) latent construct and the t-value for each exogenous (independent) latent variable against the endogenous latent construct from the bootstrapping results.

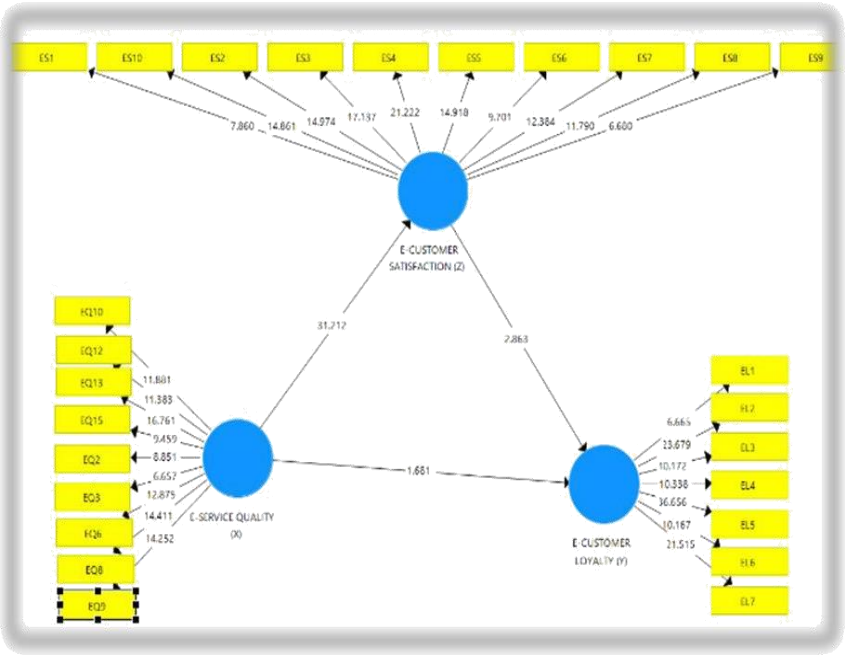

Figure 3. Inner Model

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

a. Path Coefficient

Based on the inner model image shown in Figure 2 above, it can be explainedthat the largest path coefficient value is shown by the effect of e-service quality on e-customer satisfaction of 31.212. Then the second biggest influence is the effect of e-customer satisfaction on e- customer loyalty of 2.863. The effect of e-customer quality on e- customer loyalty of 1,681 shows the smallest effect.

Based on the description of these results, all variables in the inner model have a path coefficient with a positive number. The greater the path coefficient value of one independent variable on the dependent variable, the stronger the influence between the independent variables on the dependent variable will be.

According to Hamdalah, the R-Square value is the coefficient of determination in endogenous constructs [12]. Chin in Ghozali stated that the R^2 result of 0.67 and above for endogenous latent variables in the structural model indicates that the effect of exogenous variables (which influence) on endogenous variables (which are influenced) is in a good category. If the result is 0.33 - 0.67, it is in the medium category, and if the result is 0.19 - 0.33, it is in the weak category [13]. Based on the R-Square test, the following results were obtained:

Table 5. R-Square Value

Variable	R-Square
E-Customer Satisfaction	0.712
E-Customer Loyalty	0.446

(Source: data processed by researchers, 2020)

Based on Table 5 above, the R-Square value on the e-customer satisfaction variable is 0.712 in the good category, and the e-customer loyalty variable is 0.446 in the moderate category. The R-Square value for the e-customer satisfaction variable is 71.2%, which means that the e-service quality variable can explain the e-customer satisfaction variable, and the remaining 28.2% is influenced by other variables not explained in this study. The R-Square value for the e-customer loyalty variable is 44.6%, which means that the e-service quality variable can explain the e-customer loyalty variable, and the rest is influenced by other variables not explainedin this study.

The following is the calculation of the inner model test (predictive relevance) using the formula:

$$^2 = 1 - (1-12)\,(1-22)\ldots\,(1-^2)$$

$$^2 = 1 - (1-0.7122)\,(1-0.4462)$$

$$^2 = 0.406$$

From the results of these calculations, the predictive relevance value is 0.406, which means it is greater than 0 (zero), which explains that the model has a relevant predictive value.

b. Hypothesis testing

According to Sugiyono, the research hypothesis is a temporary answer to the formulation of research problems that must be verified through the data that has been collected [9]. To test the hypothesis, one has to compare the t-statistic value (to) with the t-table value (t), where the t-

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

tablevalue in this study is 1.96 with the terms of acceptance of the hypothesis as follows:

a. If the value to > (t), then H0 is rejected and H1 is accepted
b. If the value to < (t), then H0 is accepted and H1 is rejected

Table 6. Hypothesis Test Estimation Result of Influence Between Research Variables

Variable	Original Sample (o)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (| O / STDEV |)	P Values	Information
E-Service Quality (X) -> E-Customer Satisfaction (Z)	0844	0848	0.027	31,212	0.000	H1 Accepted
E-Customer Satisfaction (Z) -> E-Customer Loyalty (Y)	0.426	0.425	0.149	2,863	0.004	H2 Accepted
E-Service Quality (X) -> E-Customer Loyalty (Y)	0.268	0.275	0.159	1,681	0.093	H3 Denied
E-Service Quality (X) -> E-Customer Satisfaction (Z) -> E-Customer Loyalty (Y)	0.360	0.36	0.126	2.86	0.004	H4 Accepted

(source: data processed by researchers,2020)

Based on Table 6 above, an explanation of the hypothesis can be obtained as follows:

1. The Effect of E-Service Quality on E-Customer Satisfaction

In Table 6, the research significance value is T Statistic 31.212 > Ttabel 1.96, and the value of path coefficients is 0.844, indicating the direction of the relationship between e-service quality and e-customer satisfaction is positive and significant. Thus, this study states that e-service quality affects e-customer satisfaction is received. The positive relationship shows that the more e-service quality increases, the more e-customer satisfaction will be followed. For this reason, it is important to pay attention to the extent of e-service quality that the LinkAja application has. Previous research conducted by Hamdallah supports these results that e-service quality positively and significantly affects e-customer satisfaction [12].

2. The Effect of E-Customer Satisfaction on E-Customer Loyalty

In Table 6, the research significance value is T Statistic 2.863 > Ttabel 1.96, and the value of path coefficients is 0.426, which shows the direction of the relationship between e-customer satisfaction with e-customer loyalty is positive and significant. Thus, this study states that e- customer satisfaction affects e-customer loyalty is received. The positive relationship shows that the more e-customer satisfaction increases, the more e-customer loyalty will be followed. For this reason, it is important to pay attention to the extent of e-customer satisfaction that the LinkAja application has.

International Journal of Halal System and Sustainability (InJHSS)

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

The previous research conducted by Hamdalah supports these results that e-customer satisfaction positively and significantly affects e-customer loyalty [12].

3. Effect of E-Service Quality on E-Customer Loyalty

In Table 6, the research significance value is T statistic 1.681 < Ttabel 1.96, and the value of the path coefficients is 0.268, meaning the significance level's value still needs to meet the requirements. This shows that e-service quality has an effect but not significantly on e-customer loyalty in the LinkAja application. E-service quality is stated to lack a significant effect on e-customer loyalty. This is to the research Ipsos (2020) conducted, which states that most Indonesians use more than one e-wallet based on different motivations.

Table 7. Hypothesis Test Estimation Result of Influence Between Intervening Variables

Variable	Original Sample (o)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (| O / STDEV |)	P Values	Information
E-Service Quality (X) -> E-Customer Satisfaction (Z) -> E-Customer Loyalty (Y)	0.360	0.36	0.126	2.86	0.004	H4 Accepted

(Source: data processed by researchers, 2020)

4. Effect of E-Service Quality on E-Customer Loyalty through E-Customer Satisfaction

Table 7 shows the research model of the indirect effect of the e-service quality variable on the e- customer loyalty variable through e-customer satisfaction. The significance value of the research is the T statistic 2.860 > Ttabel 1.96, and the value of the path coefficients is 0.360, which shows the direction of the relationship between e-service quality and e-customer loyalty through e-customer satisfaction is positive and significant. Thus, this study states that e-service quality affects e- customer loyalty through e-customer satisfaction is received. The positive relationship shows that the e-service quality increase will be followed by the increase in e-customer loyalty at the LinkAja application. However, it must create e-customer satisfaction first. These results support the previous research by Hamdalah (2020) that e-service quality indirectly has a positive and significant effect on e-customer loyalty through e-customer satisfaction.

4. Conclusions

Based on the research "The Impact of E-service Quality on E-Customer Loyalty in the LinkAja Application through E-Customer Satisfaction as an Intervening Variable," which has been carried out using SEM analysis, the following conclusions are obtained:

1. E-service quality positively and significantly affects e-customer satisfaction with the LinkAja application. This means more e-service quality increases will be followed by increased e-customer satisfaction for LinkAja application customers. So it is very important to pay attention to the extent of e-service quality that the LinkAja application has.
2. E-customer satisfaction positively and significantly affects e-customer loyalty in the LinkAja application. This means that the more e-customer satisfaction with the LinkAja application increases, the more e-customer loyalty for the LinkAja application will follow. So it is very important to pay attention to the extent of e-customer satisfaction that the LinkAja application

Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
DOI: 10.33096/injhss.v2i1.214

has.

3. E-service quality has an effect but is not significant to e-customer loyalty on the LinkAja application. This means that e-service quality can minorly affect e-customer loyalty on the LinkAJa application because the seven dimensions of E-Service Quality contained in the LinkAja application cannot achieve e-customer loyalty for LinkAja application customers.
4. E-service quality positively and significantly affects e-customer loyalty through e- customer satisfaction with the LinkAja application. This means the better e-service quality of the LinkAja application will increase e-customer loyalty. Still, in increasing the e- customer loyalty of the LinkAja application customers, the company must improve e- customer satisfaction first.

a. Practical suggestions

Based on the results of the analysis and data processing in the study, some suggestions can be submitted for the companies:

1. the three variables were divided into good and good enough categories in this study. However, there are still items that need to be categorized as better. Therefore, the authors suggest that companies should balance and simultaneously continue to increase the variable e-service quality and e-customer satisfaction to get better e-customer loyalty on the LinkAja application, given the intense business competition in the fintech sector, especially digital wallets.
2. Based on the study results, the item with the lowest value in the e-service quality variable lies in the responsiveness dimension, which is about "the response given by LinkAjais very fast if the user has problems using the application," which only gets 55.9%. Therefore the authors provide suggestions for companies to improve e-service quality, especially regarding LinkAja's response to problems faced by consumers when using the application so that consumers feel supported. For example, always responding to consumer complaints quickly and responsively to the chat feature with the expert or customer complaints expressedthrough LinkAja social media.
3. Based on the research results, the item with the lowest score on the e-customer satisfaction variable lies in the serviceability dimension, "I am satisfied with customer handling service," and gets 60.4%. Therefore the authors provide suggestions for companies to improve and improve customer problem-handling services on the LinkAja application to achieve customer satisfaction in using the LinkAja application. For example, always be fast and responsive in handling customer complaints and immediately fixing system errors that customers complain about.
4. Based on the research results, the item with the lowest score on the e-customer satisfaction variable lies in the cognitive dimension: “I do not use any other e-wallet besides LinkAja," and only got 39.8%. This means that there are still many LinkAja customers who also use other digital wallet applications. Given the increasingly competitive digital wallet business competition, therefore, for the sake of creating better customer loyalty, the authors suggest to companies that the LinkAja application improves the quality of electronic services to stimulate better customer satisfaction and create high customer loyalty.

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Vol. 2 No. 1 January 2022, Page 35 - 46 | EISSN: 2808-9154
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