

E-Commerce Service Quality, E-Customer Satisfaction and Loyalty: Modification of E-Servqual Model

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Abstract. This study aims to examine the effect of E-Commerce Service Quality on E- Customer Satisfaction and Loyalty. E-Commerce Service Quality is measured using the Modified E-Servqual Model which consists of Site Organization, Responsiveness, Reliability, User Friendliness, Personal Need, and Efficiency. The research method used is quantitative. The data collection technique used is a survey technique using a questionnaire. The sampling technique uses the purposive sampling technique and uses the slovin formula in determining the number of samples. The sample in this study was Batam State Polytechnic Business Management Students with 100 respondents. The technique of data analysis uses PLS-SEM analysis. The results show that E-Customer Satisfaction has an effect on E-Customer Loyalty and the E-Commerce Service Quality variable consisting of responsiveness, reliability, user-friendly, personal need, and efficiency has an effect on E-Customer Satisfaction while the variable site organization does not affect E-Customer satisfaction.

Keywords: modified E-Service Quality model, E-Customer Satisfaction, E-Customer Loyalty, Site Organization, Responsiveness, Reliability, User Friendliness, Personal Need, Efficiency.

1 Introduction

During the current pandemic, efforts made by business actors and consumers are to switch to e-commerce and change shopping patterns to online [1]. According to an annual report from startup solutions e-commerce Sirclo, there was 12 million new e-commerce during the Covid-

19 pandemic.¹ In Indonesia, the use of e-commerce reaches 88.1%, and this is the highest percentage in the world.² According to the annual report, the impact of covid-19 has made E-Commerce not only an option but a necessity, so there is a need to improve service quality in order to obtain customer satisfaction and loyalty. Customer satisfaction will rise as service quality improves, leading to increased profits and customer loyalty [2]. This study is a replication of a previous study conducted by Raza [3] on the impact of E-Service Quality from internet banking on E-Customer Satisfaction and E-Customer Loyalty in Pakistan using a modified E-Service Quality model on 500 banking customers with experience in online and e-services among students from Karachi higher education institutions. In data processing, structural equation modeling techniques are used. The findings of this study suggest that the modified E-Service Quality model has a positive impact on E-Customer Satisfaction and E-Loyalty.

The difference between this research and previous research lies in the sample, object, and location of the research. The sample in this study is Gen Z. The average transaction value of Gen Z's monthly income aged 18-25 years is 5.4%, with a total income of 4,558,406 as the average total income, and it's higher than the people over that age.³ The population for this study included Batam State Polytechnic students majoring in Business Management, with a total sample of 100 respondents who had completed at least one transaction on shopee Previous research on online shopping among students found that Business Management students are the most likely to complete questionnaires. According to Mustomi's research out of 150 respondents from various study programs, 47 business administration students and 39 accounting information system students filled out questionnaires, a similar study by Iswiyanti [4] showed the results of management student respondents by 54% and accounting students by 5%. The object of this study is E-Commerce Shopee, because Shopee is the most popular E-Commerce in Indonesia in 2020, with up to 129 million visitors, the most application downloads, and the most social media followers in the second quarter of 2021.⁴ According to the results of an Ipsos survey, Shopee is the most popular e-commerce platform in Indonesia, with 1,000 respondents aged 18-35 years old. The survey used four indicators, namely brand use most often (BUMO), top of mind, consumer penetration, and transaction value, and the results show that Shopee dominates all indicators, beating Tokopedia and Lazada.⁵ This study aims to determine the E-

¹ Sirclo and Ravenry, (2020) "Navigating Indonesia's E-Commerce: COVID-19 Impact and The Rise of Social Commerce" <https://files.sirclocdn.xyz/sirclo/files/Navigating-Indonesia-sE-Commerce-COVID-19-Impact-and-The-Rise-of-Social-Commerce-SIRCLOXRavenry.pdf> (accessed September 22, 2021)

² Andrea Lidwina, (April 21, 2021) Databox "Highest Indonesian E-Commerce Users in the World" <https://databoks.katadata.co.id/datapublish/2021/06/04/gunakan-e-commerce-indonesia-tertinggi-di-dunia#> (accessed June 4, 2021)

³ Desy Setyowati, Katadata.co.id "KIC-Kredivo Research: Consumers 36-45 Years Old Start to Love Online Shopping" <https://katadata.co.id/desysetyowati/digital/60c05f6215bf6/riset-kic-kredivo-konsumen-36-45-tahun-mulai-gemar-jual-online> (accessed 09 March 2022)

⁴ "The Map of E-Commerce in Indonesia" <https://iprice.co.id/insights/mapofecommerce/en/>

⁵ <https://katadata.co.id/happyfajrian/digital/61fb9d7808a8d/survei-ipsos-shopee-rajai-e-commerce-ri-ungguli-tokopedia-dan-lazada> (accessed June 6, 2022)

Service Quality factors that affect E-Customer Satisfaction and E-Customer Loyalty on the E-Commerce Shopee platform using a modified E-Service Quality model approach.

2 Theory Study, Literature Review and Hypothesis Development

2.1 Disconfirmed Expectancy Theory

This study uses the theory of Disconfirmed Expectancy [5]. The findings show that a large gap between high consumer expectations and actual product performance may result in less favorable product evaluations than a slightly lower level of discrepancy. Theory Disconfirmed Expectancy is classified into two types: negative disconfirmation and positive disconfirmation. Positive disconfirmation occurs when the expected result is better than the actual result, whereas negative disconfirmation occurs when the expected result is worse [6]. According to Churchill [7], satisfaction is related to the size and direction of the disconfirmation experience, whereas disconfirmation is related to people's initial expectations.

2.2 Literatur Review

Raza [3] aims to examine the impact of E-Service Quality from internet banking on E-Customer Satisfaction and E-Customer Loyalty in Pakistan. The results of this study indicate a positive influence between modified E-Service Quality on E-Customer Satisfaction and E-Loyalty. Wibowo [8] study looked at the impact of website design on three dependent variables: e-trust, e-satisfaction, and loyalty. The results of this study indicate that e-satisfaction singly affects e-loyalty. Mahadin [9] conducted a study that aims to examine the effect of website attributes on e-satisfaction and to examine the effect of e-satisfaction on electronic loyalty attitudes and the effect of e-attitudinal loyalty on e-behavioral. The results of the analysis show that user-friendliness, information quality, entertainment, security, and privacy have a positive influence on e-satisfaction. Tourist e-satisfaction has a strong positive influence on e-attitudinal loyalty, which in turn affects e-behavioral loyalty positively. Nugraha's research [10] analyzes how the IBSQ variable affects customer satisfaction and trust in state-owned banks in Jember Regency. The results of the analysis show that the IBSQ variable affects satisfaction and satisfaction affects trust. Junaidi [11] conducted a study that aims to analyze and evaluate the effect of efficiency, reliability, and responsiveness on E-Satisfaction on users of the redkendi application. The results of this study indicate that all variables partially and simultaneously have a significant positive effect on E-Satisfaction. Research by Wirapraja [12] examines consumer loyalty or willingness to continue using the go-send application by considering measurement variables such as satisfaction and service quality that are displayed electronically on the application. The results of this study indicate that Go-Send user loyalty is positively and significantly influenced by customer satisfaction and the level of E-Service Quality. Research Sasono, et al. [13] aims to determine the role of e-satisfaction in mediating the effect of e-service quality on the e-loyalty of private bank customers in Indonesia. The results shown from the research are that E-Service Quality has a significant positive effect on E-Satisfaction and E-

Satisfaction has a significant positive effect on E-Loyalty. Lai [14] conducted a study that aims to determine the factors that influence customer satisfaction in E-Commerce Mongolian E-Service Quality. The results of this study indicate that all E-Service Quality affects E-Commerce Mongolian. Khan [15] conducted a study on the effect of E-Service Quality (E-SQ) on Customer Satisfaction. The results of this study indicate that there is a positive effect of the E-SQ dimensions variable on the Customer Satisfaction variable. The research of Ahmed [16] aims to create a structured framework for identifying the most relevant quality factors of online businesses in Bangladesh and assessing the relationship and significance of these factors in the study. The results show that among all factors, "Reliance" gets the highest priority followed by "Responsiveness". The research of Hammoud [17] aims to examine the relationship between the dimensions of E-Banking Service Quality and Customer Satisfaction to determine which dimension has the potential to have the strongest influence on Customer Satisfaction. The results show that all indicators have a positive effect on customer satisfaction and reliability is the strongest dimension of e-service quality that affects customer satisfaction.

2.3 Hypothesis Development

2.3.1 The Effect of Site Organization in the modified E-Service Quality model on E-Customer Satisfaction

Site organization is a description of the attributes that are first noticed by customers, even if they are not yet customers, so that it becomes the first point of interest that management must work on [10]. Previous research conducted by Raza [3] and Nugraha [10] shows that there is a positive influence of site organization on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if the site organization meets consumer expectations, then customer satisfaction will be fulfilled and customer satisfaction will increase. The more attractive the site organization, the more customer satisfaction will increase. Based on the description above, the research hypothesis is formulated:

H1: Site Organization in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.2 The Effect of Responsiveness in the modified E-Service Quality model on E-Customer Satisfaction

Responsiveness generally refers to the accuracy and speed of management's response to various obstacles and problems found in the field [10]. Previous research conducted by Raza [3], Nugraha [10] and Jameel [18] shows that there is a positive influence of responsiveness on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if responsiveness meets consumer expectations, then customer satisfaction will be fulfilled. The higher the quality of responsiveness in responding to customer complaints on e-commerce, the more customer satisfaction will increase. Based on the description above, the research hypothesis is formulated:

H2: Responsiveness in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.3 The Effect of Reliability in the modified E-Service Quality model on E-Customer Satisfaction

Reliability is defined as the ability to perform the promised service reliably and accurately [19]. Previous research conducted by Raza [3] Nugraha [10], and Hammoud [17] shows that there is a positive influence of reliability on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if reliability meets consumer expectations, then customer satisfaction will be fulfilled. The higher the quality of reliability in e-commerce in fulfilling the promised services, the more customer satisfaction will increase. Based on the description above, the research hypothesis is formulated:

H3: Reliability in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.4 The Effect of User Friendliness in the modified E-Service Quality model on E-Customer Satisfaction

Website usability refers to the customer's feelings about the level of user-friendliness of the website browsing experience. Previous research conducted by Raza [3] and Nugraha [10], showed that there was a positive influence of user-friendliness on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if user-friendliness meets consumer expectations, then customer satisfaction will be fulfilled. If e-commerce is easy to understand and use, it will increase customer satisfaction. Based on the description above, the research hypothesis is formulated:

H4: User Friendliness in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.5 The Effect of Personal Need in the modified E-Service Quality model on E-Customer Satisfaction

Personal needs can be defined as how management can manage customer requests, understand customer needs, and express their services [10]. Previous research conducted by Raza [3] and Nugraha [10], showed that there was a positive influence of Personal Needs on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if Personal Needs meet consumer expectations, then customer satisfaction will be fulfilled. The higher the quality of Personal Needs in e-commerce in meeting customer needs, the more customer satisfaction will increase. Based on the description above, the research hypothesis is formulated:

H5: Personal Need in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.6 The Effect of Efficiency in the modified E-Service Quality model on E-Customer Satisfaction

Efficiency is the ease and speed of accessing and using e-service [20]. Previous research conducted by Raza [3], Nugraha [10], and Junaidi [11] shows that there is a positive influence of efficiency on e-customer satisfaction. Following the theory of Disconfirmed Expectancy, if the level of efficiency meets consumer expectations, then customer satisfaction will be fulfilled. The higher the efficiency of e-commerce, the more customer satisfaction will increase. Based

on the description above, the research hypothesis is formulated:

H6: Efficiency in the modified E-Service Quality model has a positive effect on E-Customer Satisfaction

2.3.7 The Effect of E-Customer Satisfaction on E-Customer Loyalty

Customer loyalty can be obtained from a high level of satisfaction because if the business focuses on customer needs it causes high customer satisfaction which in turn can build customer loyalty [21]. Previous research conducted by Raza [3], Sasono [13], and Mahadin [9] showed that there was a significant positive effect of E-Customer Satisfaction on E-Customer Loyalty. Following the theory of Disconfirmed Expectancy if customer expectations are as expected or better (positive disconfirmation) it will affect customer satisfaction, and according to the previous literature if customer satisfaction increases then customer loyalty also increases. The higher the level of customer satisfaction from e-commerce, will increase customer loyalty. Based on the description above, the research hypothesis is formulated:

H7: E-Customer Satisfaction has a positive effect on E-Customer Loyalty The research model in this study is depicted below.

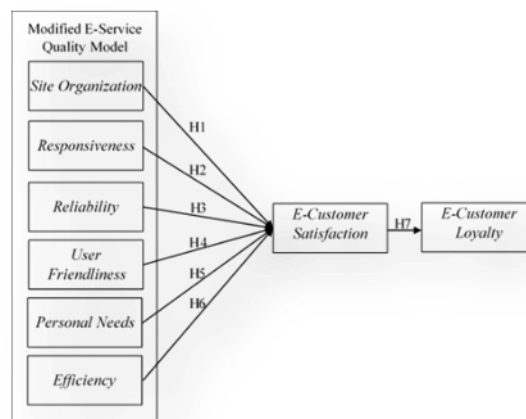


Fig.1. Research Model

3. Method

The research method uses a quantitative approach, due to testing the hypothesis. This study uses primary data types by distributing online surveys through Google Forms which is adapted from previous research [3]. The population in this study were students of Batam State Polytechnic majoring in Business Management with a total 2500 students [6], the number of samples in this study uses the slovin formula [22], with a minimum sample of 100 samples. The study's instrument is a questionnaire that uses the Likert scale as a rating scale scaling method. The survey was adapted from Raza [3]. The data analysis technique in this study uses the Partial

Least Square (PLS) approach and uses the SmartPLS 3.2 software.

3.1 Independent Variable Site Organization

Site organization may include web design, and precise and detailed descriptions of services [3]. Variables were measured using two statement items regarding the appearance of the website adapted from Raza [3], using four Likert scale scales.

Responsiveness

Responsiveness is responsiveness in providing answers to user questions positively and quickly [3]. This variable was measured using three statement items regarding responsiveness in responding to customer needs which were adapted Raza [3], using a four-point Likert scale.

Reliability

Reliability is the ability to complete agreed tasks without fail and correctly [3]. This variable is measured using four statement items regarding reliability in meeting customer needs accurately and as promised. The statement is adapted from Raza [3], using a four-point Likert scale.

User Friendliness

User Friendliness is a user-friendly website that provides user convenience and comfort in accessing [3]. This variable was measured using five statement items regarding the ease and convenience of using the website which was adapted from Raza [3], using a four-point Likert scale.

Personal Needs

Personal Needs are the fulfillment of services by customer requests [3]. This variable was measured using a three-item statement regarding the fulfillment of customer demand which was adapted from Raza [3], using a four-point Likert scale.

Efficiency

Efficiency is the ease and speed of accessing and using e-service. This variable is measured using a three-item statement regarding the use of a website that is easy and fast. The statement is adapted from Raza [3], using a four-point Likert scale.

Dependent Variable E-Customer Satisfaction

Satisfaction is a feeling of pleasure or displeasure that arises in a person because of comparing the actual and expected product [3], in the context of this study electronic satisfaction. This variable was measured using a three-item statement about the user's feelings about using the website which was adapted by Raza [3], using a four-point Likert scale.

E-Customer Loyalty Site Organization

E-customer loyalty is a repurchase activity motivated by customer satisfaction with previously

used products or services [23]. This variable is measured using three statement items related to the consumer's desire to recommend and continue using the e-commerce used. Using a four-point Likert scale, the statement is adapted from Raza [3].

Results and Discussion

Result Outer Model

Construct Validity Test Results

The outer model is said to be valid, If the outer loading value > 0.7 .

Table 1. Factor Loadings and Cross Loadings for Measurement Models After Elimination

	Item	ECL	ECS	EFFE	PENE	RELI	RESP	SO	USFR
	ECL1	0,905	0,630	0,658	0,587	0,543	0,572	0,675	0,533
	ECL2	0,850	0,559	0,425	0,575	0,504	0,511	0,572	0,482
	ECL3	0,842	0,615	0,658	0,587	0,467	0,548	0,584	0,530
	ECS1	0,636	0,872	0,617	0,736	0,741	0,709	0,675	0,706
	ECS2	0,565	0,825	0,846	0,631	0,540	0,613	0,793	0,754
	ECS3	0,590	0,878	0,676	0,723	0,664	0,715	0,693	0,746
	EFFE1	0,578	0,688	0,834	0,578	0,512	0,572	0,673	0,639
	EFFE2	0,555	0,742	0,880	0,568	0,495	0,535	0,642	0,662
	EFFE3	0,598	0,686	0,840	0,515	0,479	0,598	0,680	0,669
	PENE1	0,567	0,660	0,487	0,844	0,636	0,611	0,616	0,608
	PENE2	0,518	0,571	0,462	0,768	0,515	0,481	0,583	0,541
	PENE3	0,599	0,782	0,659	0,890	0,656	0,608	0,653	0,684
	RELI1	0,380	0,481	0,353	0,518	0,703	0,490	0,444	0,425
	RELI2	0,507	0,612	0,434	0,684	0,829	0,575	0,603	0,586
	RELI3	0,505	0,687	0,534	0,579	0,881	0,598	0,637	0,647
	RELI4	0,485	0,647	0,539	0,574	0,817	0,491	0,529	0,562
	RESP1	0,563	0,734	0,615	0,666	0,551	0,892	0,709	0,694
	RESP2	0,552	0,691	0,552	0,594	0,582	0,884	0,640	0,647
	RESP3	0,487	0,585	0,532	0,465	0,574	0,773	0,586	0,592
	SO1	0,695	0,729	0,686	0,641	0,649	0,656	0,908	0,741
	SO2	0,604	0,805	0,742	0,711	0,615	0,734	0,925	0,840
	USFR1	0,391	0,665	0,600	0,490	0,524	0,601	0,693	0,834
	USFR2	0,516	0,747	0,739	0,632	0,624	0,646	0,741	0,890
	USFR3	0,552	0,749	0,649	0,687	0,577	0,630	0,753	0,830
	USFR5	0,534	0,708	0,594	0,653	0,595	0,669	0,715	0,804

ECL: E Customer Loyalty, ECS: E-Customer Satisfaction, EFFE: Efficiency, PENE: Personal Need, RELI: Reliability, RESP: Responsiveness, SO: Site Organization, USFR: User Friendliness

Due to the low outer loading value of 0.559, the USFR4 indicator is declared invalid. Invalid indicator will be eliminated and tested again prior to further testing. Table 1 shows the results of the outer loading after USFR5 has been removed.

Convergent Validity Test

This study measures convergent validity using the rule of thumb, which is outer loading > 0.7 , communality > 0.5 , and Average Variance Extracted (AVE) > 0.5 .

Table 2. Validity and Reliability Test

Construct	Validity Test	Reliability Test		R Square
	AVE	Cronbach's Alpha	Composite Reliability	
E-Customer Loyalty	0.750	0.833	0.900	0.484
E-Customer Satisfaction	0.738	0.822	0.894	0.875
Efficiency	0.725	0.81	0.888	
Personal Need	0.698	0.783	0.873	
Reliability	0.657	0.824	0.884	
Responsiveness	0.725	0.809	0.887	
Site Organization	0.840	0.810	0.913	
User Friendliness	0.706	0.860	0.905	

Source: Data Processing with SmartPLS

Based on Table 2, the AVE score shows a value > 0.5 . It can be concluded that all variables have good convergent validity.

Discriminant Validity Test

The model has discriminant validity if the cross loading in a variable is > 0.7 or if the AVE root for each construct is greater than the correlation between constructs and other constructs in the model. Based on Table 1, it can be seen that the cross loading in a variable is > 0.7 . It can be concluded that all variables have good convergent validity.

Reliability Test

Reliability test can be seen from Cronbach's alpha and Composite reliability scores. Table 2 shows the results of Cronbach's alpha and Composite reliability for each construct > 0.7 , it can be concluded that all variables are reliable.

Inner Model

Table 2 indicates that the R-Square of E-Customer Loyalty is 0.484. This means that E-Customer Satisfaction can affect 48.8%, whereas other variables outside of this study can affect 51.6%. The R-Square of E-Customer Satisfaction is 0.875. This means that the variables Site Organization, Responsiveness, Reliability, User Friendliness, Personal Need and Efficiency influence 87.5%, while additional variables outside of this study influence 12.5%.

Hypothesis Testing Result

Table 3. T-Statistic and P-Value Score

Construct		T-Statistic	P-Value	
ECS	-> ECL	13.650	0.000	Supported
EFFE	-> ECS	3.763	0.000	Supported
PENE	-> ECS	3.002	0.001	Supported
RELI	-> ECS	2.149	0.016	Supported
RESP	-> ECS	2.062	0.020	Supported
SO	-> ECS	0.461	0.322	Not Supported
USFR	-> ECS	2.112	0.018	Supported

Source: Data Processing with SmartPLS

For the one-tailed hypothesis, the path coefficient value or inner model must have a T- statistic greater than 1.64. The first hypothesis (H1) showing a T-Statistic value < 1.64 which is 0.461, indicates that there is no positive influence between Site Organization and E-Customer Satisfaction. The second hypothesis (H2) has a T-Statistic value of 2.062, showing that responsiveness and e-customer satisfaction have a positive influence. The third hypothesis (H3) shows a T-Statistic value of 2.149, indicating that there is a positive influence between Reliability and E-Customer Satisfaction. The fourth hypothesis (H4) has a T-Statistic value of 2.112, showing that User Friendliness and e-customer satisfaction have a positive influence. The third hypothesis (H5) showing a T-Statistic value of 3,002, indicates that there is a positive influence between Personal Needs and E-Customer Satisfaction. The fourth hypothesis (H6) has a T-Statistic value of 3.763, showing that Efficiency and e-customer satisfaction have a positive influence. The third hypothesis (H7) shows a T-Statistic value of 13.650, indicating that there is a positive influence between E-Customer Satisfaction and E-Customer Loyalty.

Discussion

The Effect of Site Organization in the modified E-Service Quality model on E-Customer Satisfaction.

According to the results of hypothesis testing, the H1 is not supported, indicating that there is no positive influence between Site Organization and E-Customer Satisfaction. This is because Shopee's display or user interface has not matched customer expectations so there is no increase in customer satisfaction. Previous research by Linarta [24] found that the orange dominance on shopee is a little uncomfortable when stared at for too long, and the shop design presented by shopee at the event is stuffy and ordinary. The results of interviews in Rahmalia [25] research suggest various constraints to the shopee display, including pop-up notifications, chat bots, many chats, poor video quality, and many unimportant notifications.

The Effect of Responsiveness in the modified E-Service Quality model on E-Customer Satisfaction

Based on the results of hypothesis testing, H2 is supported, meaning that there is a positive influence between Responsiveness and E-Customer Satisfaction where the services provided by shopee are related to handling and responding to obstacles quickly on shopee customers, meeting expectations, and increasing customer satisfaction. This research shows that the more

responsive shopee services are, the more customer satisfaction will increase. The results of this study are in line with previous research by Raza [3] Nugraha [10] and Jameel [18] showing that there is a positive influence of responsiveness on e-customer satisfaction.

The Effect of Reliability in the modified E-Service Quality model on E-Customer Satisfaction Based on the results of hypothesis testing, H3 is supported, meaning that there is a positive influence between Reliability and E-Customer Satisfaction. This hypothesis shows shopee has provided their services safely and within the promised time, this is in line with existing theory, the reliability of shopee services can meet consumer expectations and provide a sense of satisfaction by consumers. This study shows that the more reliable the services provided can increase customer satisfaction. The results of this study are in line with previous research conducted by Raza [3] Nugraha [10], and Hammoud [17] showing that there is a positive influence of reliability on e-customer satisfaction.

The Effect of User Friendliness in the modified E-Service Quality model on E-Customer Satisfaction

Based on the results of hypothesis testing H4 is supported, meaning that there is a positive influence between User Friendliness and E-Customer Satisfaction. This research shows that the shopee application is a site that is easy to use and understand by users. Following the existing theory, the shopee application can meet customer expectations in using e-commerce. This research is in line with previous research by Raza [3] and Nugraha [10] which showed that there was a positive influence of user friendliness on e-customer satisfaction.

The Effect of Personal Need in the modified E-Service Quality model on E-Customer Satisfaction

Based on the results of hypothesis testing, H5 is supported, meaning that there is a positive influence between Personal Need and E-Customer Satisfaction. This study shows that shopee can meet customer needs with information and products that match customer preferences. Following the existing theory, shopee has met customer expectations and increased satisfaction with the fulfillment of customer needs. The higher the customer needs are met, the more customer satisfaction will increase. In line with previous research by Raza [3] and Nugraha [10], it shows that there is a positive influence of Personal Needs on e-customer satisfaction.

The Effect of Efficiency in the modified E-Service Quality model on E-Customer Satisfaction Based on the results of hypothesis testing, H6 is supported, meaning that there is a positive influence between Efficiency and E-Customer Satisfaction. It can be seen that shopee e-commerce users find this application easy to use and fast in making transactions. According to existing theory, shopee e-commerce may fulfill customer expectations in terms of simplicity of use and transaction speed, which promotes shopee user satisfaction. The findings of this study are consistent with prior studies by Raza [3], Nugraha [10], and Junaidi [11], which found a positive influence of efficiency on e-customer satisfaction.

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

Based on the results of hypothesis testing, H7 is supported, meaning that there is a positive influence between E-Customer Satisfaction and E-Customer Loyalty. According to the findings of this study, shopee customers are satisfied, intend to suggest e-commerce to others, and intend to continue using it. Previous research by Raza [3], Sasono [13], and Mahadin [9] have found a strong positive effect of E-Customer Satisfaction on E-Customer Loyalty.

Conclusion

This study provides a theoretical explanation of the implications associated with the factors that influence customer satisfaction and shopee customer loyalty. Furthermore, this research provides practical implications, such as steps that can be taken to increase shopee customer satisfaction, one of which is to improve site organization on the shopee application. Shopee can improve site organization by making it more comfortable and appealing. According to the findings of this study, H1 is not supported because there is no positive influence from site organization on E-Customer Satisfaction, whereas the other hypotheses are supported. In this study, several limitations exist, including the small number of samples, the limited number of Batam state polytechnic business management students, and the determination of one e-commerce example. Based on the limitation and implications of this research, the writers deliver suggestions, for future studies are recommended to use a wider sample, such as the age of the respondents being studied can be of all ages. Future research can use more than one e-commerce so that further research can compare how the level of electronic satisfaction in each e-commerce is often used by customers.

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