



Analysis of Factors Affecting User Satisfaction of E-Commerce Applications Using End-User Computing Satisfaction (EUCS) Method

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Abstract

The current era is marked by rapid technological advancements, with e-commerce being one of the most prominent innovations that caters to people's needs and saves time. In this study, we examine the factors that significantly influence user satisfaction in Shopee, a popular e-commerce platform, using the End User Computing Satisfaction (EUCS) method. Data was collected through the distribution of questionnaires to students in the DKI Jakarta area. Our analysis revealed that Content, Accuracy, Format, Ease of Use, Timeliness, and Fulfillment are all significant factors that affect user satisfaction. Together, these factors explain 78.7% of user satisfaction. Additionally, through T-tests, we found that only three variables have a significant and positive impact on user satisfaction: Ease of Use, Timeliness, and Fulfillment. These findings indicate that e-commerce platforms should prioritize these factors to enhance user satisfaction.

Keywords: EUCS, User Satisfaction, E-Commerce

1. INTRODUCTION

The competition among e-commerce platforms is intense, as new technologies continue to emerge and reshape people's lifestyles. In particular, e-commerce has become a popular and convenient alternative to traditional in-store shopping [1,2]. Shopee is one such platform that has gained popularity due to its ease of use and time-saving benefits. As technology advances, the trend towards online shopping is likely to continue, making it increasingly important for e-commerce platforms to provide efficient and user-friendly services to stay competitive.

Shopee has emerged as a leader in e-commerce in Indonesia, with the highest web traffic in the first quarter of July 2020, attracting around 93 million web visitors and ranking first on Appstore and Playstore. Shopee's popularity extends beyond web traffic, with high rankings on social media platforms like Twitter, Instagram, and Facebook. Shopee's success can be attributed to its innovative services, including free shipping, safe payment processing, and integrated logistics arrangements, making it a convenient and reliable platform for both buyers and



sellers. The platform offers a wide range of categories, including electronics, accessories, home appliances, food, clothing, cosmetics, automotive, and photography, and provides stalls for buying and selling [5-6].

However, as the number of Shopee users increases, so do the challenges and issues, including competition from other e-commerce platforms, as well as the quality of services and the accuracy of the system. To improve the quality of the Shopee application, it is essential to analyze the factors that affect user satisfaction. User satisfaction is determined by comparing a user's expectations for a product to the actual results. Therefore, identifying and addressing these factors are crucial to ensure user satisfaction and enhance the overall user experience [7].

In this study, we utilized the End User Computing Satisfaction (EUCS) method to assess user satisfaction, a widely used technique to measure the satisfaction level of end-users in an information system [8-10]. Our analysis focused on six independent variables, namely content, ease of use, format, accuracy, and timelines, as suggested by William J Doll in 1988. Additionally, we included fulfillment as an additional independent variable based on previous studies [11], and user satisfaction as the dependent variable as adopted in previous research [12]. Our research primarily targeted Shopee users, specifically students in the DKI Jakarta region, with the goal of identifying the factors that positively and significantly influence user satisfaction. This approach allows us to obtain insights into how the Shopee application can be enhanced to improve user satisfaction and provide a better user experience.

2. METHODS

This study uses the EUCS method, with six independent content variables, to measure user satisfaction with the contents of a system in the form of functions and modules used by users and information generated by the system. Accuracy measures satisfaction from the accuracy of data when the system receives input and then processes it into the knowledge of end-user satisfaction from the appearance and aesthetics of the system interface. Ease Of Use measures a plan and is essential. Timeliness measures satisfaction, the joy of punctuality, and how quickly the application provides the seed. Fulfillment is the site's agreement regarding availability, order fulfillment, and refunds. This research is divided into four stages, as shown in Figure 1.

2.1. Preliminary Research

Preliminary research to identify problems; there were complaints on the Shopee application, such as Shopee services, transaction failures, delivery of goods, and responsiveness in the Shopee application. Shopee application design, based on reviews provided by Shopee application users on the App Store, Google Play

Store, and Students in the DKI Jakarta area by conducting an initial survey through google from as many as 100 respondents.

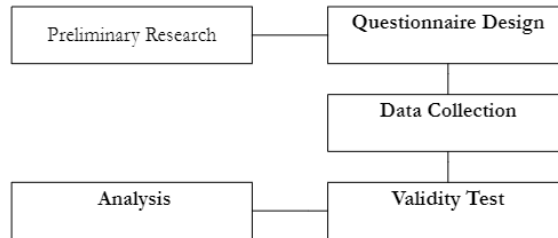


Figure 1. Research Framework

2.2. Questionnaire Design

This study has 23 questions, as in Table 2, which used Google forms for DKI Jakarta students' respondents. This questionnaire uses a Likert scale with a score of 1 strongly disagree, two disagree, three differ, four agree, and five strongly agree. List of Questions adopted from [13].

Table 1. Questionnaire

Variable	Question
Content	<ul style="list-style-type: none"> The information on Shopee E-commerce is complete and precise. The Shopee application is unique from other E-commerce sites.
Accuracy	<ul style="list-style-type: none"> The E-Commerce search menu assistance feature on the Shopee application is correct. Chat services with sellers, accurate to user needs. The delivery service is accurate, according to the transaction on the Shopee application.
Format	<ul style="list-style-type: none"> The Shopee application has been presented in an attractive appearance/design/format/UI (User Interface). The appearance of the Shopee application is clear (menu, icon). The layout of the features on the Shopee application is by user needs.
Ease Of Use	<ul style="list-style-type: none"> The Shopee app is easy to use. The Shopee app is easily accessible anywhere and anytime. The features of the Shopee application make it easier for users to find their needs.
Timeliness	<ul style="list-style-type: none"> The information needed on the Shopee application can be directly accessed (promos, discounts). The Shopee application provides the latest information (promos, discounts, events).

	<ul style="list-style-type: none">• Sellers on the Shopee application respond quickly to users if they experience problems (such as inappropriate goods or old delivery services).• Customer Service on the Shopee application provides a quick response if you experience problems.
Fulfillment	<ul style="list-style-type: none">• The delivery time of the goods is no more than estimated.• The presence of a return of goods when the product is received needs to be corrected or repaired.• There is a refund when the order is canceled.• The User's data is guaranteed security.
Satisfaction	<ul style="list-style-type: none">• The content on the Shopee application is by user needs.• I am satisfied with the accuracy of the output (such as the goods according to the description and image) on the Shopee application.• Shopee application provides excellent and reliable performance.• Shopee app saves time in shopping.

2.3. Data Collection

The collection of research data using the survey method, namely a questionnaire making several questions and giving them to the respondents of this study were students in the DKI Jakarta area who used the Shopee application. The number of students obtained from Katadata.co.id was 205,248. Then several samples were taken. The number of representatives from a study's population can be determined using the Slovin formula from 100 pieces.

2.4. Validity Test

Validity is an index that aims to show that the instrument measures what it wants to measure. The validity test has an r value for the basis of decision-making to compare with table r as follows:

- a. If the value of r counts $>$ the value of r of the table, then the instrument is declared valid.
- b. If the value of r counts $<$ the value of r of the table, the instrument is declared invalid.

The reliability of the tests to determine the questionnaires used in data collection can already be said to be reliable or not using Alpha Cronbach; if the Cronbach Alpha value is > 0.70 , then the variable is declared trustworthy.

2.5. Analysis

The analysis in this research uses SPSS (Statistical Product and Service Solutions) tools. The study carried out is:

- a) The F test is used to determine whether or not there is an influence of an independent variable (X) with a dependent (Y) simultaneously. If the Sig value < 0.05 , then there is an influence.
- b) The Coefficient of Determination is used to determine what percentage of the influence of the independent variable (X) simultaneously affects the dependent variable (Y).
- c) The Correlation Test determines the strength level of the relationship between independent variables (X) and dependent variables (Y).
- d) The T-test is carried out to determine whether or not there is an influence of an independent variable (X) with a dependent (Y) partially. The hypothesis will be accepted if the Sig value < 0.05 , then the variable is declared to have a significant effect.

3. RESULTS AND DISCUSSION

The r value of the table obtained from 100 respondents was 0.196. The instrument's deal is valid if r counts $> r$ table. The results obtained by all question items are declared suitable for research—the validity test results as in table 4.

Table 4. Validity Test Results

Variable	Indicator	r count	r table	Conclusion
Content	1	0,582	0,196	Valid
	2	0,723		Valid
Accuracy	1	0,529	0,196	Valid
	2	0,622		Valid
	3	0,663		Valid
Format	1	0,601	0,196	Valid
	2	0,662		Valid
	3	0,741		Valid
Ease Of Use	1	0,601	0,196	Valid
	2	0,468		Valid
	3	0,719		Valid
Timeliness	1	0,675	0,196	Valid
	2	0,602		Valid
	3	0,667		Valid
	4	0,759		Valid
Satisfaction	1	0,617	0,196	Valid
	2	0,676		Valid
	3	0,582		Valid
	4	0,723		Valid

Based on the reliability test results, each variable's Cronbach Alpha value was obtained by 0.934, its value greater than 0.7. It can conclude that all instruments on the sifting are declared reliable—the reliability test results as shown in table 5.

Table 5. Reliability Test Results

Conclusion		Conclusion
Cronbach Alpha value	Value of coefficient R	
0.934	0.7	Reliable

The confidence level is 95%, $\alpha = 0.05$. In decision-making, if the sig value < 0.05 , there is an influence of variable X on variable Y simultaneously. If the sig value > 0.05 , then there is no influence. Based on the results of the F test in table 7 of the sig value of 0.000, all variables affect user satisfaction, as shown in Table 6.

Table 6. F Test Results

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Itself.
1	Regression	402.480	6	67.080	57.113	.000 ^b
	Residual	109.230	93	1.175		
	Total	511.710	99			

- Dependent Variable: Satisfaction
- Predictors: (Constant), Fulfillment, Ease of Use, Timeliness, Accuracy, Format, Content

Based on the test results in table 7, an R Square value of 0.787 was obtained, then all variables had an effect of 78.7.

Table 7. Determination Coefisen Test Results

Model	R	R Square	Adjusted R Square	Std. The error in the Estimate
1	.887 ^a	.787	.773	1.08375

Predictors: (Constant), Fulfillment, Ease of Use, Timeliness, Accuracy, Format, Content

The Correlation Test determines the relationship's strength level and whether the type of relationship can be positive or negative between variables—the results are obtained in table 8.

Table 8 Correlation Test Results

Variable	Pearson Correlation Value	Conclusion
Content	0,638	Strong and positive
Accuracy	0,703	Strong and positive
Format	0,644	Strong and positive
Ease Of Use	0,609	Medium and positive
Timeliness	0,698	Strong and positive
Fulfillment	0,795	Strong and positive

This study uses independent and dependent variables. The independent variables are Content, Accuracy, Format, Ease of Use, timeliness, and fulfillment. Dependent variable, namely Satisfaction. The problem with this research is that there are complaints from Shopee users. Respondents from the study were DKI Jakarta students who used Shopee with a population of 205,248, and the number of respondents obtained from the calculation of the Slovin formula. The data collection technique for this research was distributing questionnaires with 23 questions and seven variables. The data obtained is then tested for validity, reliability, F, coefficient of determination, correlation, and T-tests.

Factors that have a positive and significant effect on user satisfaction from the results of the T-test and Correlation test, namely the Content variable, a sig value of $0.010 < 0.05$, and the Pearson correlation value is 0.638. The Ease Of Use variable has a sig value of $0.004 < 0.05$ and a Pearson correlation value of 0.609. Timeliness variable with a sig value of $0.018 < 0.05$ and a Pearson correlation value of 0.698. Fulfillment variable with a sig value of $0.000 < 0.05$ and a Pearson correlation value of 0.795. The factors with no positive and significant effect are the Accuracy variable with a sig value of $0.061 > 0.05$ and a Pearson correlation value of 0.703. Format variable with a sig value of $0.181 > 0.05$ and a Pearson correlation value of 0.644.

4. CONCLUSION

After collecting and analyzing the data through various tests such as validity, reliability, F-tests, coefficient of determination, correlation, and T-tests, we were able to identify the variables that had a significant and positive impact on user

satisfaction. These variables were Ease-of-Use, Timeliness, and Fulfillment, which were found to be statistically significant with a p-value less than 0.05 and high Pearson correlation values. The coefficient of determination test showed that the independent variables accounted for 78.7% of user satisfaction. Future research should expand the sample size to include a larger population of Shopee users, use different methods to compare with previous studies, and include additional variables to further strengthen the analysis of factors that influence user satisfaction with the Shopee application. Overall, our findings provide insights on how the Shopee application can be improved to enhance user satisfaction and provide a better user experience.

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