

EFFECT OF BLUEBOX E-COMMERCE SERVICE QUALITY ON USER SATISFACTION USING WEBQUAL 4.0 AND END USER COMPUTING SATISFACTION (EUCS) METHODS

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ABSTRACT

Bluebox is the first online shopping platform in Manokwari that provides a wide range of daily and monthly shopping products not only that but also food and snacks, which can help the shopping process from home. Bluebox comes with delivery services in various areas in Manokwari and offers various payment options, including COD, transfer, and QRIS. The purpose of this study is to investigate in depth how the Bluebox application can improve their service quality from various aspects based on user satisfaction and experience with the ultimate goal of increasing user satisfaction and the success of MSMEs in Manokwari. The data is processed using the Webqual 4.0 method which includes Usability, Information Quality, service Interaction variables and the End User Computing Satisfaction (EUCS) method, especially the Timeliness variable. The data analysis method in this study uses the PLS-SEM approach with SmartPLS version 4.1.0.2 as a tool to help test research data. From the test results obtained in this study, each of the four hypotheses proposed that the average measurement of user satisfaction with the Bluebox application gets a value of 4.095 with the Satisfied category. Factors that affect user satisfaction with 4 hypotheses and 1 acceptable hypothesis, namely the Timeliness variable which has a significant effect of P Values <0.05 on User Satisfaction, while the Usability, Information Quality and Service Interaction variables do not show a significant effect on User Satisfaction with a significance level of P Values > 0.05 in the Bluebox application.

KEYWORDS Bluebox application, EUCS, Webqual 4.0, User satisfaction, PLS-SEM



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INTRODUCTION

In today's digital era, technology has developed continuously, making it easier for people to get whatever they need. People can easily find information or communicate with the help of technology (Megawaty & Luh Ariningsih, 2022 in Nazwa Aprilia & M. Rudi Sanjaya, 2023). Technology plays a crucial role in supporting various human life activities and facilitating daily needs. Technological advances contribute significantly to the improvement of various sectors of people's lives, including the economic sector. The development of online businesses today reflects the increasing utilization of information technology. The growth of new technologies is driving the adoption of online marketing channels, known as e-commerce. Business people utilize this to grow their business through e-commerce websites. One of the main supporting factors in e-commerce is the website itself.

Manokwari City, as the capital of West Papua province, is experiencing an increase in business competition and the use of information technology among the community. People are increasingly inclined to shop online. Therefore, the development of MSME businesses in Manokwari city is still very promising and has great potential. To increase the buying and selling of MSME businesses so that people can easily access various shopping needs, information technology offers an electronic-based shopping solution, namely e-commerce. E-commerce makes it easy for people in Manokwari city to conduct buying and selling transactions via the internet. In addition, one of the important components that support e-commerce is the website. With a website and application, users who want to transact online can visit the page or use the application on their mobile phone. Bluebox is the first online shopping platform in Manokwari that provides a variety of products for daily and monthly shopping needs, not only that but also food and snacks, which can help the shopping process from home. Bluebox comes with delivery services in various areas in Manokwari and offers various payment options, including COD, transfer, and QRIS.

Consumer confidence in doing online shopping is an obstacle that is difficult to control because it relates to consumer attitudes and behavior in relation to online shopping so that e-commerce business actors can take advantage of the potential that exists in Indonesia, especially in the city of Manokwari. The quality of e-commerce applications can affect the number of customers who decide to do online shopping in e-commerce, to find out the high and low quality of an application, a standard is determined (Deva Nur Fauziah & Dewi Ayu Nur Wulandari, 2018: 173).

Based on the description previously described, this study tries to measure user satisfaction with the Bluebox application. The purpose of using Webqual 4.0 and EUCS (End User Computing Satisfaction) is to determine the level of satisfaction with the quality of service of the Bluebox application to users, because the method used is to see end user perceptions which are measured by several research instruments categorized in several research variables, namely: Usability Quality (quality of use), Information Quality (quality of information), Service Interaction Quality (quality of service interaction), Timeliness (timeliness) (Abbas & Wahidin 2013 in Aidil Fajar Zulfahri, Dwi Agung Wibowo & Agustian Noor, 2024: 46). this

research uses a descriptive approach. Data collection is done by distributing questionnaires to users who have used the Bluebox application, with a total of 100 respondents.

There is a similar previous research conducted by Gigih Prasongko and Salamun Rohman Nurdin with the title "Analysis of the Quality of Melisa Information Systems on User Satisfaction Using the Webqual 4.0 Method and End-User Computing Satisfaction". This study found that the four hypotheses proposed were accepted or significantly influenced user satisfaction. The data was processed using the WebQual 4.0 approach which includes Usability, Information Quality, and Service Interaction variables, as well as the End User Computing Satisfaction (EUCS) method, specifically on the Content variable. The findings show that the Service Interaction (X3) variable has the greatest influence with a percentage of 45.5%, followed by the Content (X4) variable with an influence of 28.3%, the Information Quality (X2) variable with an influence of 16.8%, and the Usability (X1) variable which has the smallest influence of 14.5%. This research aims to ensure the level of user satisfaction of the MELISA information system, especially students of the Faculty of Engineering class of 2019 (Gigih Prasongko & Salamun Rohman Nurdin, 2023).

Thus, this study aims to measure the effect of the relationship between the quality of service of the Bluebox e-commerce application and user satisfaction using the Webqual 4.0 and End User Computing Satisfaction (EUCS) methods. The research method uses the SEM PLS analysis measurement technique using the Smartpls version 4.1.0.2 tool as a sample processing tool in order to find out the aspects that need to be evaluated from the platform. The results of this study are expected to be a reference for Bluebox e-commerce application developers to improve service quality and user satisfaction.

RESEARCH METHOD

Research Stages

This study uses quantitative methods because it aims to identify the level of satisfaction of Bluebox application users. The data source in this study comes from primary data by distributing questionnaires to Manokwari people who have shopped using the Bluebox application.

Problem identification

The object of this research is a Bluebox shopping application. This application serves to serve sellers and buyers to conduct online buying and selling transactions. In this study, there are two variables used, namely, independent variables which include usability quality, information quality, and service interaction quality, while the dependent variable used is timeliness as timeliness.

Literature Study

This literature study is carried out in order to become basic knowledge related to research. So that it will make it easier for researchers to identify the information that will be needed, find problems and collect supporting data and be able to

understand the case study being studied by reading and understanding journal sources to support research.

Determination of Method

The design of the research stages that will be carried out in order to achieve the research objectives is as follows.

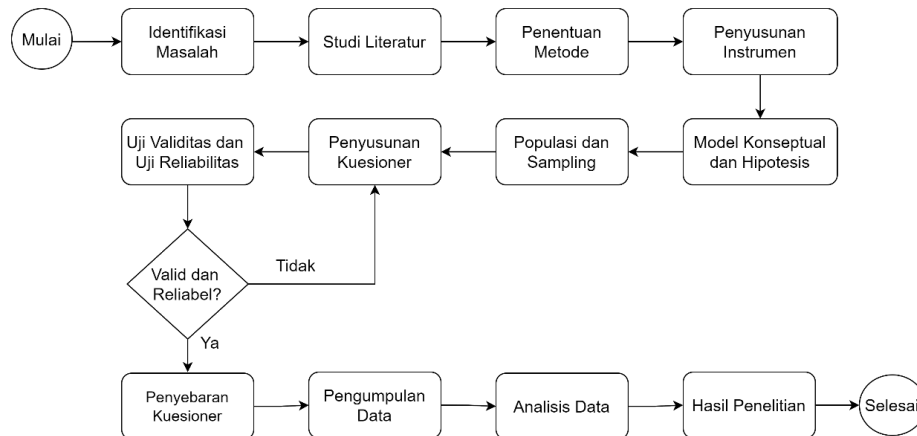


Figure 1. The design of the research stages

The research begins with identifying the problems that occur in Bluebox services that make this research necessary, then a literature study is conducted to find references related to this research. The next step is to determine the method that will be used in the research, then the preparation of instruments and research hypotheses. Then determining the population and sample of field data collection by distributing research questionnaires after testing the questionnaire instrument with validity and reliability tests, after which data collection is carried out then analyzing and discussing the data obtained, and ending with drawing conclusions.

Population and Sampling

Researchers conducted sampling using purposive sampling techniques. The first stage in the purposive sampling technique used is to select part of the population, where the required criteria are respondents who have experience using the Bluebox application by distributing questionnaire links via social media. Furthermore, the second stage of sampling is carried out with convenience sampling techniques, researchers directly approach individuals by distributing research brochures. According to (Hair et al), it states that the minimum sample size used by PLS-SEM ranges from 100-300 sample sizes (Suharjo & Sumarno, n.d). So it can be said that the number of samples to be taken is 100 respondents.

Instrument preparation

The preparation in this study was carried out on the basis of variables consisting of several existing indicators

Conceptual Model and Hypothesis

In this study, there are two types of variables that will be used, namely independent variables and dependent variables. Independent variables, also known as independent variables, include Usability, Information Quality, Service Interaction, and Timeliness. Meanwhile, the dependent variable or the dependent variable in this study is User Satisfaction.

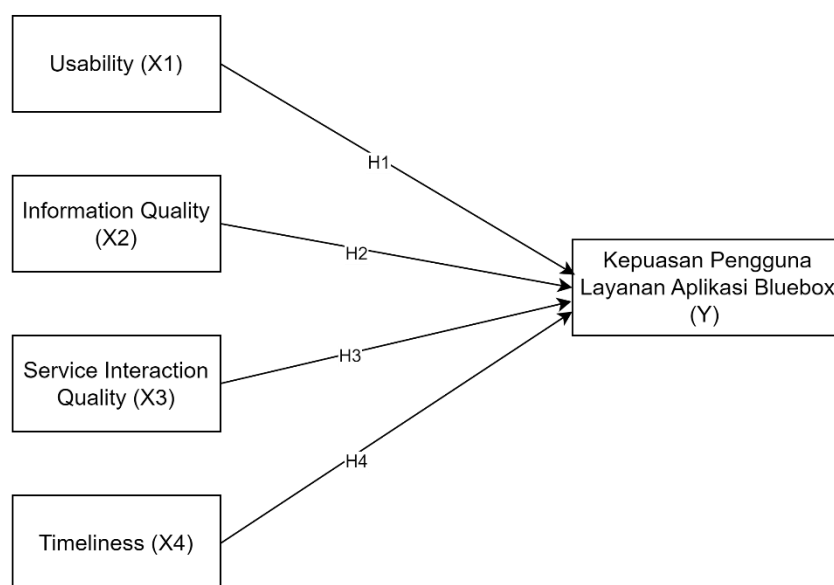


Figure 2 Conceptual Model

Table 1. Research hypothesis

No.	Hypothesis
H1	Usability in the Bluebox application affects User Saticfaction
H2	Information quality in the Bluebox application affects User Saticfaction
H3	Service Interaction in the Bluebox application affects User Saticfaction
H4	Timeliness in the Bluebox application affects User Saticfaction

Questionnaire development

The questionnaire was created to systematically collect data from respondents, measure the variables under study, and obtain their views or behavior on certain topics, thus facilitating the analysis and interpretation of the research results.

Table 2. Questions and indicators on Webqual 4.0 and EUCS variables

Variables	Question	Code	Indicator
Usability (X1)	All features contained in the Bluebox application service are easy to use?	X1.1	Ease of use of Bluebox app features

	Bluebox app provides a good shopping experience?	X1.2	App shopping experience
	Bluebox app services are easily accessible at any place and time?	X1.3	Availability of access to the Bluebox application
Information Quality (X2)	Bluebox application service provides information as needed?	X2.1	Availability of information as needed
	Features and information contained in the Bluebox application service are complete and easy to understand?	X2.2	Completeness and ease of understanding Bluebox app information
	The information displayed on the bluebox application service is very helpful in ordering groceries, groceries & semilan?	X2.3	Information assistance in food ordering activities
	Bluebox app provides relevant grocery, food & snack information?	X2.4	Relevance of information about food
	Bluebox app provides reliable information?	X2.5	Trustworthiness of the information provided by the application
Service Interaction Quality (X3)	I feel safe and secure when buying food on the Bluebox app?	X3.1	User's sense of safety and comfort
	I feel safe when I input my personal information on the Bluebox app?	X3.2	Security of users' personal information
	Do I feel safe completing payment transactions on the Bluebox app?	X3.4	Security of transactions in the Bluebox app
	Bluebox app has a good reputation?	X3.5	Bluebox app reputation
	Bluebox app gives an interesting impression?	X3.6	Overall impression given by the Bluebox app
	I feel confident that the goods/services will be delivered as promised?	X3.7	Consumer confidence in service
Timeliness (X4)	Bluebox app service always displays the latest product information on	X4.1	Up-to-date product information

	groceries, groceries & snacks?		
	When clicking on a feature in the Bluebox application service, the page/view will switch in a short time?	X4.2	Speed of switching pages/views
	When searching on the Bluebox application service, will it display the result information quickly?	X4.3	Speed of displaying search results
	The Bluebox app responds quickly and well to user queries?	X4.4	App responsiveness to queries
User Satisfaction (Y)	Overall, the Bluebox application service is a reliable service and can provide convenience for users in meeting their needs.	Y.1	Reliability of app serviceability

Data Collection

After the preparation of instruments and questionnaires is carried out, data distribution is carried out by distributing instruments to respondents who have experience using the Bluebox application after the data is distributed to the respondents, the data is collected through Microsoft Excel which will then be analyzed using SmartPLS software.

Data Analysis

Analysis of the relationship between service quality and user satisfaction levels generated through primary data data collected through questionnaires will be analyzed using the Least Squares Structural Equation Modeling (PLS-SEM) approach with the help of SmartPLS software as a test tool for the data provided.

Validity and Reliability Tests

Validity and reliability testing was conducted on 20 respondents to measure user satisfaction with the Bluebox application, the validity testing criteria on the loading factor > 0.70 from the test results on variables X1, X2, X3, and X4 found > 0.70. Meanwhile, the reliability test is said to be reliable if the test criteria are > 0.70 from the test results on variables X1, X2, X3, and X4 found > 0.70. So the test results on the validity and reliability tests were found to be valid and reliable.

Questionnaire Distribution

The questionnaire was distributed to respondents who use the Bluebox application for online shopping. Questions use a five-point Likert scale, with a scale

calculation of 1 to 5. Respondents provide an assessment through the Google Form link that has been created.

RESULT AND DISCUSSION

Respondent Characteristics

Age of Respondents

After distributing questionnaires to 100 respondents who use the Bluebox application, the following image of the Age characteristic data follows:

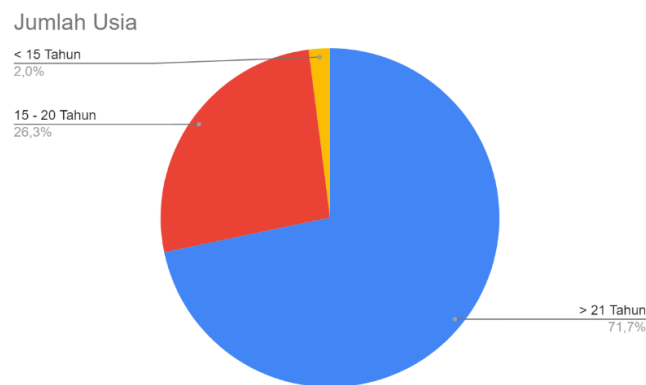


Figure 3. Age Characteristics

Based on Figure 3. The age of respondents from the results of distributing questionnaires to 100 respondents, there are respondents aged 21 years and over who use the Bluebox application more with a percentage of 71.7%. So that shows the average respondent of Bluebox application users aged 20 years and over.

Gender of Respondents

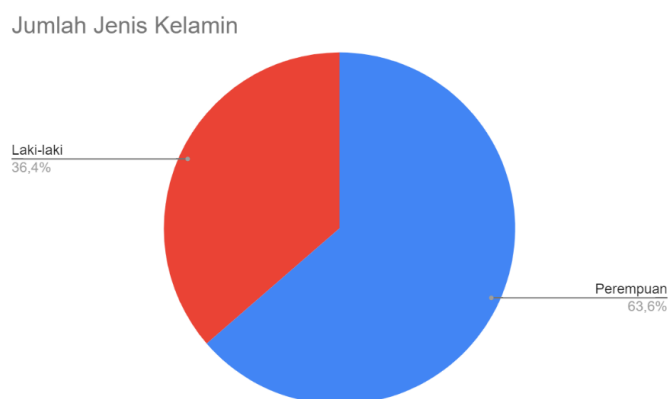


Figure 4: Gender of Respondents

In Figure 4. Above, respondents with gender criteria found that 63.6% of Bluebox application users are women from the results of distributing questionnaires to 100 respondents.

Occupation of Respondents

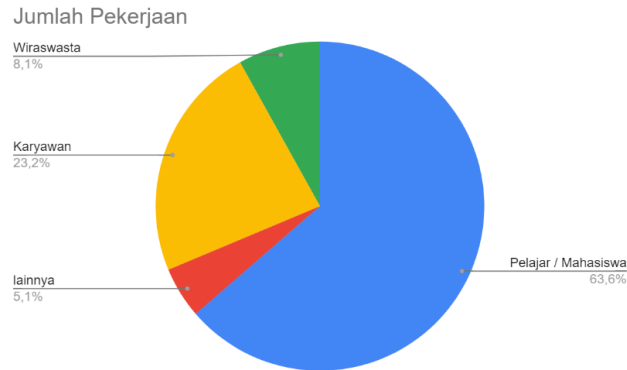


Figure 5. Job Criteria

In Figure 5, job criteria from the results of distributing questionnaires to 100 respondents, 63.6% who have a high percentage of using the Bluebox application are students.

User Satisfaction Level Analysis

Usability (X1)

Table 4. Results of data calculation of Usability variables (X1)

Usability (X1)					
Scale	SS	S	N	TS	STS
Score	5	4	3	2	1
Total Answer	85	205	43	11	0
Questionnaire score	425	820	129	22	0
Average satisfaction	4,06				

The results of data calculations on the Usability variable of the Bluebox application show that the average user satisfaction is on a high scale with a value of 4.06, indicating that the majority of users are **satisfied** with the quality of usability, and the ease of users in operating the Bluebox application.

Information Quality (X2)

Table 5. Data calculation results 11311 ariable Information Quality (X2)

Information Quality (X2)					
Scale	SS	S	N	TS	STS
Score	5	4	3	2	1
Total Answer	206	230	77	14	3
Questionnaire score	1.030	920	231	28	3
Average satisfaction	4,17				

The results of data calculations on 11311 ariable Information Quality bluebox application shows the average user satisfaction is on a high scale value of 4.17, this indicates that users are very satisfied with the quality of information in the Bluebox

application, the feasibility of the information displayed and the accuracy of the information in the Bluebox application.

Service Interaction (X3)

Table 6. Results of data calculation for Service Interaction variables (X3)

Service Interaction (X3)					
Scale	SS	S	N	TS	STS
Score	5	4	3	2	1
Total Answer	225	323	120	19	6
Questionnaire score	1,125	1,292	360	38	6
Average satisfaction	4,07				

The results of data calculations on the Service Interaction variable of the bluebox application show that the average user satisfaction is on a high scale with a value of 4.07, this shows that users are satisfied with the service interactions provided, users experience responsive and helpful service in the Bluebox application.

Timeliness (X4)

Table 7. Data calculation results 1131211312 systeme Timeliness (X4)

Service Interaction (X3)					
Scale	SS	S	N	TS	STS
Score	5	4	3	2	1
Total Answer	154	211	75	20	1
Questionnaire score	770	844	225	40	1
Average satisfaction	4,08				

The results of data calculations on 1131211312 systeme Timeliness of bluebox applications show that the average user satisfaction is on a high scale with a value of 4.08, this indicates that users are satisfied with the timeliness of services, 11312 system provides information and services on time according to user expectations.

Average User Satisfaction

Table 8. Results of Average User Satisfaction

Variables	Average User Satisfaction	Description
Usability	4,06	Satisfied
Information Quality	4,17	Very satisfied
Service Interaction	4,07	Satisfied
Timeliness	4,08	Satisfied
Total average	4,095	Satisfied

The total average user satisfaction of all variables as a whole is 4.095, indicating that users as a whole are **satisfied with** the Bluebox application using the End User Computing Satisfaction and Webqual 4.0 methods.

Research Testing Results

Outer Model Measurement Test Results

Convergent Validity

Convergent validity or convergent validity test is seen in the Loading Factor value in each indicator with the value determined by the Rule of Thump, which is 0.7 or more (Zuhra Reiqifakh Paguini & Bonda Sisephaputra, 2024). The following is the acquisition of the results of Outher Loadings in the study as follows:

Table 9. *Outer Loadings* Results

Variables	Indicator	Outer Loadings
X1	X1.1	0.920
X1	X1.2	0.918
X1	X1.3	0.905
X2	X2.1	0.754
X2	X2.2	0.802
X2	X2.3	0.761
X2	X2.4	0.837
X2	X2.5	0.776
X3	X3.1	0.798
X3	X3.2	0.812
X3	X3.3	0.738
X3	X3.4	0.774
X3	X3.5	0.814
X3	X3.6	0.818
X4	X4.1	0.831
X4	X4.2	0.805
X4	X4.3	0.835
X4	X4.4	0.787
Y	Y.1	1.000

Based on the results of data processing using SmartPLS 4.1.0.2, it shows that all indicators on each variable in this study have a loading factor value greater than 0.70 so that they can be declared valid. The convergent validity test is seen from the measurement of avarage variance extracted (AVE) with an ideal value of more than 0.5 so that it can be said to meet the value of a good outer model. The following are the results of the measurement of avarage variance extracted (AVE) in this study:

Table 10. Avarage Variance Extracted Results

Variables	AVE
X1 Usability	0.836
X2 Information Quality	0.619
X3 Service Interaction	0.629
X4 Timeliness	0.664

Overall, the AVE value for all variables is above the minimum threshold of 0.50, which means it shows that the constructs measured have good convergent validity. Thus, it can be concluded that all variables tested have sufficient ability to explain the variance in the data.

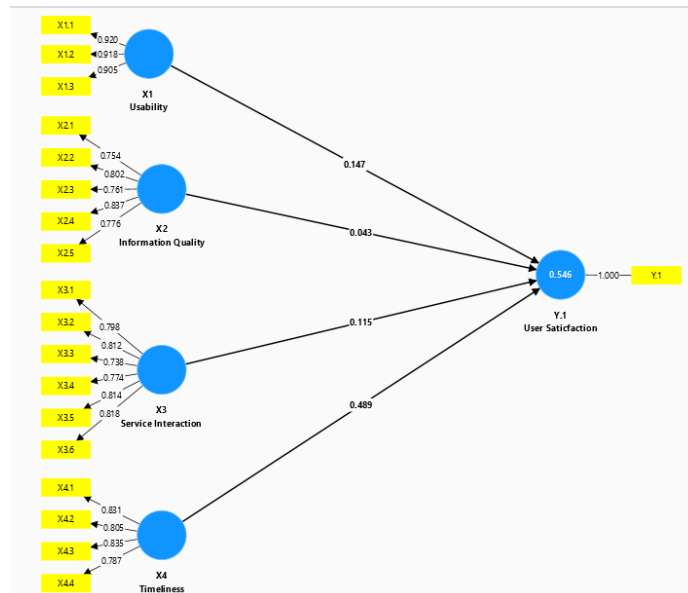


Figure 6. SmartPLS Conceptual Framework Model version 4.1.0.2

Discriminant Validity

Discriminant validity or discriminant validity test can be measured from the Cross Loading value where 11314 ariable11314 which measures 11314 ariable must have a higher correlation value than the correlation value of other 11314 ariable, and the value of Cross Loading must be > 0.7 or greater. The following are the results of cross loading in this study:

Table 11. Cross Loading Results

Code	X.1	X.2	X.3	X.4	Y
X1.1	0.920	0.633	0.591	0.637	0.502
X1.2	0.918	0.631	0.646	0.595	0.585
X1.3	0.905	0.708	0.602	0.620	0.510
X2.1	0.395	0.754	0.630	0.621	0.441
X2.2	0.455	0.802	0.745	0.717	0.552
X2.3	0.653	0.761	0.629	0.681	0.560
X2.4	0.724	0.837	0.702	0.736	0.598
X2.5	0.553	0.776	0.685	0.616	0.447
X3.1	0.462	0.656	0.798	0.688	0.507
X3.2	0.522	0.663	0.812	0.643	0.498
X3.3	0.631	0.650	0.738	0.632	0.593
X3.4	0.541	0.679	0.774	0.704	0.523
X3.5	0.491	0.730	0.814	0.674	0.498

X3.6	0.526	0.719	0.818	0.745	0.555
X4.1	0.515	0.692	0.719	0.831	0.662
X4.2	0.571	0.709	0.627	0.805	0.601
X4.3	0.563	0.721	0.707	0.835	0.499
X4.4	0.553	0.687	0.750	0.787	0.572
Y.1	0.585	0.669	0.671	0.724	1.000

Based on the cross loading results obtained, it shows that the correlation value of the construct with the indicator is greater than the correlation value between other constructs. All indicators on variables X1 (Usability), X2 (Information Quality), X3 (Service Interaction) and X4 (Timeliness) have a correlation value > 0.7 and greater than the correlation value of other constructs. So that all indicators are declared **valid** based on discriminant validity.

Composite Reliability

Test composite reliability by testing the reliability value of a construct from indicators. A composite reliability has an ideal value of more than 0.7, but if it has a value between 0.6 to 0.7 it is still acceptable. The following are the results of the following composite reliability.

Table 12. Composite Reliability Results

Variables	Cronbach's alpha	Composite reliability (rho a)	Composite reliability (rho c)	AVE
X1	0.902	0.909	0.939	0.836
X2	0.847	0.854	0.890	0.619
X3	0.882	0.882	0.910	0.629
X4	0.832	0.837	0.888	0.664

The results of the composite reliability in this research analysis found that all variables have a value between 0.6 to more than 0.7 and a Cronbach's alpha value of more than 0.6 so that it can be concluded that all variables are acceptable because they have good reliability results. (R. Hamid, 2019)

Inner Model Measurement Test Results

Path Coefficient Test

The path coefficient test is carried out in order to see the significance of the relationship between variables. The value of the path coefficient can be said to have an influence on a model with a value above 0.1 so that the path can be declared influential if the coefficient test value has results above 0.1. The following are the results of the path coefficient test in the study:

Table 13. Path Coefficient Test Results

Variables	Path Coefficient
X1.Usability -> Y.User Satisfaction	0.113
X2.Information Quality -> Y.User Satisfaction	0.851
X3.Service Interaction -> Y.User Satisfaction	0.574
X4.Timeliness -> Y.User Satisfaction	0.021

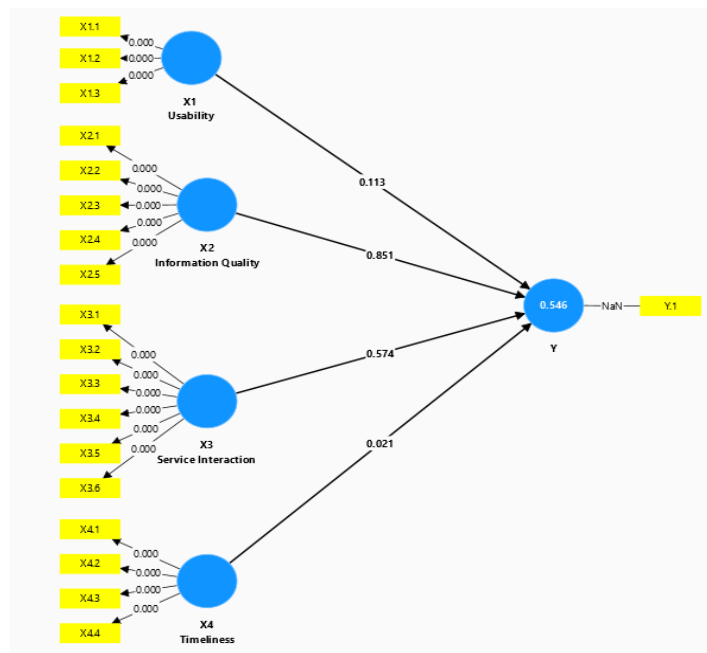


Figure 7. Conceptual Model *Path Coefficient*

Test Coefficient of Determination (R^2)

Testing the coefficient of determination in order to assess the size of the independent variable which is considered to have an effect on the dependent variable. There is one level in the measurement of the coefficient of determination, namely with a value of 0.67 it can be declared strong, a value of 0.33 can be said to be moderate, and a value of 0.19 or below indicates a variant with a weak level. The following are the results of the coefficient of determination test:

Table 14. Coefficient of Determination Test Results (R^2)

Variables	R-Square	R-Square adjusted
Y (User Satisfaction)	0.546	0.527

The coefficient of determination test shows the result that the R-square value of the User Satisfaction (Y) variable has a value of 0.546 so that it can be stated as Moderate, indicating that the User Satisfaction (Y) variable is influenced by 54.6% by other variables.

Predictive Relevance Test (Q^2)

The predictive relevance test is carried out in order to get evidence if a certain variable can have a relationship or relationship in predictive relevance has a value with a measurement limit of more than 0, but if the value is below 0 then the model does not have predictive relevance. The following are the results of the predictive relevance test:

Table 15. Predictive Relevance Test Results (Q^2)²

Dependent Variable	Q^2	Description
Y (User Satisfaction)	0.546	Predictive Relevance

Effect Size Test (f^2)²

The effect size test has provisions that apply, namely with a value of 0.02 said to have a small influence, then a value of 0.15 with a medium influence, and for a value of 0.35 has a large influence. The following are the results obtained from the effect size test:

Table 16. Effect Size Test Results (f^2)²

Relationship between variables	F-square	Ket
X1.Usability -> Y.User Satisfaction	0.147	Medium
X2.Information Quality -> Y.User Satisfaction	0.043	Small
X3.Service Interaction -> Y.User Satisfaction	0.115	Small
X4.Timeliness -> Y.User Satisfaction	0.489	Great

Overall, from the results of the Effect size test, it was found that Timeliness is the most influential factor on user satisfaction, followed by Usability with a medium effect. Meanwhile, Information Quality and Service Interaction have little effect on user satisfaction.

Hypothesis Test

This hypothesis test is carried out in order to determine the effect of each variable using the bootstrapping method in SmartPLS version 4.1.0.2 In PLS, the hypothesis can be accepted and rejected based on the significant value of the P-value. This study uses a significant level of 0.05 or 5%, if the t-value has a value greater than 1.6 and the p-value has a value smaller than 0.05, the hypothesis results can be accepted (Jam'ul Fawaid & Khairani Ratnasari Siregar, 2021). It can be seen below the bootstrapping results obtained:

Table 17. Bootstrapping Test Results

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (IO/STDEV)	P values
X1 -> Y	0.147	0.140	0.093	1.586	0.113
X2 -> Y	0.043	0.085	0.226	0.188	0.851
X3 -> Y	0.115	0.126	0.204	0.562	0.574
X4 -> Y	0.489	0.441	0.211	2.314	0.021

The following can see the results of testing the hypothesis of this study between the independent variable and the dependent variable as follows:

3.4.2.6 Hypothesis Test Results

Table 18: Hypothesis Test Results

Hypothesis	Description
X1.Usability -> Y.User Satisfaction	Rejected

X2.Information Quality -> Y.User Satisfaction	Rejected
X3.Service Interaction -> Y.User Satisfaction	Rejected
X4.Timeliness -> Y.User Satisfaction	Accepted

The test results obtained on the inner model show that H4 can be accepted so that the Timeliness variable has a significant influence on User Satisfaction in the Bluebox application. Meanwhile, H1, H2, and H3 are rejected, which means that the Usability, Information Quality and Service Interaction variables do not show a significant effect on User Satisfaction with a significance level of 0.05.

CONCLUSION

This study measures the effect of service quality of the Bluebox e-commerce application on user satisfaction using the Webqual 4.0 and End User Computing Satisfaction (EUCS) methods. The test results show that the level of user satisfaction is in the "satisfied" category with an average value of 4.095. Among the four variables tested (usability, information quality, service interaction quality, and timeliness), only the timeliness variable has a significant influence on user satisfaction (P Values <0.05). However, overall, the four variables still have a positive influence, indicating that improving usability, information quality, service interaction quality, and timeliness need to be the focus of application development to increase user satisfaction.

Based on the research results, some development suggestions for Bluebox include improving the user interface (UI) and user experience (UX), maintaining information quality and relevance, improving customer service responsiveness, and ensuring timeliness in delivery. In addition, regularly collecting feedback, developing new features, and continuously innovating are also important steps to improve user experience. This research not only benefits Bluebox but also serves as a reference for other e-commerce app developers in understanding and meeting users' needs to increase their satisfaction.

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