

THE EFFECT OF PRODUCT QUALITY AND E-TOLL SERVICE QUALITY ON CUSTOMER SATISFACTION IN. JASA MARGA (PERSERO) TBK JAGORAWI BRANCH

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Abstract

This study aims to determine the effect of E-Toll product quality on customer satisfaction, the influence of E-Toll service quality on customer satisfaction and knowing the effect of product quality and service quality on customer satisfaction PT. Jasa Marga (Persero) TBK Jagorawi Branch. The type of research used by researchers is quantitative research with survey methods. The research site was at the toll road of Taman Mini Indonesia Indah, East Jakarta in August 2018. The population target in this research was all toll road customers who came and paid tolls at the Cimanggis 3 toll gate and the number of samples was 80 respondents. Analysis of data in this study using SPSS, Version 22. The results of the study concluded that product quality has a significant effect on customer satisfaction, service quality has a significant effect on customer satisfaction, product quality and service quality have a significant effect on customer satisfaction PT. Jasa Marga (Persero) TBK Jagorawi Branch.

Keywords: Product Quality, Service Quality, Customer Satisfaction

1. INTRODUCTION

Toll road services have now developed with a variety of increasingly sophisticated and digital technology features. Toll road has innovated with technology to become Electronic Toll (E-Toll). This service allows toll road users to pay tolls by using only cards. Toll road partners work with other financial institutions to provide more modern E-Toll facilities through the development of GTO services (Automatic Toll Substation). With E -Toll services, toll road users can simply cross the GTO (Automatic Toll Gate).

Service in the implementation of the E-Toll pass in fact cannot function as expected. E-Toll, which is expected to reduce congestion, sometimes results in congestion as we can see during rush hour. This is caused by various things, among others, the operators of toll road service providers require not a small amount of money to provide better infrastructure such as costs to purchase equipment, maintenance costs for equipment, and other costs, as well as the state of the machine which is sometimes suddenly damaged (error) in the E -Toll device, the distance of the E-Toll (Reader) card reader with the vehicle is not suitable or too far which makes it difficult for toll road customers to attach the E-Toll card and the officers are less alert to the problem, thus slowing down the transaction.

2. LITERATURE REVIEW

2.1 Quality of Product

Product has an important meaning for the company because without the product, the company will not be able to do anything from its business. The buyer will buy the product if it feels suitable, because the product must be adjusted to the wants or needs of the buyer so that

product marketing is successful. Kotler and Armstrong (2008) stated that "Product quality is the ability of a product to perform its functions which include durability, reliability,

accuracy, ease, operation and repairs and other attributes". When a product has been able to carry out its functions it can be said as a product that has good quality.

According to Kotler (2008), most products are provided on one of the four levels of quality, namely; low quality, medium average quality, good quality, and very good quality. Some of the above attributes can be measured objectively. However, from the marketing point of view, quality must be measured in terms of the perceptions of buyers about the quality of these products. According to Fandy Tjiptono (2008), the dimensions of product quality include performance (performance), additional features (features), conformity with specifications (conformance to specifications), reliability (durability), durability (durability), aesthetics (asthetic), perceived quality (perceived quality) and ease of serviceability.

2.2 Service Quality

In the perspective of TQM (Total Quality Management) quality is widely seen, namely not only the aspects of the results emphasized, but also includes processes, environment and people. Understanding the quality of services or services is centered on efforts to meet the needs and desires of customers and their delivery provisions to keep up with customer expectations.

According to Lewis and Booms (in Tjiptono, 2012: 157) defining service quality is simple, namely a measure of how well the level of service provided is in accordance with customer expectations, meaning that service quality is determined by the ability of certain companies or institutions to meet needs expected or desired based on customer / visitor needs. Parasuraman, Zeithaml, and Berry in Saleh (2010: 103) successfully identified ten main factors that determine service quality, namely Reliability, Responsiveness, Competence, Accessibility, Courtesy, Communication, Credibility, Security, Understanding / Knowing the customer, and tangibles.

2.3 Customer Satisfaction

Developing a satisfying service delivery mechanism for customers needs to be done, according to Tjiptono (2011: 210), satisfaction is a measure of the performance of "total product" of an organization compared to a range of customer needs (Costumer requirements). Customer satisfaction is not an absolute concept, but is relative or depends on what the

customer expects. In addition, Tjiptono (2011: 137), mentions the basic principle that underlies the importance of customer satisfaction measurement is "doing best what matters most customer" is to do the best most important aspects for customers.

Until now the survey was the most popular and growing method in the literature on measurement of customer satisfaction according to Tjiptono (2011: 210), which is "importance performance analysis" which uses importance ratings and performance ratings. According to Moenir quoted in Saleh (2010: 125), so that services can destroy people or groups of people served, there are four basic requirements, namely polite behavior, how to convey something related to what should be received by the person concerned, time the right delivery, and hospitality.

3. RESEARCH METHODS

3.1 Type of Research

The type of research used by researchers is quantitative research to explain a problem whose results can be generalized and require a representative sample of the entire population and

operational concepts. The method used is the survey method and the specifications of this study are associative functional which aims to determine the influence or relationship between two or more variables.

3.2 Population and Samples

The population in this research is all toll road customers who come and pay tolls at Cimanggis toll gate 3. To determine the sample using simple random sampling technique because the taking of sample members from the population is done randomly regardless of the strata in the population with the formula Fraenkel & Wallen (1993: 92) which suggests, the minimum sample size for correlational research is 50. In this study the sample was 80 respondents.

3.3 Data Collection Techniques

The technique used in collecting data in this study is Interview, Questionnaire, Library Study.

3.4 Thinking Framework

Based on the above operational variables, the research model is formed as shown below:

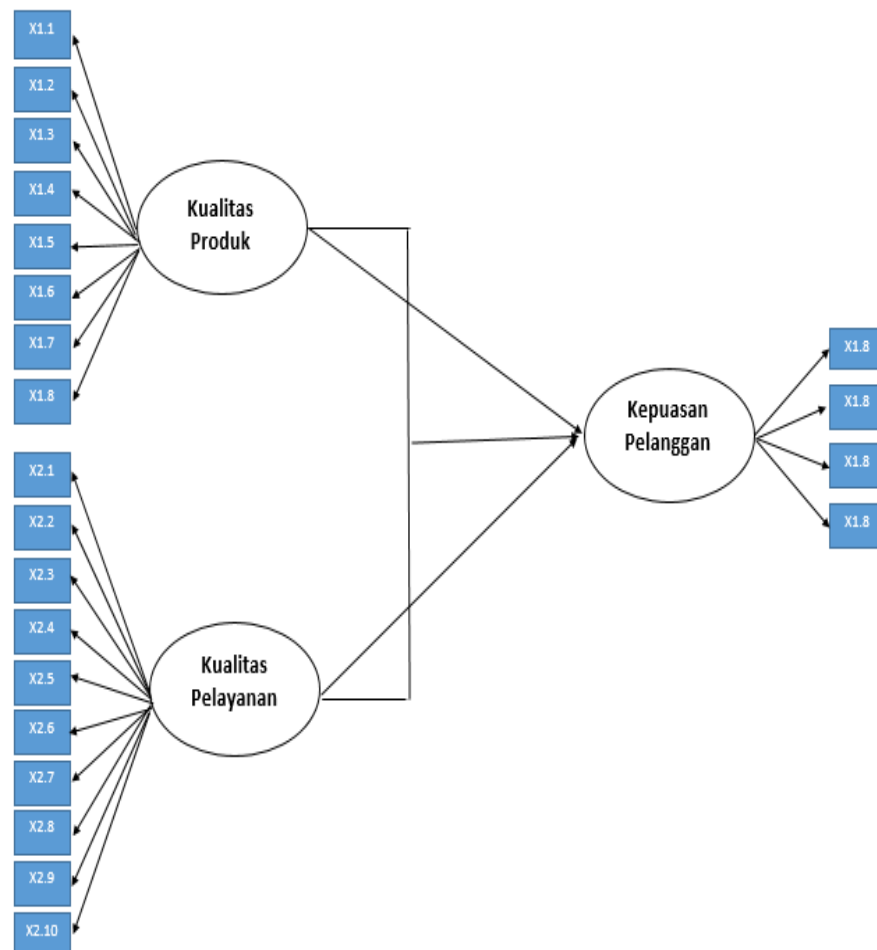


Figure. 1 Thinking Framework

3.5 Data Analysis Techniques

The analysis technique uses SPSS to refer to the Correlation and Determination Coefficients, Linear Multiple Regression, Anova Test (f Test) and Regression Coefficient Test (t Test).

4. ANALYSIS AND DISCUSSION

4.1 Characteristics of Respondents

a. Based on Gender

Based on the above data regarding the data on the characteristics of respondents who have filled out the research questionnaire, it was found that participants were male (70%) and female (30%).

Table. 1 Characteristics of Respondents based on Gender

Frequency			Percent	Valid Percent	Cumulative Percent
Valid	Man	56	70.0	70.0	70.0
	Woman	24	30.0	30.0	100.0
	Total	80	100.0	100.0	

Source: Processed Data from SPSS, Version 22

b. Age Based Respondents

Based on the above data regarding the characteristics of respondents who filled out the research questionnaire, the age range of participants in this study ranged from ages 18–30 years (41.3%), ages 31–40 years (41.3%), ages 41–50 years (17 , 5%).

Table. 2 Age Characteristics of Respondents

Frequency			Percent	Valid Percent	Cumulative Percent
Valid	18-30 years	33	41.3	41.3	41.3
	31-40 years	33	41.3	41.3	82.5
	41-50 years	14	17.5	17.5	100.0
	Total	80	100.0	100.0	

c. Based on education

Based on the above data regarding the characteristics of respondents who filled out the research questionnaire, participants had junior high school education (18.8%), high school (63.8%), Diploma (7.5%), Bachelor (8.8%), and Masters (1 , 3%). The number of participants in this study were 80 participants.

Table. 3 Characteristics of Respondents based on Education

Frequency			Percent	Valid Percent	Cumulative Percent
Valid	Junior High	15	18.8	18.8	18.8
	School				
	High School	51	63.8	63.8	82.5
	DIPLOMA	6	7.5	7.5	90.0
	Bachelor	7	8.8	8.8	98.8
	Master	1	1.3	1.3	100.0
	Total	80	100.0	100.0	

Source: Processed Data from SPSS, Version 22

4.2 Test Validity

a. Test the Quality Validity of Product Quality (X1)

Test validity of the questionnaire statement variable X1 (Product Quality) shows that all statements have a value of r count greater than r table so that all statements in the questionnaire are declared valid. Thus all statements deserve to be used as instruments for variable X1.

b. Test the Validity of Variable Service Quality (X2)

The validity test of the questionnaire statement variable X2 (Service Quality) shows that all statements have a value that is greater than r table so that all statements in the questionnaire are declared valid. Thus all statements deserve to be used as instruments for variable X2

c. Test Variable Validity of Customer Satisfaction (Y)

Test the validity of the questionnaire statement variable Y (Customer Satisfaction) above it can be seen that all statements have a value of r count greater than r table so that all statements in the questionnaire are declared valid. Thus all statements deserve to be used as instruments for variable Y.

4.3. Test Reliability

a. Product Quality Variable Reliability

From the results of the reliability test, 15 statements for the X1 variable above obtained the Cronbach's Alpha value of 0.940. This number is above 0.60. Thus, the questionnaire statements meet the reliability requirements.

b. Service Quality Variable Reliability (X2)

From the results of the reliability test of 15 statements for the X2 variable above, the Cronbach's Alpha value is 0.907, this number is above 0.60. Thus, the questionnaire statements meet the reliability requirements.

c. Reliability of Customer Satisfaction

From the results of the reliability test of 15 statements for the Y variable above, the Cronbach's Alpha value is 0.892, this number is above 0.60. Thus, the questionnaire statements meet the reliability requirements.

5. HYPOTHESIS AND DISCUSSION TESTING

5.1 Correlation Test

The results of calculating the correlation between independent variables and dependent variables can be seen from table below:

a. Relationship of Product Quality (X1) with Customer Satisfaction (Y)

Based on the results of Pearson correlation above, it is known that the correlation value between variables X1 and Y is 0.264 with a significance level of 0.000 ($p < .05$). based on this value, it can be said that the variables X1 and Y have a positive correlation between the variables of Product Quality (X1) and Customer Satisfaction (Y).

Table. 4 Product Quality Correlation Test (X1) Against Customer Satisfaction (Y)

Correlations			
		X1	Y
X1	Pearson Correlation	1	.264 ^{**}
	Sig. (2-tailed)		.018
	N	80	80
Y	Pearson Correlation	.264 ^{**}	1
	Sig. (2-tailed)	.018	
	N	80	80
*. Correlation is significant at the 0.05 level (2-tailed).			

Source: Processed Data From SPSS, Version 22

b. Relationship of Service Quality (X2) with Customer Satisfaction (Y)

Based on the results of Pearson correlation above, it is known that the correlation value between the variables X2 and Y is 0.136 with a significance level of 0.000 ($p < .05$). based on this value, it can be said that the variables X2 and Y have a positive correlation between the variables of Service Quality (X2) with Customer Satisfaction (Y).

Table. 5 Service Quality Variable Correlation Test (X2) Against Customer Satisfaction (Y)

Correlations			
		X2	Y
X2	Pearson Correlation	1	.136
	Sig. (2-tailed)		.230
	N	80	80
Y	Pearson Correlation	.136	1
	Sig. (2-tailed)	.230	
	N	80	80

Source: Processed Data from SPSS, Version 22

c. Relationship of Product Quality (X1) and Service Quality (X2) to Customer Satisfaction (Y)

Based on the results of the correlation test in the table above, it can be seen that the correlation value between the variables X2 and the Y variable is 0.351, with a significance level of 0.136 ($p < 0.05$). by considering the correlation and significance value, it can be said that the variable X2 has a significant positive correlation with variable Y.

Table. 6 Product Quality (X1) and Service Quality (X2) Correlation Test on Customer Satisfaction (Y)

Correlations				
		X1	X2	Y
X1	Pearson Correlation	1	.351 ^{**}	.264 [*]
	Sig. (2-tailed)		.001	.018
	N	80	80	80
X2	Pearson Correlation	.351 ^{**}	1	.136
	Sig. (2-tailed)	.001		.230
	N	80	80	80
Y	Pearson Correlation	.264 [*]	.136	1
	Sig. (2-tailed)	.018	.230	
	N	80	80	80
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Source: Processed Data from SPSS, Version 22

5.2 Determination Coefficient Test

The value or coefficient of determination obtained is $0.2682 \times 100\% = 7.2\%$. This means that the dependent variable of Customer Satisfaction (Y) is influenced by the independent variable of Product Quality (X1) of 7.2% and the remaining 92.8% is influenced by other variables.

Table. 7 Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.268 ^a	.072	.048	5.43965
a. Predictors: (Constant), X2, X1				

Source: Processed Data from SPSS, Version 2

5.3 Test for Multiple Linear Regression Coefficients

Based on the table above the equation is obtained as follows:

$$(Y) = 42,178 + 0,161 (X1) + 0,045 (X2)$$

From the results of the multiple linear regression equation each variable can be interpreted as follows:

- The constant of 42,178 states that if the Product Quality and Service Quality variable is 0 (zero) and there is no change, the Customer Satisfaction value will increase by 42,178.

b) The value of the variable X1, namely Product Quality has a regression coefficient of 0.161. This means that if the Product Quality variable increases by one unit, while Service Quality is constant, then Customer Satisfaction will increase by 0.161.

c) The value of the variable X2 namely Service Quality has a regression coefficient of 0.045. This means that if Service Quality increases by one unit, while Product Quality is constant, Customer Satisfaction will increase by 0.045.

Table. 8 Test Multiple Linear Regression Equations

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.178	5.418		7.785	.000
	X1	.161	.076	.247	2.109	.038
	X2	.045	.108	.049	.419	.677
a. Dependent Variable: Y						

Source: Processed Data from SPSS, Version 22

5.4 Test Simultaneous Hypothesis (Test F)

Based on the table above it can be seen that the value of Fcount is 2.987 with a significant value of 0.056. Product Quality and Service Quality do not have a significant regression line to Customer Quality.

Table. 9 Simultaneous Coefficient of Regression Test (F Test)

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	176.783	2	88.391	2.987	.056 ^b
	Residual	2278.417	77	29.590		
	Total	2455.200	79			
a. Dependent Variable: Y						
b. Predictors: (Constant), X2, X1						

Source: Processed Data from SPSS, Version 22

5.5 Partial Hypothesis Test (t Test)

Based on the table above, the following results are obtained:

a). Product Effect (X1) on Customer Satisfaction (Y)

From these results, it can be seen that the variable X1 has a contribution to Y. The positive value of t indicates that the variable X1 has a relationship with Y. So it can be concluded that the effect of Product Quality has a significant effect on Customer Satisfaction.

b). Service Quality (X2) to Customer Satisfaction (Y)

From these results it can be seen that the variable X2 has a contribution to Y. The value of positive t indicates that the variable X2 has a relationship with Y. So it can be concluded that Service Quality has a significant effect on Customer Satisfaction.

Table. 10 Regression Efficiency Test (Test t) Effect of Products and Services on Customer Satisfaction

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.178	5.418		7.785	.000
	X1	.161	.076	.247	2.109	.038
	X2	.045	.108	.049	.419	.677
a. Dependent Variable: Y						

Source: Processed Data from SPSS, Version 22

6. DISCUSSION OF RESEARCH RESULTS

The influence of Product Quality and Service Quality variables on Customer Satisfaction does not have a significant effect. In the F test it was found that Fcount < Ftable (2.987 < 3.11) with these results indicates accepting Ho and rejecting Ha. This means that it is concluded that Product Quality and Service Quality simultaneously do not have a significant effect on Customer Satisfaction.

In the partial hypothesis test (t test) it was found the fact that there was no significant effect between the Product Quality variable (X1) on Customer Satisfaction which was indicated by a tcount greater than t table ie, 2,109 > 1,664 so that the hypothesis accepted Ho and rejected Ha. This means that partially, Service Quality (X2) has a significant influence with Customer Satisfaction (Y), in the partial test of the Service Quality variable on Customer Satisfaction found the same fact which shows the hypothesis accepting Ho and rejecting Ha. This means that partially, Service Quality (X2) cannot have a significant effect with Customer Satisfaction (Y) marked by Customer Satisfaction (Y) marked by tcount > ttabel yakni 2,109 > 1,664.

7. CONCLUSIONS AND SUGGESTIONS

Conclusion

- a. Based on the testing criteria of the hypothesis that accepting Ho and rejecting Ha. That is partially, Product Quality (X1) does not have a significant value on Customer Satisfaction (Y). So it can be concluded that there is no significant effect between Product Quality on Toll Road Customer Satisfaction.
- b. Based on the testing criteria the hypothesis accepts Ho and rejects Ha. This means that Service Quality (X2) partially does not have a significant effect on Customer Satisfaction (Y).
- c. Product Quality and Service Quality variables do not have significant regression and can not have a significant effect on Customer Satisfaction that is by receiving Ho and rejecting Ha in both tests

Suggestions

- a. Improve the quality of E-Toll so that it can function effectively, so it can reduce congestion on the toll road.
- b. Improving management performance that affects toll road customer satisfaction.
- c. It is best to try between the ATM card and the E-Toll card connected and provide a place to fill the E-Toll balance where it is strategically located (Gas station / Rest area) so that toll road customers are easy to reach.

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