



The Influence of E-Service Quality on Customer Loyalty Mediated by Customer Satisfaction Among App-Based Transportation Users in West Java, Indonesia

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Abstract. This article comprehensively delves into and analyzes the factors influencing Grab users, particularly in West Java, regarding their retention and the services Grab provides to its customers. Through an analytical approach, this research aims to serve as a reference for maintaining and enhancing customer satisfaction, customer loyalty, and e-service quality. The method employed is quantitative, classified as a cross-sectional or one-shot study. Validity and reliability tests are conducted, and data are analyzed using the Ordinary Least Squares (OLS) technique. Descriptive analysis of the data obtained regarding e-service quality, customer satisfaction, and customer loyalty collectively indicates a very high category. E-service quality significantly and positively influences customer satisfaction; e-service quality significantly and positively influences customer loyalty, and customer satisfaction influences customer loyalty. After conducting the research analysis, the results show that customer satisfaction mediates the relationship between e-service quality and customer loyalty. This demonstrates that consumer satisfaction with the quality of service provided impacts the increase in consumer loyalty.

Keywords: Customer Satisfaction; Customer Loyalty; E-Service Quality

1 Introduction

Technological advancements have been evident in Indonesia, which has become one of the countries with the world's most significant internet user population. According to a report by We Are Social, there were 204.7 million internet users in Indonesia as of January 2022, representing a 1.03% increase compared to the previous year, which recorded 202.6 million users. This indicates a significant increase in national internet penetration over the past few years [1]. Internet-based transportation services provide convenience ranging from booking, route monitoring, and payment to service rating [2].

According to the 2022 top brand index, there was a 4.9% decrease in Grab's online transportation users from 2019. In 2020, there was a 0.4% increase, but in 2021, there was a further decline of 3.8%, and in 2022, another 3% decrease. The decline in users can be attributed to frequent errors in the application, leading Grab customers to feel dissatisfied, thus diminishing their loyalty to the company's services. This reflects a decrease in customer loyalty towards Grab's online transportation services. To enhance

customer loyalty, Grab must improve service quality and customer satisfaction [2]. One of the factors influencing customer loyalty is e-service quality.[3], service quality refers to the characteristics of goods or services that demonstrate their ability to satisfy explicit and implicit customer needs. For companies operating in the service sector, providing quality customer service is essential for success. However, in this case, service quality is delivered through online media.

Good e-service quality generates customer satisfaction. By providing excellent customer service, companies can create satisfaction and increase profitability. Customer satisfaction is also crucial for Grab to assess the quality of its services amidst intense competition [4] Previous studies have shown that e-service quality influences customer loyalty [5], while others have found significant effects of e-service quality and price on customer loyalty [6], although some studies suggest otherwise [7]. Moreover, [3] suggest that e-service quality affects customer satisfaction, while other studies argue otherwise [5]. As new research emerges, applications like Grab will continue addressing customer retention shortcomings. This study aims to comprehensively analyze the factors influencing Grab users' persistence, particularly in West Java, and evaluate the services Grab provides its customers. Through analytical approaches, this research aims to serve as a reference for maintaining and improving customer satisfaction, customer loyalty, and e-service quality.

2 Methods

This study employs a quantitative method to provide accurate measurements of behavior, knowledge, opinions, or attitudes [2]. The research involves sampling from male and female consumers who have visited and used the Grab online transportation application and reside in West Java. For the sample in this study, based on the high level of Grab online transportation application users, a minimum of 100 respondents were selected for the research questionnaire. The criteria for the sample include (1) residing in West Java and (2) having visited and used the Grab online transportation application. Data collection is conducted using a questionnaire. Meanwhile, data collection in this research is classified as cross-sectional or a one-shot study, meaning that data are collected within a short period. Validity and reliability tests are employed, and the analysis uses the Ordinary Least Squares (OLS) technique.

3 Results and Discussion

The survey results in Tables 1 and 2 indicate that most respondents are male (62%) and female (38%). The age distribution shows that Grab online application users are as follows: < 30 years old (37%), 31- 40 years old (32%), 41-50 years old (20%), and > 50 years old (11%).

3.1 Validity Test

Validity testing assesses the accuracy of conclusions or interpretations drawn from the values of a test. A valid instrument has a calculated value (r-value) greater than the critical value (critical r-value) with degrees of freedom (df) equal to n-2, where n represents the minimum sample size. Thus, with $df=90-2=88$ and a significance level of 5% or 0.05, the critical r-value (product-moment) generated is 0.207. The criterion used to determine the validity of an instrument is that if the calculated r-value is greater than the critical r-value, the instrument is considered valid; otherwise, if the calculated r-value is less than the critical r-value, the instrument is considered invalid. The following are the validity test results for E-Service Quality, Customer Satisfaction, and Customer Loyalty.

Table 1. Validity test Result of *E-Service Quality (X)*

<i>Statement</i>	<i>R count</i>	<i>R table</i>	<i>Note</i>
<i>X1</i>	0,475		Valid
<i>X2</i>	0,675		Valid
<i>X3</i>	0,344		Valid
<i>X4</i>	0,730		Valid
<i>X5</i>	0,535		Valid
<i>X6</i>	0,243	0,197	Valid
<i>X7</i>	0,216		Valid
<i>X8</i>	0,634		Valid
<i>X9</i>	0,355		Valid
<i>X10</i>	0,282		Valid
<i>X11</i>	0,542		Valid
<i>X12</i>	0,264		Valid

Based on the validity test results conducted on the 12 statement items, all statement items are declared valid because they have a calculated r-value greater than the critical r-value. From this information, all statement items can be used as questionnaire items in the study on the variable of e-service quality. The validity test results are represented by the calculated r-value obtained from the correlation coefficient of the product moment. Based on the information in the table, it is known that all statements on the questionnaire are categorized as valid because all calculated R-values for each statement are greater than the critical R-value.

Table 2. Validity test Result of *Customer Satisfaction (Z)*

<i>Statement</i>	<i>R Count</i>	<i>R table</i>	<i>Note</i>
<i>Z1</i>	0,948		Valid
<i>Z2</i>	0,473		Valid
<i>Z3</i>	0,928	0,197	Valid
<i>Z4</i>	0,760		Valid
<i>Z5</i>	0,948		Valid

Based on the validity test results of the 5 statement items, all statement items are considered valid because their calculated R-values are greater than the critical R-value. This means that all statement items can be used in the questionnaire for the study on customer satisfaction. The validity test results are represented by the calculated r-values obtained from the correlation coefficient of the product moment. According to the information in the table, all statements on the questionnaire are categorized as valid because all calculated R-values for each statement are greater than the critical R-value.

Table 3. Validity test Result of *Customer Loyalty* (Y)

<i>Statement</i>	<i>R Count</i>	<i>R table</i>	<i>Note</i>
<i>Y1</i>	0,450		Valid
<i>Y2</i>	0,732	0,197	Valid
<i>Y3</i>	0,571		Valid
<i>Y4</i>	0,396		Valid

Based on the validity test results of the 4 statement items, all statement items are deemed valid because their calculated R-values are greater than the critical R-value. This indicates that all statement items can be used in the questionnaire for the study on customer loyalty. The validity test results are represented by the calculated r-values obtained from the correlation coefficient of the product moment. According to the information The table shows that all statements on the questionnaire are categorized as valid because all calculated R-values for each statement are greater than the critical R-value.

3.2 Reliability

The reliability test results were conducted with 21 statement items by comparing the Cronbach's Alpha value of 0.845. Therefore, from this information, Cronbach's Alpha > 0.60 means the data is reliable.

3.3 Discussion

In the data analysis process, discussing the conclusions outlined above, the author will provide several suggestions: In the indicator of the e-service quality variable with the statement "frequent errors occur in the Grab online transportation system," it received the lowest score. This means Grab company should conduct regular maintenance to reduce the error rate. The indicator of the customer satisfaction variable with the statement "availability of various types of information in the Grab online transportation application" received the lowest score. This means that Grab should provide as much information as possible on the application to facilitate new users' use of the Grab online transportation application. The indicator of the customer loyalty variable with the statement "informing others about the experience with the Grab online transportation

application service" received the lowest score. This means that consumers are not satisfied with the service provided. Thus, there is a need for periodic discount offers to attract consumers, which indirectly will lead to word of mouth from one consumer to another

4 Conclusions

Based on the research results and discussions conducted to determine the influence of e-service quality on customer loyalty mediated by customer satisfaction, the following conclusions can be drawn: The descriptive analysis of the data obtained regarding e-service quality, customer satisfaction, and customer loyalty variables overall falls into the very high category. Partial research results show that e-service quality positively and significantly affects customer satisfaction. This indicates that service quality can enhance consumer satisfaction using the Grab online transportation application. Furthermore, partial research results indicate that e-service quality positively and significantly affects customer loyalty. This suggests that good service quality will impact consumer loyalty. Additionally, partial research results show that customer satisfaction positively and significantly affects customer loyalty.

This indicates that when consumers are satisfied with the service provided by Grab, they will likely use it repeatedly. After analysis, the research results suggest customer satisfaction mediates the relationship between e-service quality and customer loyalty. This demonstrates that consumer satisfaction with the quality of service provided will lead to increased consumer loyalty.

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