The Role of Customer Satisfaction Mediates The Effect of Service Quality on Customer Loyalty in Online Transportation

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Published: 20/09/2023

How to cite (in APA style):

Abstract—The purpose of this research was to analyze the role of customer satisfaction in mediating service quality and customer loyalty for Grab customers in Denpasar. This research is a type of associative study. The research population is customers of Grab bike service in Denpasar city and sample determination in this study uses probabilistic sampling by random sampling. The sample of this study is 100 customers of online motorcycle taxi users. The primary data source is the respondents who directly respond to the survey variable being tested. Data collection used in study is by distributing questionnaires to 100 respondents and data analysis technique used is Partial Least Square (PLS). The research results show that the variable customer satisfaction is a good mediator between service quality and customer loyalty. The existing relationship is a positive relationship where as the service quality of Grab-Bike in Denpasar improves, so does customer satisfaction, which in turn increases customer loyalty.

Keyword: Customers; Grab; Loyalty; Partial Least Square (PLS); Satisfaction; Service Quality

I. INTRODUCTION

Grab has been present in 207 regencies in Indonesia and has more than 1.7 million Grab partners, one of which is in Denpasar. As reported by (Jumanto) Grab first operated in Denpasar in early 2017, around March-April. The emergence of online motorbike taxis in Denpasar such as Grab has made it easier for people to move.

The rise of online motorcycle taxi services operating in Denpasar has an impact on increasing competition between online transportation service providers. This situation makes consumers more selective in choosing online transportation services, especially the people of Denpasar City. The community will choose one of the alternative choices according to their abilities and what they want. In order to face increasing competition, Grab must pay attention to service quality so that customers are satisfied with the service and will create a feeling of loyalty.

Customer loyalty is the attachment of customers to brands, stores, or suppliers based on highly positive attributes in long-term purchases (Tjiptono 2004:110). From this understanding, it can be interpreted that brand loyalty is achieved through a combination of satisfaction and complaints. Customer satisfaction, on the other hand, stems from how well a company creates satisfaction by minimizing complaints and helping consumers achieve long-term purchases. Factors that influence customer loyalty are service quality, price, customer satisfaction, and brand image (Dharmestra, 1999). However, this research investigated two factors only: service quality and customer satisfaction.

Quality of service is an act or activity that can be offered by one party to another that is intangible in nature and does not result in proprietary rights. (Kotler and Keller 2009: 65). Service quality is a dynamic condition related to 3 orientations, namely customer perceptions, products or services and processes (Ratnasari and Aksa, 2011:104). In service, customer satisfaction is a determining factor...
for quality, so every company must be able to provide services that are expected to be able to provide satisfaction to its customers. To determine the quality of service perceived by consumers, there are metrics to measure customer satisfaction across the five dimensions of service quality. According to Tjiptono and Chandra (2016), it has five aspects of service quality. Specifically, tangible (direct evidence), reliability, responsiveness (ability to react), assurance, and empathy. If the quality of service is good, the customer will be satisfied.

Client dependability may be a customer's commitment to a brand, store or provider based on a really positive characteristic in long-term buys (Tjiptono 2004:110). From this understanding, it can be translated that brand dependability is achieved due to a combination of fulfillment and complaints. In the interim, client fulfillment comes from how much the company's execution is to produce fulfillment by minimizing complaints so that long-term buys are gotten by customers. The factors that influence customer loyalty are service quality, price, customer satisfaction, and brand image (Dharmmesta, 1999) but in this research, only two factors that were examined, namely service quality and customer satisfaction.

The subject of this research is the online transportation service company Grab which has users in Denpasar City. The frequent occurrence of errors in the application makes Grab customers feel dissatisfied, this can cause customers to become less loyal to using the application services provided by the company. Not only that, based on reviews from the Grab application, customers also complained that Grab drivers did not use the full attributes of PT. Grab, namely jackets and helmets, drivers have minimal knowledge of the consumer's route/destination location, the arrival of drivers does not match the estimation of the Grab application, often gets drivers far from the pick-up location, drivers cancel consumer orders without reason, drivers ride motorbikes at high speed, Grab rates like changed, and helmets for consumers are often dirty and unkempt. This can cause customers to become less loyal to using the application services provided by the company.

Taufik et al. (2022) in their research revealed that service quality directly affects customers, especially customer satisfaction. Product quality also affects customer satisfaction and loyalty and vice versa. However, service quality did not directly affect customer loyalty. Meanwhile, mediation through customer satisfaction and product quality indirectly affects customer loyalty. In addition, Hamdani & Mahfudhon (2023) found that 1) customer experience has a positive and significant effect on customer loyalty; 2) customer experience has a positive and significant effect on customer value; 3) customer experience has no significant positive effect on customer satisfaction; 4) customer value has a positive effect on customer loyalty; 5) customer satisfaction has a positive and significant effect on customer loyalty; 6) customer value indirectly mediates the relationship between customer experience and customer loyalty; 7) customer satisfaction directly mediates the relationship between customer experience and customer loyalty.

Based on the background and the previous research above, this research aims to analyze the role of customer satisfaction in mediating service quality and customer loyalty for Grab customers in Denpasar.

II. CONCEPT AND HYPOTHESIS

Benefit quality is additionally considered a determinant of client fulfillment. A few of the comes about of past considers showing a positive and noteworthy impact between benefit quality and client fulfillment, research conducted by Nadia Afrilliana (2020), Harun Al Rasyid (2017), Eko Winarni (2022), Riri Oktarini (2019). Some of the results of previous studies indicate that there is a positive and significant influence between service quality and customer loyalty in research conducted by Jaka Atmaja (2018), Fifin Anindhyta Budiarti, et al. (2020), I Gede Benny Subawa, et al. (2020). However, several study results that refute the above results are the results of a study conducted by Willyanto Agiesta, et al. (2021) examining loyalty.

Some of the results of previous studies indicate that there is a positive and significant influence between service quality and customer loyalty in research conducted by Jaka Atmaja (2018), Fifin Anindhyta Budiarti, et al. (2020), I Gede Benny Subawa, et al. (2020). However, several study results that refute the above results are the results of a study conducted by Willyanto Agiesta, et al. (2021) examining loyalty.

Based on the main theory and several supporting studies, a hypothesis is formulated related to the problem under study by conducting statistical tests using the SEM-PLS analysis technique and the results of the research are obtained, then from these results, it can be concluded whether the research results can support or reject previous studies and compare with the main theory.
Based on the formulation of the problem that has been described in the concept of thinking, the research hypothesis is as follows:

H1: Service quality has a positive and significant effect on customer satisfaction.

H2: Service quality has a positive and significant effect on customer loyalty.

H3: Customer Satisfaction has a positive and significant effect on customer loyalty.

H4: Customer satisfaction mediates the effect of product quality on loyalty.

III. METHOD

Since this research describes the impact of service quality on customer loyalty and examines customer satisfaction as an intermediary variable between service quality and customer loyalty, this research is classified as an associative research type. This research was conducted in Denpasar city. The object of this research is online motorcycle taxi users, especially Grab-Bike with a usage period of the last 3 months. Often called exogenous stimulus variables and fixed in Indonesian are often called independent variables, that is variables that influence the dependent variable or are the cause or change or appearance of the dependent variable. Sugishirono (2015:81). The extrinsic components in this research are customer satisfaction (Y1) and customer loyalty (Y2). Endogen Often called the output variable and often called the dependent variable, that is a variable that influences or becomes a result because of the free variable (Sugiyono, 2015: 132). This research uses descriptive statistics and inferential statistics using Partial Least Square (PLS) to analyze the data.

IV. RESULT AND DISCUSSION

Validity and reliability tests were performed to determine the efficacy and reliability of the research instruments. The results are shown below.

The calculated results of the validity test show that the product-moment correlation values for all study measures and the overall constituent values are above 0.30 and statistically significant at the 0.05 level, indicating that there is a valid measure. This means that all survey questions are easy for respondents to understand. Confidence test calculations show that the CA values or all components are greater than 0.81, indicating that all components are within a very reliable criterion and that respondents' answers to the questionnaire are very consistent.

Descriptive analysis is presented in tabular form which shows the average score of the variable (construct) and construct indicators. The class interval size uses a statistical formula, namely: \( \frac{5-1}{5} = 0.80 \), so the range of scores is as follows:

\[ 1.00-1.80 = \text{very not good} \]
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1.81-2.60 = not good
2.61-3.40 = good enough
3.41-4.20 = good
4.21-5.00 = very good

Table 1. Average Score of Indicators and Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Indicator</th>
<th>Score</th>
<th>Construct</th>
<th>Indicator</th>
<th>Score</th>
<th>Construct</th>
<th>Indicator</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>(X11)</td>
<td>3.20</td>
<td>Y1</td>
<td>(Y11)</td>
<td>3.22</td>
<td>Y2</td>
<td>(Y21)</td>
<td>3.15</td>
</tr>
<tr>
<td></td>
<td>(X12)</td>
<td>3.25</td>
<td></td>
<td>(Y12)</td>
<td>3.04</td>
<td></td>
<td>(Y22)</td>
<td>3.36</td>
</tr>
<tr>
<td></td>
<td>(X13)</td>
<td>3.34</td>
<td></td>
<td>(Y13)</td>
<td>3.21</td>
<td></td>
<td>(Y23)</td>
<td>3.02</td>
</tr>
<tr>
<td></td>
<td>(X14)</td>
<td>3.20</td>
<td></td>
<td>(Y14)</td>
<td>3.06</td>
<td></td>
<td>(Y24)</td>
<td>3.07</td>
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<tr>
<td></td>
<td>(X15)</td>
<td>3.30</td>
<td></td>
<td>(Y15)</td>
<td>3.14</td>
<td></td>
<td>(Y25)</td>
<td>3.12</td>
</tr>
<tr>
<td></td>
<td>(X16)</td>
<td>3.28</td>
<td></td>
<td>(Y16)</td>
<td>3.27</td>
<td></td>
<td>(Y26)</td>
<td>3.24</td>
</tr>
<tr>
<td></td>
<td>(X17)</td>
<td>3.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Y27)</td>
<td>3.13</td>
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<tr>
<td></td>
<td>(X18)</td>
<td>3.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Y28)</td>
<td>3.06</td>
</tr>
<tr>
<td>X</td>
<td>(X19)</td>
<td>3.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(X110)</td>
<td>3.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>3.26</td>
<td></td>
<td></td>
<td>Average</td>
<td>3.16</td>
<td></td>
<td>Average</td>
<td>3.14</td>
</tr>
</tbody>
</table>

In Table 1 it can be seen that construct X has an average of 3.26. While the Y1 construct has an average of 3.16 and the Y2 construct has an average of 3.14. With this value, it can be concluded that the three constructs have a score with a fairly good category. The highest value in the X construct is the X1.3 indicator with a value of 3.34. The variable on this indicator is empathy, meaning that research respondents choose empathy given to the highest service compared to the others. The highest value in the Y1 construct is the Y1.6 indicator with a value of 3.27. The variable on this indicator is the willingness to recommend, meaning that research respondents or consumers show their satisfaction by recommending grab-bike services to others. The highest value in the Y2 construct is the Y2.2 indicator with a value of 3.36. The variable on this indicator is showing immunity with other service products, meaning that customer loyalty is shown by consumers ignoring other services and loyally using the Grab-bike service.

Data analysis in this research uses the Partial Least Square (PLS) analysis tool, the reason is that PLS is a very powerful data analysis method for data-based (Component-based) research compared to theory. PLS is predictive, wanting to get the best weight estimate for each indicator block from each latent variable block that maximizes the variance explained, so it is optimal for prediction accuracy. The analysis process includes the outer model and inner model which are further described below.

In this research, the indicators that form the construct are reflexive, so the evaluation of the measurement model (outer model) uses the following criteria: a) convergent validity, b) discriminant validity, and c) composite reliability and Cronbach alpha. Convergent validity calculation results show that all construct indicators have met the valid requirements in terms of convergent validity, namely with a loading value of > 0.50 and significant. The discriminant validity calculation results show that all constituent indices within each block showed higher values than other constituents within the same block. It therefore satisfies applicable requirements regarding discriminant validity criteria. The results of the calculations show that the combined reliability and Cronbach alpha values of all constituents meet the reliability requirement, i.e., index values greater than 0.70.

The Structural Model (Structural Model) Evaluation of the Internal Model is a measure that evaluates the accuracy of the model throughout the study, formed by several variables and their indicators. This structural model is evaluated through several approaches, including: a) R-Square (R2), b) Q-Square Predictive Relevance (Q2), c) Goodness of fit (GoF). The computational results shown in Table 2 show that the adjusted R-squared value of 0.631 for customer satisfaction is included in the strong model criteria. This means that service quality variation can explain 63.10% of customer satisfaction variation and the remaining 36.90% of customer satisfaction variation explained by variations in other variables, outside the research model. Moreover, the adjusted R-squared for customer loyalty of 0.738 is a strong model. In other words, variations in service quality and
customer satisfaction can explain 73.80% of the variation in customer loyalty, and the remaining 22.20% can be explained by other variations not included. The variables are accounted for by the estimation model. Overall, this means that the estimation models produced in this research have a high level of accuracy. This can be further confirmed with the following Q-square calculation.

Table 2. R-Square ($R^2$) value

<table>
<thead>
<tr>
<th>Construct</th>
<th>R Square</th>
<th>R Square Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEPUASAN PELANGGAN</td>
<td>0.635</td>
<td>0.631</td>
</tr>
<tr>
<td>LOYALITAS PELANGGAN</td>
<td>0.743</td>
<td>0.738</td>
</tr>
</tbody>
</table>

The calculation results as shown in Table 2 show that the adjusted R-Square value of customer satisfaction is 0.631 included in the strong model criteria, meaning that variations in service quality are able to explain variations in customer satisfaction of 63.10 percent, while the remaining 36.90 percent is explained by variations in other variables outside the research model. Furthermore, the adjusted R-Square of customer loyalty of 0.738 is a strong model, meaning that variations in service quality and customer satisfaction can explain variations in customer loyalty of 73.80 percent, while the remaining 22.20 percent is explained by variations in other variables not included in the estimation model. Overall, it means that the estimation model built in this research has high accuracy, which can be further seen in the following Q-Square calculations.

Table 3. Nilai Q-Square

<table>
<thead>
<tr>
<th>Total</th>
<th>Case1</th>
<th>Case2</th>
<th>Case3</th>
<th>Case4</th>
<th>Case5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSO</td>
<td>600.000</td>
<td>369.623</td>
<td>0.384</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSE</td>
<td>100.000</td>
<td>100.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Q^2$</td>
<td>558.00</td>
<td>369.623</td>
<td>0.384</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loyalitas Pelayangan</td>
<td>800.00</td>
<td>407.411</td>
<td>0.491</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The calculation results produce a customer satisfaction Q2 value of 0.384. Based on Lathan's and Ghozali's criteria, it is included in the strong model criteria, for Q2 customer loyalty of 0.491 is also a strong model. This means that the estimation model built in this research for each relationship has a high level of prediction accuracy. To see the accuracy of the model as a whole (globally), then the GoF calculation is carried out as follows.

The Goodness of Fit (GoF) results show that the model used is the large model, meaning that the global model is shown as an estimation model that has a level of predictability that is fit because 65.50% of the variation in the global model can be explained by variations in all exogenous variables.

The expected test results are Ho rejected or Hi accepted where the sig value <0.05, the calculation results are shown in Table 3. The calculation results can be seen in Figure 2 for the path coefficient and Figure 3 for the statistical test.
that there is a positive relationship between research conducted by Priporas et al. (2017) provided.

4) Customer satisfaction mediates part of the relationship between service quality and customer loyalty. This is reflected in the direct relationship between customer satisfaction and customer loyalty (Table 4.), which is important and the indirect relationship between service quality and customer loyalty mediated by customer satisfaction. relationships are also important (Table 5.). In other words, increasing customer satisfaction is very important to increase customer loyalty through customer satisfaction.

**Table 4.** Indirect Relationship between Service Quality and Customer Loyalty by Mediation of Customer Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality</td>
<td>0.797</td>
<td>0.053</td>
<td>15.01</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.445</td>
<td>0.031</td>
<td>14.49</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

**Table 5.** Direct Relationship between Service Quality and Customer Loyalty by Mediation of Customer Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Quality</td>
<td>0.464</td>
<td>0.042</td>
<td>11.09</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>0.398</td>
<td>0.030</td>
<td>13.23</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

**Discussion**

In testing this hypothesis, the results of research and analysis using the PLS method show that service quality has a direct effect on customer satisfaction. Customer satisfaction has a positive effect of 0.797 and at a significance level of 0.05 on customer loyalty. These results indicate that there is a direct influence between service quality on customer satisfaction, meaning that the better the service quality, the higher customer satisfaction is also increasing.

Grab–bike is expected to be able to maintain the quality of service it has now. This is important because it will make consumers able to show immunity from the attractiveness of competitors’ products so that the opportunity to switch to competitors will be even lower. Consumers who recommend to others will add new consumers who can be reached by Grab-bike. Service quality must also be maintained and improved if Grab-bike provides other product services so that consumers have choices to purchase more than one product. By making repeat purchases, it can be concluded that consumers are satisfied with the services provided.

The research results obtained support the research conducted by Priporas et al. (2017) that there is a positive relationship between service quality and customer satisfaction with Airbnb service accommodations. The research results of Iqbal et al. (2018) also revealed that there is a direct positive and significant relationship between service quality and customer satisfaction.

The results of this research stated that the influence of service quality on customer loyalty had a positive effect of 0.464 and a significance level of 0.05. This means that the quality of service from Grab-Bike in the city of Denpasar has a significant positive influence on customer loyalty. If the quality of service offered is in accordance with consumer expectations, it is certain that it will increase consumer loyalty to the Grab-bike service. Interest in reusing the Grab-bike service is also an indicator that has been proven to increase customer loyalty. When the two indicators have been proven by consumers, then voluntarily, usually loyal consumers will be willing to recommend the Grab-bike service. The results of this research are the same as the previous research by Appuhamilage and Torii (2019). The results show that satisfaction has a direct positive impact on university services and financial support, and loyalty also has a strong positive impact on student satisfaction. Meanwhile, research by Cuong and Khoi (2019) where the results of the research shows that service quality has an influence on customer loyalty.

There is a positive effect for customer satisfaction at 0.445 and a significant for customer loyalty at 0.05. In other words, the higher the quality of service, the higher the customer loyalty. The results above show that customer satisfaction has a direct and significant positive effect on customer loyalty. The effect of customer satisfaction on customer loyalty and the direct impact of customer satisfaction on customer loyalty can be seen from the results of the analysis using the PLS method. This satisfaction will lead consumers to remain loyal to subscribing to Grab-Bike in Denpasar City, not switching to other online motorcycle taxi services and will recommend Grab-Bike in Denpasar City because it has proven through the form of services provided that they are as desired. The level of Empathy the driver Grab–Bikes to customers also provides a sense of comfort to consumers. The fast response attitude offered by grab-bike service providers can of course also increase customer satisfaction which automatically increases customer loyalty. Reliability and certainty in the use of services have been proven in research results which
also increase customer loyalty. This finding is supported by previous research on e-banking use during the COVID-19 pandemic by Haq and Mumtaz Awan (2020), which found that well-being increases e-banking loyalty, especially during COVID-19. The relationship between e-banking privacy and security and e-banking loyalty has been shown to increase satisfaction and loyalty.

The direct relationship between customer satisfaction and customer loyalty is significant, as well as the indirect relationship between service quality and customer loyalty through the mediation of customer satisfaction is also significant. This means that to increase customer loyalty through customer satisfaction, it is very necessary to increase customer satisfaction. This shows that the variable customer satisfaction is a good intermediary between service quality and customer loyalty. The existing relationship is a positive relationship in which as the service quality of Grab-Bike in Denpasar improves, so does customer satisfaction, which in turn increases customer loyalty.

The results of this research are supported by previous research conducted by Veloso et al. (2020) showing that customers are satisfied with Auchan Famalicão (Portugal) online services, indicating greater preference and satisfaction with Drive services. Research conducted by Chikazhe et al. (2020) showed that graduates' perceived service quality and respective loyalty positively influenced graduates' perceived job performance. It was found that graduate satisfaction did not significantly influence graduates' perceived job performance.

V. CONCLUSION

Service quality has a positive and significant effect on Grab-Bike customer satisfaction in Denpasar city, that is, the better the quality of service and products from Grab-Bike in Denpasar city, the customer satisfaction will increase. Conversely, if the quality of Grab-Bike in Denpasar city gets worse, then Grab-Bike customer satisfaction in Denpasar city will also decrease. Service quality has a positive and significant effect on Grab-Bike customer loyalty in Denpasar City, Malang City, namely the better the service quality from Grab-Bike in Denpasar City, the customer loyalty will increase and vice versa. Customer satisfaction has a positive and significant effect on Grab-Bike customer loyalty in the city of Denpasar, so customer loyalty will increase and vice versa. Service quality has a positive and significant effect on Grab-Bike customer loyalty in Denpasar City with customer satisfaction as a mediating variable, that is, the better the service quality of Grab-Bike in Denpasar City, the customer satisfaction will increase, whereby the increase in customer satisfaction will increase customer loyalty as well, and vice versa. Grab leaders are expected to be able to improve service through the various needs of customers, take customer complaints more seriously and provide solutions according to the needs of each Grab-Bike customer in Denpasar city to improve service quality and make customers feel satisfied after carrying out services or using other products. that Grab offers. There are several question indicators that have the lowest value so it can be concluded that the improvements that must be made by Grab are based on these indicators. Grab must improve services so that consumers are not influenced by other online motorcycle taxis, starting from reminding drivers to greet customers, ensuring destination locations and providing snacks and other compliments to increase consumer satisfaction, so that consumers will always give drivers 5 5-star ratings and company.

REFERENCE


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Jurnal Ekonomi dan Bisnis Jagaditha EISSN 2579-8162  CC-BY-SA 4.0 License  Page 198
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