An Analysis of Customer Satisfaction and Loyalty of Online Transportation System in Pekanbaru, Indonesia

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Abstract. This study aims to determine the mediating role of customer satisfaction in the relationship between customer trust and customer experience on customer loyalty in Grab transportation in Pekanbaru. The variables of this study include customer trust, customer experience, customer satisfaction, and customer loyalty. This research was conducted in Pekanbaru City. Data were collected through a questionnaire method which was filled independently of 400 respondents using the census / questionnaire method then analyzed by Structural Equation Modeling (SEM) with the help of SPSS 26.0 and Smart PLS 3.2.9. The results of the analysis prove (1) Customer Trust has a positive and significant effect on Customer Satisfaction, (2) Customer Experience has a positive and significant effect on Customer Satisfaction, (3) Customer Satisfaction has a positive and significant effect on Customer Loyalty, (4) Customer Trust has no effect and not significant to Customer Loyalty, (5) Customer Experience has a positive and significant effect on Customer Loyalty, (6) Customer Trust has a positive and significant effect on Customer Loyalty through the Customer Satisfaction variable, (7) Customer Experience has a positive and significant effect on Customer Loyalty through variables Customer satisfaction.

1. Introduction
The conditions of heavy traffic and the busyness of urban communities do not deny them to use transportation services. To avoid congestion in urban areas, people are often reluctant to drive their vehicles. The choice of alternative transportation services that are able to avoid congestion and friendly prices is motorcycle transportation, now online motorcycle taxi we called Grab[1]. Grab is a social-spirited company engaged in services using two-wheeled transportation and the use of applications in ordering. Online motorcycle taxi drivers are recruited by training, and are equipped with jackets, helmets and smartphones that are useful for viewing orders and calculating prices based on distance. People are very happy with online transportation such as Grab, because ordering is easy using the application via smartphone, affordable and transparent prices. Grab present a variety of services in their application so that the public is very satisfied because online motorcycle taxi are not only used to take them back and forth but also can deliver food and goods at affordable rates. Nowadays people really like cellphones
(smartphones), starting from browsing, playing online games and even shopping can be done online via cellphones. Not only online shopping can be done via cellphone, but ordering services can also be done online. The growing use of the internet in the community makes business people create opportunities that are already rife among the community by combining transportation services with the internet, which will be a new breakthrough in transportation[2].

Currently Pekanbaru has become Grab's target market to run an online transportation service business that can facilitate all community activities and can make job vacancies for people in Pekanbaru City. In addition, Grab also has a competitor that has previously launched and controlled the online motorcycle taxi transportation market in Pekanbaru, namely Gojek[3]. Application-based service providers, Go-Jek and Grab, are actively growing their business through funds from investors to the acquisition of competitors.

Customer Satisfaction is feelings of disappointment or pleasure for each individual after comparing the performance of the product in mind according to the expected product performance. Customer satisfaction is the goal of every company for the survival of every company. This results in customer satisfaction is one of the most important factors in winning the competition[4].

Customer trust is a forming factor for customer loyalty [5] [6] stated that there is a significant effect of customer trust on customer satisfaction. This research is in line with the research conducted by [7] which also states that trust has a positive and significant effect on Customer Satisfaction and Loyalty.

Based on the Top Brand Index data from 2016-2019, it can be explained that grab had the top position with a percentage of 48.0% in 2018, but in 2019 Gojek regained its position in first place compared to Grab. This shows that Gojek and Grab are two transportation service companies that compete very tightly. This competition is of course to increase the number of users of each of these online transportation, especially Grab. In this case, it is necessary to review strategies on how to increase customer loyalty. Based on this background, this study uses a conceptual framework and hypothesis given in Figure 1 and from the conceptual framework, the research hypotheses are:

H1: Customer Trust has a positive effect on Customer Satisfaction
H2: Customer Experience has a positive effect on Customer Satisfaction
H3: Customer Satisfaction has a positive effect on Customer Loyalty
H4: Customer Trust has a positive effect on Customer Loyalty
H5: Customer Experience has a positive effect on Customer Loyalty
H6: Customer Trust has a positive effect on loyalty through customer satisfaction variables
H7: Customer Experience has a positive effect on Loyalty through customer satisfaction variables

![Figure 1. Conceptual Model](image)

2. Methodology
2.1 Population and Sample
The population used in this study were residents of Pekanbaru City with a total population of 1,091,088 million people. Sampling in this study using probability sampling technique, namely proportionate stratified random sampling using the Slovin formula, namely 400 people.

2.2 Research Instrument
The research instrument used was in the form of a questionnaire by giving statements to respondents. Respondents are asked to provide responses by providing answers to one of the answer options provided. Qualitative answers are then quantified. Each answer is given a numerical score to reflect the degree of suitability of the respondent as measured by a Likert scale.

2.3 Analysis of Structural Equation Model with PLS
The data processing technique in this study used a partial least square (PLS) approach. PLS is a component or variant based SEM (Structural Equation Modeling) equation model. PLS is an alternative approach that shifts from a covariance-based SEM approach to a variant.

3. Data Analysis and Result

3.1. Coefficient of Determination (R Square)

| Table 1. R Square |
|------------------|
| Variable         | R Square | R Square Adjusted |
| Customer Satisfaction | 0,497   | 0,495             |
| Customer Loyalty  | 0,454   | 0,450             |

Source: SmartPLS Processed Data

Based on table 1 above, it shows that the R-Square Adj value for the Customer Satisfaction variable (Y1) is 0.495. This means that the percentage of the influence of Customer Trust and Customer Experience on Customer Satisfaction is 45% while the remaining 55% is influenced by other factors that are not included in this model.

Furthermore, the R-Square Adj value for the Customer Loyalty variable (Y2) is 0.450, which means that the percentage of Customer Trust, Customer Experience and Customer Satisfaction with Customer Loyalty is 45% while the remaining 55% is due to other factors not included in this model.

3.2. Hypothesis Test
After the data meets the measurement requirements, then proceed with the Bootstrapping method on SmartPLS 3.2.9. This test is done by comparing the T value generated from the T-statistic calculation with the T-table. The null hypothesis will be accepted if the T-statistic < of T table and vice versa the null hypothesis will be rejected if the T-statistic value > T table. The results of hypothesis testing using SmartPLS in this study can be seen in the following table:

| Table 2. Hypothesis Test |
|--------------------------|
| Hypothesis | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P Values | Conclusion |
| Hypothesis 1 | 0,535 | 0,538 | 0,055 | 9,744 | 0,000 | Accepted |
| Hypothesis 2 | -0,049 | -0,049 | 0,048 | 1,016 | 0,155 | Rejected |
| Hypothesis 3 | 0,293 | 0,292 | 0,058 | 5,014 | 0,000 | Accepted |
| Hypothesis 4 | 0,070 | 0,066 | 0,052 | 1,328 | 0,092 | Rejected |
| Hypothesis 5 | 0,667 | 0,671 | 0,050 | 13,310 | 0,000 | Accepted |
| Hypothesis 6 | 0,357 | 0,360 | 0,042 | 8,541 | 0,000 | Accepted |
| Hypothesis 7 | 0,196 | 0,197 | 0,045 | 4,318 | 0,000 | Accepted |

Source: SmartPLS Processed Data
3.3. Effect of Customer Trust (X1) on Customer Satisfaction (Y1)

The relationship in Customer Trust to Customer Satisfaction is where customers have to observe or try directly to use Grab, where if customers have felt it, satisfaction will be achieved, so that customers feel confident that Grab is in accordance with expectations and what is provided by Grab, customers believe in quality servant.

Based on the results of descriptive analysis, respondents are more likely to respond to statements in the questionnaire that the customer trust variable reaches the highest value is the first point of the statement, namely "Grab always provides important information for its customers" means that Grab provides important information such as promos that are given, or other information where it is information to attract the attention or desire of a customer to try to buy a product or service in the Grab application. This is in line with the structural model analysis (inner model) which shows that there is a positive influence from the customer trust variable on the customer satisfaction variable. The path coefficient test results indicate that the customer trust variable has a significant effect on customer satisfaction at Grab in Pekanbaru.

So, the higher the trust of a customer, the more significant it will have a positive impact on Customer Satisfaction in using the Grab application in Pekanbaru. In the research results[8], customer satisfaction shows a positive and significant influence on customer loyalty. The results of this study are in line with [9] which shows that customer satisfaction has a positive effect on customer loyalty.

3.4. Effect of Customer Experience (X2) on Customer Satisfaction (Y1)

The relationship in Customer Experience to Customer Satisfaction is if customers have used Grab directly, it means that customers have experienced the service from the application and experienced the services of Grab's HR itself, which means that customers get a good experience using Grab, so that customers are satisfied using the Grab application.

Based on the results of descriptive analysis, respondents are more likely to respond to statements in the questionnaire that the customer experience variable reaches the highest value is at the 7th point of the statement which states that "I have experience in using grab", meaning that customers get a good experience after customers use and experience the services and services of the Grab application firsthand so that customers feel satisfied after using Grab. This is in line with the structural model analysis (inner model) which shows that there is a positive influence from the customer experience variable on the customer satisfaction variable. The path coefficient test results indicate that the customer experience variable has a significant effect on customer satisfaction at Grab in Pekanbaru.

So, the better / stronger the Customer Experience, the more significant it will have a positive impact on customer satisfaction when using grab in Pekanbaru. The results of this study are in line with...
research[10] which states that the Customer Experience variable has a significant effect on customer satisfaction.

3.5. Effect of Customer Satisfaction (Y1) on Customer Loyalty (Y2)

The relationship between customer satisfaction and customer loyalty is where by creating a sense of satisfaction with customers, customers will repeat using the grab application, because customers get a good service, and get what customers want according to their requests. As the feeling of satisfaction with grab increases, customers unconsciously have reached a high level of loyalty, where customers always use the grab application repeatedly, so that customers have increased the intensity of using the grab application.

Based on the results of the descriptive analysis, respondents are more likely to respond to the statement in the questionnaire that the customer satisfaction variable reaches the highest value is at point 1 which states that "I am satisfied using the features and services provided by Grab because they meet their needs", the meaning is the customer already have the trust and experience in using Grab so that customers are satisfied in terms of services and application services. So that customers argue that grab is able to meet customer needs in their daily activities which will then have an impact on loyalty. This is in line with the structural model analysis (inner model) which shows that there is a positive influence from the customer satisfaction variable on the customer loyalty variable. The path coefficient test results show that the customer satisfaction variable has a significant effect on customer loyalty at Grab in Pekanbaru.

So, customer perceptions about customer satisfaction increase, it will have a more significant positive impact on customer loyalty to Grab in Pekanbaru. The results of this study are in line with research [11].Customer satisfaction shows a positive and significant effect on customer loyalty. The results of this study are in line with[12] which shows that customer satisfaction has a positive effect on customer loyalty.

3.6. Effect of Customer Trust (X1) on Customer Loyalty (Y2)

The relationship in Customer Trust to Customer Loyalty is where customers must observe or try directly to use Grab, where if the customer has felt it, satisfaction will be achieved, so that customers feel confident that Grab is in accordance with expectations and what is provided by Grab, customers believe in quality servant. However, if the results of observations and information obtained by customers do not match what customers feel, then automatically customers cannot trust Grab, so this will also have an impact on decreased loyalty.

Based on the results of descriptive analysis, respondents are more likely to respond to the statement in the questionnaire that the customer trust variable reaches the highest value is at point 1, namely "Grab always provides important information for its customers" meaning that Grab provides important information such as promos. given, or other information where it is information to attract the attention or desire of the customer to try to buy a product or service in the Grab application. However, many respondents also responded to the statement in the questionnaire that the Customer Trust variable got the lowest score in point 5 which states that "Grab provides reliable services to customers". The point is that when customers use Grab, customers do not feel reliable service in Grab, so customers also feel dissatisfied with Grab, it will have an impact on loyalty. Where customer confidence in Grab is high, but when using Grab, customers do not feel that there is a reliable service so that customer loyalty to Grab decreases. This is in line with the structural model analysis (inner model) which shows that there is no positive influence of the customer trust variable on the customer satisfaction variable. The path coefficient test results indicate that the customer trust variable does not have a significant effect on customer loyalty to Grab in Pekanbaru.

So, the higher the trust of a customer, the more significant it will have a positive impact on Customer Loyalty to use the application. However, if the trust in Grab is low, Customer Loyalty will decrease.

This is in contrast to the results of [12] research, customer satisfaction shows a positive and significant effect on customer loyalty.
3.7. Effect of Customer Experience (X2) on Customer Loyalty (Y2)

The relationship in customer experience to Customer Loyalty is that Grab must be able to create direct customer loyalty, where experience is able to judge the appropriateness of customers using a product/service. If customers do not feel the value of trust in Grab, then customer loyalty will decrease.

Based on the results of descriptive analysis, respondents are more likely to respond to statements in the questionnaire that the customer experience variable reaches the highest value is at the 7th point of the statement which states that "I have experience in using grab", meaning that customers get a good experience after customers use and experience the services and services of the Grab application firsthand so that customers feel satisfied after using Grab. Meanwhile, it is known that one Customer Experience indicator with the statement "Grab always facilitates me with complete services and attributes" with the lowest score, which means that customers get experience when using Grab, customers do not get services and attributes that are adequate so that customers have experience which is not good for using Grab so that it has an impact on decreased customer loyalty. This is in line with the structural model analysis (inner model) which shows that there is no positive influence from the customer experience variable on the customer loyalty variable. The path coefficient test results indicate that the customer experience variable does not have a significant effect on customer loyalty to Grab in Pekanbaru.

So, if the higher the Customer Experience from the customer, the more significant it will have a positive impact on Customer Loyalty. But what if the Customer Experience is low, then it is not significant that customer loyalty is going to use Grab in Pekanbaru. The results of this study are contrary to research [13] showing that Customer Experience has a direct effect on customer loyalty.

3.8. The Effect of Customer Trust (X1) on Customer Loyalty (Y2) through the Customer Satisfaction variable (Y1)

The relationship of trust with loyalty through satisfaction is a customer trust that will produce loyalty where customers get information from other people or try to use it directly so that customers are satisfied with the service and give confidence in Grab which will then achieve a high level of satisfaction and reach the level of loyalty, or loyal to Grab.

Based on the results of descriptive analysis, respondents are more likely to respond to the statement in the questionnaire that the customer trust variable reaches the highest value is at point 1, namely "Grab always provides important information for its customers" meaning that Grab provides important information such as promos. given, or other information where it is information to attract the attention or desire of the customer to try to buy a product or service in the Grab application. This is in line with the structural model analysis (inner model) which shows that there is a positive influence of the customer trust variable on the customer loyalty variable through customer satisfaction. The path coefficient test results show that the customer trust variable has a significant effect on customer loyalty to Grab in Pekanbaru.

So, the higher the trust of a customer, the more significant it will have a positive impact on Customer Loyalty to use the application. Where the feeling of satisfaction when customers use will create loyalty because customers will continue to increase the intensity of their purchases. The results of this study are in line with research [14] showing that trust has a positive and significant effect on loyalty mediated by satisfaction.

3.9. Effect of Customer Experience (X2) on Customer Loyalty (Y2) mediated by the Customer Satisfaction (Y1) variable

The relationship in customer experience to Customer Loyalty through satisfaction is that Grab must be able to create customer loyalty by providing satisfaction to customers in using Grab, where a good experience will give an impression that sticks in the customer's memory so that customers feel satisfied with using Grab, where customers will make repeat purchases and will be intense in using Grab which will have an impact on loyalty.

Based on the results of descriptive analysis, respondents are more likely to respond to statements in the questionnaire that the customer experience variable reaches the highest value is at the 7th point of the statement which states that "I have experience in using grab", meaning that customers get a good
experience after customers use and experience the services and services of the Grab application firsthand so that customers feel satisfied after using Grab. This is in line with the structural model analysis (inner model) which shows that there is a positive influence from the customer experience variable on the customer loyalty variable through customer satisfaction. The path coefficient test results show that the customer experience variable has a significant effect on customer loyalty through customer satisfaction at Grab in Pekanbaru. So, the higher the Customer Experience from customers, the more significant it will have a positive impact on Customer Loyalty through customer satisfaction to use Grab in Pekanbaru.

To form loyalty is influenced by several factors, namely trust and experience. To increase loyalty is the need for customer trust in Grab and customer experience in using Grab, so that customers get satisfaction in using Grab which will have an impact on loyalty, if customers are satisfied, customers will make repeat purchases so that customers will be loyal to Grab. The results of the research that have been conducted indicate that the role of mediation of customer satisfaction in the customer trust relationship and customer experience on customer loyalty has a positive and significant effect.

4. Conclusion
Based on the results of research analysis and discussion of the Role of Customer Satisfaction Mediation in Customer Trust Relationships and Customer Experience on Customer Loyalty in Grab Online Transportation in Pekanbaru: 1. Customer Trust has a positive and significant effect on Customer Satisfaction at Grab in Pekanbaru. In this study, the Customer Trust variable has a positive influence, which means that if the Customer Trust is getting better, it will increase satisfaction. Based on this, Ha is accepted. 2. Customer Experience has a positive and significant effect on Customer Satisfaction at Grab in Pekanbaru. In this study, the Customer Experience variable has a positive influence, this means that higher Customer Experience will increase satisfaction. Based on this, Ha was accepted. 3. Customer Satisfaction has a positive and significant effect on Customer Loyalty at Grab in Pekanbaru. This means that if the customer's perception of customer satisfaction is higher, it will increase customer loyalty. Based on this, Ha is accepted. 4. Customer Trust has no positive and significant impact on Customer Loyalty to Grab in Pekanbaru. This means that low customer perceptions of Customer Trust will not create Customer Loyalty. Based on this, Ha was rejected. 5. Customer Experience has no positive and significant effect on Customer Loyalty at Grab in Pekanbaru. Based on this, Ha was rejected. 6. Customer Trust has a positive and significant effect mediated by Customer Satisfaction on Customer Loyalty at Grab in Pekanbaru. This means that if customers' perceptions of Customer Trust by achieving high satisfaction, it will create Customer Loyalty. Based on this, Ha is accepted. 7. Customer Experience is influential and significant mediated by Customer Satisfaction of Customer Loyalty to Grab in Pekanbaru. This means that if customers' perceptions of Customer Experience by achieving high satisfaction will create Customer Loyalty. Based on this, Ha is accepted.

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