CHAPTER III

RESEARCH METHOD

3.1 Research Location

Basically, the research is conducted in Yogyakarta. The reason why the researcher decides to do research here is that it will be more effective and the city also known as the city of student whereas proper to get university student respondents. However, in collecting the data there is a possibility that the data are only gathered in Yogyakarta. Since we observed the users of Go-jek application in Yogyakarta.

3.2 Population and Sample Research

Population is known as a certain group or collection of individuals or object under the study. The sample is collection of several part that has identical characteristic with the population that taken for study. In this study, the population is people in understudy of Yogyakarta who using Go-jek application to order something to fulfill their needs and they believe with e-service quality. Populations have been selected for their diversity and very dynamic, responsive and sensitive to changes. Besides information - new information is also easily accessible through websites, making it easier for the researcher to collect data. To minimize the biases, minimum of 300 samples are required on every estimated SEM (Loehlin, 1997). So the sample in this study amounted to 300 questionnaires separated using online form consist of male and female in society.

3.3 Types and Data Collection Techniques

The data used in this study is the primary data, Primary data is data obtained directly from the object of research by using a measurement or data retrieval tool directly on the subject as the source of the information sought. In this study, the data was obtained using a questionnaire distributed to 300 respondents. This technique is a form of data collection instruments that very flexible and relatively easy to use. The types of questions that will be used in this research are closed. Questionnaires will be distributed by the online system (Google forms) to the respondent.

3.4 Definition of Variable Operational and Measurement Research

The variables that will be analyzed in this study are Website design, Reliability, Trust, Customer Satisfaction, and Customer Loyalty. Website design, Reliability, and Trust as the independent variables, the next is two dependent variables which are Customer Satisfaction and Customer Loyalty. The researcher suggests that Customer Satisfaction will affect Customer Loyalty. All items were measured on a six-point agreement scale ranging from 1 = ”Strongly disagree” to 6 = ”Strongly agree”.

3.4.1 Website Design

The website is the customers’ main access to online firms and to attain a successful purchase process. The website design can influence a customer’s perceived image of a company and attract customers to carry out easy purchasing online with good navigation and useful information on the website page of the company. However, a good website page should be able to provide appropriate information and

multiple functions for customers (Andy & Bright, 2012). This variable is measured by the following indicators (Harun, 2013):

- The website has an attractive design.
- The website has a choice of attractive products or services.
- The website is not difficult to access and does not take a lot of time.
- The website can be accessed quickly and easily until all transactions are completed.

3.4.2 Reliability

Reliability refers to the consistency of performance and dependability of company services (Parasuraman, Zeeithaml, & Berry, 1985). Reliability is vital to make sure that the company will perform what it has promised to deliver. It also attracts credibility to the company. This variable is measured by the following indicators (Harun, 2013):

- Consumers really get the product or service ordered.
- Products or services ordered by consumers are the same as those presented on the website.
- The product arrived on time as promised.

3.4.3 Trust

Pavilia (2009) believes that trust is a vital factor in company performance and profitability. Although trust is a cornerstone of strategic relationship development, it also plays a central and original role in company performance development.

This variable is measured by the following indicators from (Shihyu, Chen, & Lin, 2014):

- Give confidence that the Go-jek honestly provides correct information.
- Giving the confidence to make recommendations to consumers on the basis of mutual benefits.
- Give confidence that Go-jek will not take actions that are detrimental to its consumers.

3.4.4Customer Satisfaction

In the service management literature, customer satisfaction can be defined as being a summary of cognitive and affective reaction to a service incident or to a long-term service relationship (Kitapchi & Olgun, 2013). This variable is measured by the following indicators from Lin & Sun (2009):

- Consumers feel a pleasant experience when making a purchase through the website of their choice.
- Consumers feel they have chosen the right choice to buy the product or services through the website of their choice.

3.4.5Customer Loyalty

According to (Ozuru & Kalu, 2009), Customer Loyalty refers to the level of faithfulness shown by a customer in continuing to purchase a particular product or service. Also, customer loyalty is an indicator of the degree of satisfaction the customer has with the product. Customer loyalty could also be defined as the

feeling of attachment or affection for a company's product or service that will directly influence customer's behavior, with the aim of keeping and satisfying them and making them buy more of the firm's products. This variable is measured by the following indicators from Lin & Sun (2009):

- Consumers want to always make repurchases through the website.
- Provide recommendations website to others.

3.5 Validity and Reliability Research Instruments

Test the validity indicate the extent to which a measure (indicator) can measure what you want measured (variable) (Zikmuld & William, 2010). Thus, before distributing questionnaires to a sample of this research, the questionnaire will be used as a data collection tool will be tested for validity and reliability. To that end, a questionnaire that has been created will be distributed to 30 (thirty) respondents. Data collected from respondents are then analyzed for validity and reliability that has been described by the limitations above. The variables and indicators that will be analyzed including:

- Variable about Website Design has 4 questions.
- Variable about Reliability has 3 questions.
- Variable about Trust has 3 questions.
- Variable about Customer Satisfaction has 2 questions.
- Variable about Customer Loyalty has 4 questions.

Table 3.1 and 3.2 below presents the detail results of validity and reliability test that have been tested by using SPSS.

3.5.1 Questionnaire Validity Test

The validity of the questionnaire was determined by how the questionnaire able to elaborate the measured variable (Gozali, 2005). To test the level of validity of the variable, the writer uses the SPSS22 for Windows. Product moment formula is: When the r value was able to see with the correlation where (α) = 0.05 if R-value was greater than R-table or the level of significant <α then the questionnaire would be considered as invalid.

Table 3.1
Questionnaire Validity Test

Variable	Indicators	Value	Cut Off	Result
Website Design	WD 1	0.838	0.361	Valid
	WD 2	0.912	0.361	Valid
	WD 3	0.899	0.361	Valid
	WD 4	0.927	0.361	Valid
Reliability	R 1	0.915	0.361	Valid
	R 2	0.862	0.361	Valid
	R 3	0.839	0.361	Valid
Trust	T 1	0.908	0.361	Valid
	T 2	0.785	0.361	Valid
	T 3	0.787	0.361	Valid
Customer Satisfaction	CS 1	0.959	0.361	Valid
	CS 2	0.942	0.361	Valid
Customer Loyalty	CL 1	0.752	0.361	Valid
	CL 2	0.829	0.361	Valid
	CL 3	0.883	0.361	Valid
	CL 4	0.676	0.361	Valid

Source: Processed Primary Data (2018)

The data in Table 3.1 most of the pilot test result are qualified, refer to validity > R-table, hereby the indicators of the variable are classified as valid.

3.5.2 Questionnaire Reliability Test

Variable reliability testing is proposing to ensure that the indicator is accurate by not showing any indication of bias or inconsistency of each item (Sekaran, 2000). The reliability of the instrument was ensured through acceptable values of Cronbach 's alpha. To have valid data, the indicator should have a value of the corrected item with the total correlation above 0.6 (≥0.6).

Table 3.2
Questionnaire Reliability Test

Variable	Cornbach's Alpha	Requirement	Status
Website Design	0.956	0.60	Reliable
Reliability	0.928	0.60	Reliable
Trust	0.882	0.60	Reliable
Customer Satisfaction	0.970	0.60	Reliable
Customer Loyalty	0.920	0.60	Reliable

Source: Processed Primary Data (2018)

3.6 Analysis Technique

The technical analysis used in this research is to use analysis of structural equation modeling (SEM) method has been adopted by AMOS program and supported by SPSS software considering the conceptual model of this research have three independent variables, one mediating variable, and one dependent variable. his model cannot be analyzed by using the multiple regression analysis. Therefore, this research used AMOS, which is a part of SEM program. AMOS is statistical software and stands for an analysis of a moment structures. It is also specially used for structural equation model (SEM), path analysis, confirmatory analysis and have functions in analyzing the influence of one variable to variables simultaneously.

3.6.1 Respondent Characteristics

This research describes the demographic characteristics of the respondents. The demographic characteristics discussed are gender, age, income/allowance, occupation, and experience in using Go-jek application.

3.6.2 Descriptive Analysis

Descriptive analysis is a set of descriptive explanation that can summarize a given set of data that can represent the entire population or the sample. Descriptive research is a research which aims to explain or describe a situation, event, object or people, and anything that is associated with the variable of the study and it can be explained in the form of a number of words (Rusdiyana, 2017).

3.6.3 Model Development on Theory

As we know that Structural Equation Modeling is a statistical modeling technique to assess the hypothesis of among variables. And based on Ghozali (2004) Structural Equation Modeling is a causality relationship where changing one variable is assumed by causing of changing other variables.

3.6.4 Structure Equation Model (SEM) Identification

SEM identification is a stage when a special value must be gained for all parameters of the gained data. If the special value cannot be found, then the modification of the model might be needed to identify the special value prior to parameter estimation. There are three categories of identification in SEM (Rusdiyana, 2017):

1) *Unidentified Model* is a model that the value of the estimated parameter is greater than the value of known data.
2) *Just Identified Model* is a model that the value of the estimated parameter is equal to the value of known data and it can be concluded that the model has zero degrees of freedom.
3) *Over Identified Model* is a model that the estimated parameter value is smaller than the value of known data.

3.6.5 Model Interpretation and Modification

The model interpretation and modification are needed to recover goodness of fit if the goodness of fit still does not meet the requirement. The aim of doing model interpretation and modification is to know if the modification made can give a better result in the fitness of the model (Baiquni, 2017). The model can be stated

as successfully modified if all or several goodnesses of fit indexes already meet the requirement (Nuriski, 2017). After doing the modification of the model, the researcher can continue to test the hypothesis by using the modification model.

3.6.6 Goodness of Fit Criteria

3.6.6.1 Chi-Square (X^2)

Chi-square is one of the fundamental tests for statistical significance and it is feasible for the testing hypothesis regarding frequencies arranged in a frequency or contingency (Zikmund, Babinn, Carr, & Griffin, 2010). The chi-square will be valid if the data research reached an assumption of normality and have a large number of sample size. When the value of chi-square in a model reaches 0, it means that the model has a perfect fit (Rusdiyana, 2017).

Probability (P-value) is a function used to get, a large deviation indicated by the value of chi-square. P-value for Test of Close Fit (RMSEA < 0.5) indicates the probability of fall < 0.5 P-value > 0.50 indicates fit model (Byrne, 1998). When the probability of insignificant chi-square value has fulfilled the requirements, it indicates that the empirical data are in accordance with the model.

1) H0: Empirical data are identical to the model it means that the hypothesis will be accepted if $p \geq 0{,}05$
2) Hα: Empirical data are not identical to the model it means that the hypothesis will be accepted if $p \geq 0{,}05$

3.6.6.2 CMIN/DF

CMIN/DF is the minimum discrepancy, divided by its degrees of freedom. Several studies have suggested the use of this ratio as a measure of fit. For every estimation criterion, the ratio should be close to one for the correct models. If the value of CMIN/DF is ≤ 2.00, it means that the value of CMIN/DF is a good fit (Byrne, 1989).

3.6.6.3 Goodness of Fit Index (GFI)

Goodness of fit index is used to test if sample data fits a distribution from a certain population. GFI is a measurement of the accuracy of a model in a generating observed covariance matrix. The range of GFI value should be between 0 and 1. Miles and Shevlin (2008) stated that a model can be stated as a good fit model if the GFI value ≥ 0.95. Joreskog & Sorbom theory (2008) stated that if GFI has a negative value indicated that the model is the bad model.

3.6.6.4 Root Mean Square Error of Approximation (RMSEA).

The test was purposed to compress the chi-square in a large amount of sample. RMSEA may reflect the degree of model fit in a certain sample. The model has considered if it has value RMSEA ≤ 0,08 (Browne and Cudeck, 1993).

3.6.6.5 Adjusted Goodness of Fit (AGFI)

Schermelleh (2016) stated that Adjusted Goodness-of-Fit Index (AGFI) is used to adjust bias because of the model complexity. The AGFI approaches the GFI.

AGFI can be stated as, a good fit if the index is 0.90, while the value which is greater than 0.85 may be considered as an acceptable fit.

3.6.6.6 Tucker-Lewis Index (TLI)

Tucker–Lewis index (TLI) is a tool used to evaluate the factor analysis developed in SEM (Aldilla, 2016). According to Haryono & Wardoyo (2016), the value of TLI range from 0 to 1.0. TLI value can be said as a good fit when it is equal to or greater than 0,09.

3.6.6.7 Comparative Fit Index (CFI)

CFI value has a range between 0 to 1. When the value of CFI is close to 1, meaning the model fits while the value of CFI is close to 0, meaning the model does not fit (Sarwono, 2008). The value of CFI which is ≥ 0.90, indicates a good fit and if the value of CFI is in between $0.80 \leq CFI \leq 0.90$, often referred to as a marginal fit (Rusdiyana, 2017). Ghozal & Fuad (2008) stated that the CFI is recommended as a tool to measure the fit of a model.

Table 3.3
Goodness of Fit Index

Goodness of Fit Index	**Cut Off Value**
DF (Degree of Freedom)	Positive
X^2 (chi-square)	≥ 0.05
CMIN/DF	≤ 2.00
GFI (Goodness of Fit Index)	≥ 0.90
RMSEA (Root Mean Square Error of Approximation)	≤ 0.08
AGFI (Adjusted Goodness of Fit)	≥ 0.90
TLI (Tucker Lewis Index)	≥ 0.90
CFI (Comparative Fit Index)	≥ 0.90

Source: Ferdinand (2002