CHAPTER III
RESEARCH METHODS

3.1 Population and Sample

The method of this research is quantitative research to conduct an inferential analysis towards the intention to use Grab. Lind et al. (2017, p. 251) defined population as “the entire set of individuals or objects of interest or the measurements obtained from all individuals or objects of interest”. Given that the exact amount of population that uses Grab is difficult to obtain, this research will be using the Rule of Thumb formula published by Green in 1991. The population chosen for this research is Universitas Ciputra students who lives in boarding houses or does not live with their parents, owns mobile phones, and uses Grab.

Lind et al. (2017, p. 251) defined sample as “a portion, or part, of the population of interest”. Since a multiple regression analysis is included in this research with three independent variables, some researchers concluded that there should be a minimum sample size of 30. Many researchers end up using a rule of thumb formula when their research is parsimonious, similarly, the sample used in this research is based on the Rule of Thumb formula published by Green (1991):\

\[ N \geq 50 + 8m \]

Where:

\( N \) = minimum number of subjects

\( M \) = number of predictors (independent variables)

Following the formula, the sample size for this research is 74 people.
This research will implement the non-probability sampling, which means that the samples are not taken randomly with the requirement that has been set by the researcher. These are the criteria set by the researcher:

1. Uses Grab application
2. Owns a smartphone
3. Resides in Surabaya

3.2 Data Collection Methods

3.2.1 Types of Data Sources

Donald R Cooper stated that data the facts, observations, or experiences on which an argument, theory, or a test is based on. Data can be numerical, descriptive, or visual. Data can be raw or analysed, experimental or observational.

Two types of data will be collected in this research:

a. Primary Data
b. Primary data is defined as the data collected by the researcher themselves from various sources and methods like observations, interview, surveys, questionnaires, or case studies (Ajayi, 2017).

In the case of this research, the primary data is taken from the results of the online surveys spread to the respondents; the collected result will be processed with IBM Statistical Package for Social Software (SPSS).

c. Secondary Data

The result of information collected through books and research journals/articles.
Secondary data is defined as the data collected by other researchers/people/publications that has gone through many statistical treatments. Sources of secondary data includes websites, government publications, textbooks, journals.

3.2.2 Data Collection

Two methods are used in order to collect the data for this research:

a. Online Surveys

Price, Chiang, and Jhangian (2015, ch. 9) stated that a survey research is a quantitative method that includes the use of self-report on selected sample. It is a flexible approach of data collection that can be used to study questions in a research. In this research, the online survey will be delivered in Indonesian as the sample targeted in this research are mostly Indonesian-speaking respondents from various majors of the university and not just from IBM International Class.

b. Literature

Journals, textbooks, and research articles are used in this research to obtain explanation of primary data from previous studies, and theoretical knowledge.

3.3 Operational Definition and Variable Measurement

3.3.1 Operational Definition: the definition that is put into terms of specific criteria intended for testing or measurement (Cooper & Schindler, 2013, p. 53)
Table 3.1 Research Variables and Indicators

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Indicators</th>
<th>Operational Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Trust</td>
<td>The willingness from a consumer to rely on a company where they have confidence in, it is also the positive expectation towards a service provider from the consumer.</td>
<td>1. Integrity: service’s capability to fulfil their obligation.</td>
<td>Willingness to trust an application to fulfil, maintain relationship with users, and provide proper services.</td>
<td>Mayer, Davis &amp; Schoorman, (1995) in Arcand, 2017). Palvia (2009) in Shankar Datta’s (2018)</td>
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<td></td>
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<td>2. Ability: parties involved in providing the service have the technical knowledge to keep the promises made by the company.</td>
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<td></td>
<td>3. Benevolence: efforts from the service provider to maintain the consumer’s interest towards their service.</td>
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<td>E-Service Quality</td>
<td>The quality of the services provided through electronic platforms which includes the provision of products, environment, and delivery in any type of business model. It is said to enhance customer’s experience while using the platform without human interference.</td>
<td>1. Ease of Use</td>
<td>The quality of an application based on user friendliness (ease of use), responsiveness, assurance, application design, and the quality of the information on the application.</td>
<td>Pitchayadejan ant et al. (2019), Gow et al (2019)</td>
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<td>2. Application Design</td>
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<td></td>
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<td>3. Responsiveness</td>
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<td></td>
<td></td>
<td>4. Assurance</td>
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<td></td>
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<td>5. Information Quality</td>
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<tr>
<td>Convenience</td>
<td>The external motivation of using a mobile application that is driven by the provision of immediate accessibility and portability, enabling the consumers to have maximum efficiency.</td>
<td>1. Reduced Effort and Time</td>
<td>Users’ external motivation to use an application because of its mobility, flexible access and that it reduces the effort and time for the users.</td>
<td>(Kuo-Chen and Teo, 2015; Sharma and Gutiérrez, 2010; in Ryu, 2018)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Mobility and Flexible Access</td>
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</tr>
<tr>
<td>Intention to Use</td>
<td>The term that is based on behavioural intention which describes how strong an individual’s</td>
<td>1. Trust</td>
<td>How strong the users’ intention to use the application linked to the ease of use, trust, and</td>
<td>Fishbein and Ajzein (1975 p. 288) Gefen et al. (2003) in Ahmed and Sathish (2017)</td>
</tr>
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<td></td>
<td></td>
<td>2. Attitude, which is significantly linked with the trust from the consumers.</td>
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<tr>
<td></td>
<td></td>
<td>3. Ease of Use, which is closely linked with</td>
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</tbody>
</table>


intention to use something to perform a specific behaviour. the benefits from convenience. attitude from the users.

Source: Processed Data (2020)

3.3.2 Variable Measurement

A 5-point Likert scale is used in this research to measure the variables of the online survey, the scale used in this research is based on the Likert scale created by Rensis Likert in 1932.

The respondents’ agreement towards the statements in the survey will be scaled with the following formation:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>1</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>3</td>
</tr>
<tr>
<td>Agree</td>
<td>4</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>5</td>
</tr>
</tbody>
</table>

3.4 Validity and Reliability

3.4.1 Validity

Validity is defined as the degree to how successfully a research’s instrument measured what it aimed to measure. (Field, 2015, p. 12-13). The accuracy of the measurement process is essential to the validity of the data processed. Lind, Marchal, and Wathan (2017) stated that the questionnaire is valid when the significance value of the Pearson Correlation coefficient scored less than 0.05 in each of the indicator. Aside from construct validity, content validity was performed to ensure that the online questionnaire that was spread contained valid...
questions. Content validity was performed through asking two alumni of Universitas Ciputra who passed the thesis successfully.

3.4.2 Reliability

According to Saunders et al. (2016), reliability is defined as how consistent the research findings are after various different attempts of research. A variable is considered to be reliable when their Cronbach Alpha coefficient value is 0.70 or above.

3.5 Data Analysis Method

3.5.1 Multiple Regression Analysis

Multiple linear regression is used in this research to analyse the data, it is used to discover how multiple independent variables affect one dependent variable (Lind, Marchal, and Wathan, 2017). Stated below the equation of the Multiple Regression Analysis:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$$

Where:

- \( Y \) = Intention to Use
- \( a \) = Constant
- \( b_1, b_2, b_3 \) = Regression Coefficient
- \( X_1 \) = Perceived Trust
- \( X_2 \) = E-Service Quality
- \( X_3 \) = Convenience
- \( e \) = Error
3.5.2. Research Tests

3.5.2.1. F Statistics Test

F Statistics Test, also known as Simultaneous Significance Test, is used to discover whether or not the independent variables have the ability to significantly affect the dependent variable (Lind et al. 2017). The independent variables are stated to hold a significant effect when the F coefficient/Sig. value is less than 0.05.

3.5.2.2. T Statistics Test

T Statistics Test, also known as Partial Significance Test, is used to discover whether the independent variables have a significant effect on the dependent variable or if they are considered unnecessary when they don’t hold an effect (Lind et al. 2017). The independents variables are stated to hold a partially significant effect when the T coefficient/Sig. value is less than 0.05.

3.5.2.3. Coefficient of Correlation (R) and Coefficient of Determination (R²)

Lind, Marchal, and Wathan (2017) defined the coefficient of correlation (R) as the relationship between two or more independent variables and dependent variable on a scale from 0 to 1. The relationship is stated to be stronger when the R value is closer to 1.

The coefficient of determination (R²) shows how much the independent variables affect the dependent variable, which is a proportion of the total variation.

3.5.2.4. Classical Assumption test
Classical Assumption test is performed in this research to ascertain the significance of each of the independent variables’ relationship with the dependent variables.

a. Multicollinearity Test

Multicollinearity is when a perfect, or near-perfect linear relationship between the independent variables exist. This is conducted through examining the Variance Inflation Factor (VIF) and tolerance level. The multicollinearity is non-existent if the VIF is measured to be less than 10 and the tolerance level to be more than 0.10 (Lind et al. 2017).

b. Normality Test

Normality test is used to determine whether or not the independent variables and dependent variable distributed normally. The data is only satisfactory to the research when it is distributed normally. The normality of the variables can be tested using the Kolmogorov-Smirnov test, variables being normal when the residual Sig. value is at least 0.05 (Lind et al. 2017).

c. Heteroscedasticity Test

Heteroscedasticity test is used to discover whether or not there are differences in the observation of the residual variances through the Glesjer test. Heteroscedasticity is non-existent if the Sig. value of each of the variables are more than 0.05 (Lind et al. 2017).
test is important because while the existence of heteroscedasticity
doesn’t result to a bias in the results of the coefficients, it will
make the result less precise, lower precision means that the
coefficient values are further from the correct population value.

d. Linearity Test
Linearity test is used to examine whether or not there is a linear
relationship between the independent variables and dependent
variable, to determine the model of the relationship. Linear relation
exists when the Sig. value of the linearity is less than 0.05 (Lind et
al. 2017).