

CHAPTER 3. RESEARCH METHODOLOGY

This section explains the methods that the author uses to do the research. This section also explains the steps taken in the research to gather and process the information gained. In addition, this section contains the research variable that the author uses.

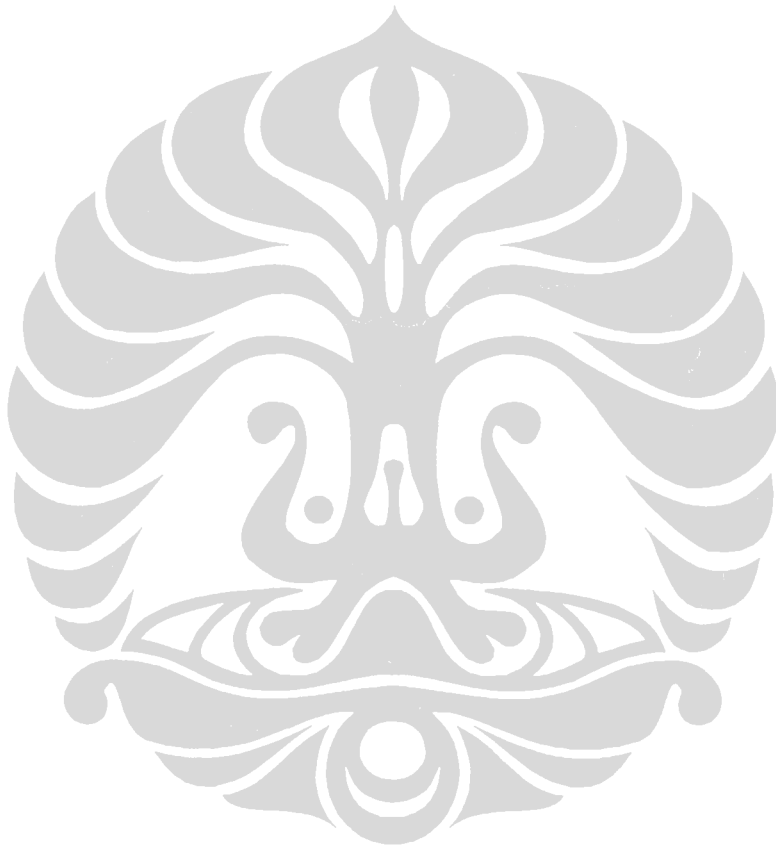
3.1 RESEARCH DESIGN

In order to align with the research background previously mentioned in the first section, this research will utilise a quantitative approach as the methodology to gain information to justify the hypothesis.

Quantitative research is a systematic scientific investigation of quantitative properties in a phenomenon [47]. Quantitative approach models the relationships between these properties. Important objective of this approach is to develop mathematical model of a phenomenon and the related theories, and later, quantitative research is crucial to justify a hypothesis proposed in a research.

In this research, the author tries to mimic previous studies done by Kim in [7] and Harris in [4] about m-commerce adoption in Hong Kong and United Kingdom. Quantitative approach is used to apply their work to capture information about m-commerce adoption in Indonesia. Because the scope of the research that is different from the previous studies, the author adjusted the research to suit Indonesian condition.

The author incorporates various data gathering and processing techniques to conduct this research. A workflow diagram of the steps taken in this research is presented below. The explanation of each step will be detailed in the following sub sections.



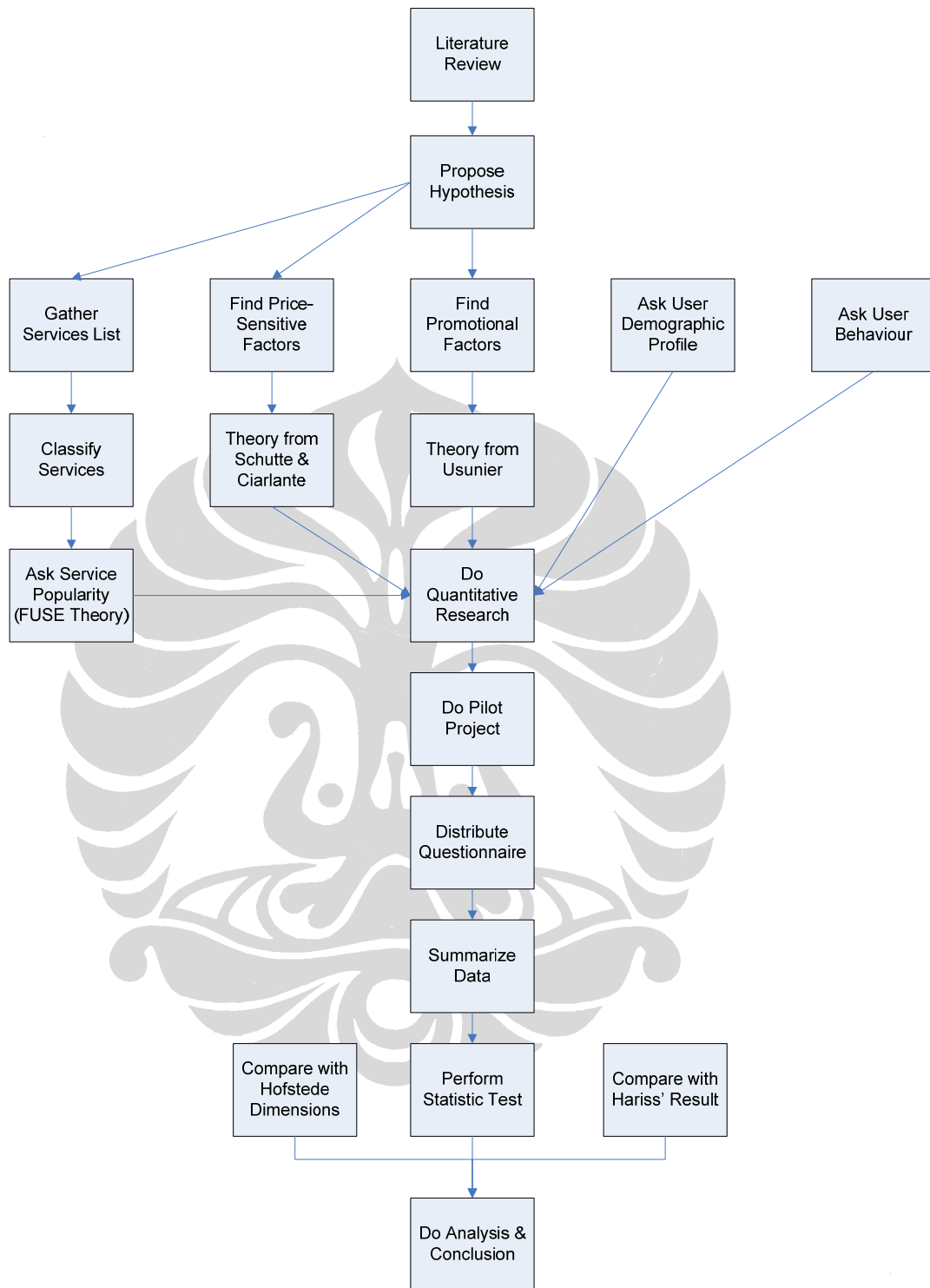


FIGURE 3.1 RESEARCH PROCEDURES DIAGRAM

3.2 POPULATION AND SAMPLING METHOD

This research limits the population sample only to the user within the age range of nineteen to thirteen years old within the University of Indonesia. This limitation is based on the assumption that this specific age range is the fastest mobile service adopter, previously proved on the work of Lee in [36]. The information taken from this age range should reflect the m-commerce adoption at most.

Because the samples are from a population that share one common characteristic (Age), the author uses Stratified sampling method [48] to obtain information from the samples.

3.3 RESEARCH VARIABLES

Based on the research of Harris et al., this research examines four variables that are important to describe culture influence in m-commerce adoption.

3.3.1 SERVICE ADOPTION

M-commerce adoption level can be determined by rating the popularity of the m-commerce services in the market. The popularity of m-commerce services will tell how well the user adopted these services. M-commerce adoption rate is said to be high if the end user have used many services through their mobile device.

Popularity of services can be measured by user attitudes toward the usage of that particular service. Based on the work of Kim [7], the service popularity can be rated by

measuring four user preferences to all services made available. Each service will be weighted based on the frequency of usage, perceived usefulness of a service, satisfaction level achieved by a user, and the amount of resources that a user must spend to use the service.

Despite that each provider offers different variety of services, this research is only interested in services that existed in every provider. Some of them are basic communicational services like Voice call and Short message service. The author excludes provider-unique services to achieve an adoption rate independent of service provider chosen.

3.3.2 INFLUENCING FACTORS

The adoption of m-commerce is tightly related with the ability of external factors that drive users to use m-commerce services. This research tries to reveal what kind of influencing factor that has the greater impact in pushing users to use services offered by service providers. The author focuses such factors on those that reflect users' sensitivity toward price, and promotional factors.

According to [34], price sensitivity can be measured by asking users to rank Discount, Free Trial and Low Cost as the most influencing factor. While promotional factors (cultural-impacted) influence will be resulted in Family Recommendation, Demonstration, Lifestyle Enhancement, and Incentive [35].

3.3.3 USER DEMOGRAPHIC PROFILE

For the purposes of this research, four variables of demographic profile are measured. Such variables include Sex, Age, Occupation, and Current Education. Other demographic variables such as salary range, race, and ethnicity are excluded because the author does not incorporate such variable in our analysis, due to their relevancy. In addition, the author does not divide the sample based on their ethnicity to keep consistent with nation as the unit of culture.

3.3.4 USER BEHAVIOUR

To rate the m-commerce adoption, this research needs to examine user behaviour toward the usage of m-commerce service. This behavioural information will be useful as a support to our analysis. This research is interested in four behavioural information such as those listed below. The results obtained from this information will be compared to those from the work of Harris [4], and used to determine whether culture impacts user behaviour in m-commerce adoption.

- The number of mobile phones the user actively uses.
- The number of service providers the user currently subscribes.
- The user fluency to mobile technology.
- The user loyalty to the current service provider.

3.4 DATA GATHERING PROCEDURE

3.4.1 PILOT PROJECT

In principle, the information about the four variables of interest in this research needs to be gathered from the user. These variables need to be asked correctly in order to get the actual information about m-commerce adoption. The author decided to use a set of questionnaire to do so. However, to reduce the ambiguity in our questions in the questionnaire, it is beneficial to take an initial pilot project within a group that have similar profile with the targeted user, to mimic the data gathering process in a larger population.

The first step in this pilot project was to generate the set of questions related to the variable mentioned. This set of questions is expected to be clear and resulting in actual information being obtained. Furthermore, the author gathers small groups of five of his colleagues and spread the set of questions and asked the group to answer it. In the filling process, the author takes a note on points considered unclear.

The crucial advantage in this pilot project is that the author can directly discuss with real users to improve the quality of the questionnaire. The pilot project will be resulted on points in the questions set that need to be corrected, thus it will make the questionnaire to be understandable and unambiguous.

To add, some variables in the questionnaire measure user preferences. To ease this measurement, the author incorporates Likert scales for users to answer particular questions.

3.4.2 QUESTIONNAIRE DISTRIBUTION

The pilot project that was previously conducted makes it easier for the author to create a clearer questionnaire. The author rewrites the questionnaire to include the correction resulted from the pilot project.

It is already defined that this research is targeting a specific user age range of 19 to 30 years old, to do so the author uses University of Indonesia students as the research population. Since the author is familiar with the environment, it is expected that the data gathering process will be efficient. To reach better confidence level than the researches done by Harris or Kim, the author increases the number of questionnaires being distributed from only 100 in Harris' research into 140 in this research. The sample of the questionnaire is attached on the appendix.

3.5 DATA PROCESSING TECHNIQUES

The data gained from questionnaire should be translated into numerical information in order to produce statistical result. The steps taken to do this are;

3.5.1 DATA SUMMARIZING

After the data is gathered from the questionnaire, the next step is to summarize the data into simplified form. In order to do so, the author will utilise SPSS version 15.0 as the statistical software to create a descriptive statistic about our data (i.e. Frequency, Mean,

Standard deviation, etc). These descriptive statistics will be useful to answer Adoption Rate, Demographic profile of samples, and Behavioural data of samples.

However, there is an additional task to compute service adoption rate. Because the research wants to compare popularity of each service category, there are two problems that may arise; first, it can not be guaranteed that the number of services in each category that is being compared is the same (i.e. services in Synchronous category vs. services in Asynchronous category). Second, each service consists of four questions of popularity (Frequency, Usefulness, Satisfaction, and Expensiveness) represented as Likert Scale.

To solve this, there are mathematical steps that have to be done; all the weight in each popularity aspect can be summed, resulted in one service popularity weight. Next, all the service popularity weights from each category need to be summed so there will be two values from different categories in each sample, ready to be compared

3.5.2 STATISTICAL TEST

The next step is to perform statistical test on the summarized data to justify the hypothesis. To fit the research condition and workflow, proper statistical test need to be chosen. At this point, there are several facts about the research.

- The data will be in numerical and interval values due to the use of Likert scale.
- The data for each service category that will be compared are paired.
- The samples will be independent.

From this fact, it is clear that Wilcoxon Signed-rank test is more suitable to this condition, not only because the data is in interval scale, but more importantly, the author does not have enough confidence to assume that the samples are drawn from normal distributed population, so the T-test can not be performed.

Fortunately, all the data processing techniques and Wilcoxon Signed-rank test can be performed within statistical software, therefore the author decide to use SPSS version 15.0 as the statistical software.

3.5.3 ANALYSIS

The last stage of this research is to translate the statistical test from each hypothesis into an analysis which correlates the justification of hypothesis with the theory on adoption. Finally, this analysis is used to describe the adoption of m-commerce in Indonesia.