

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

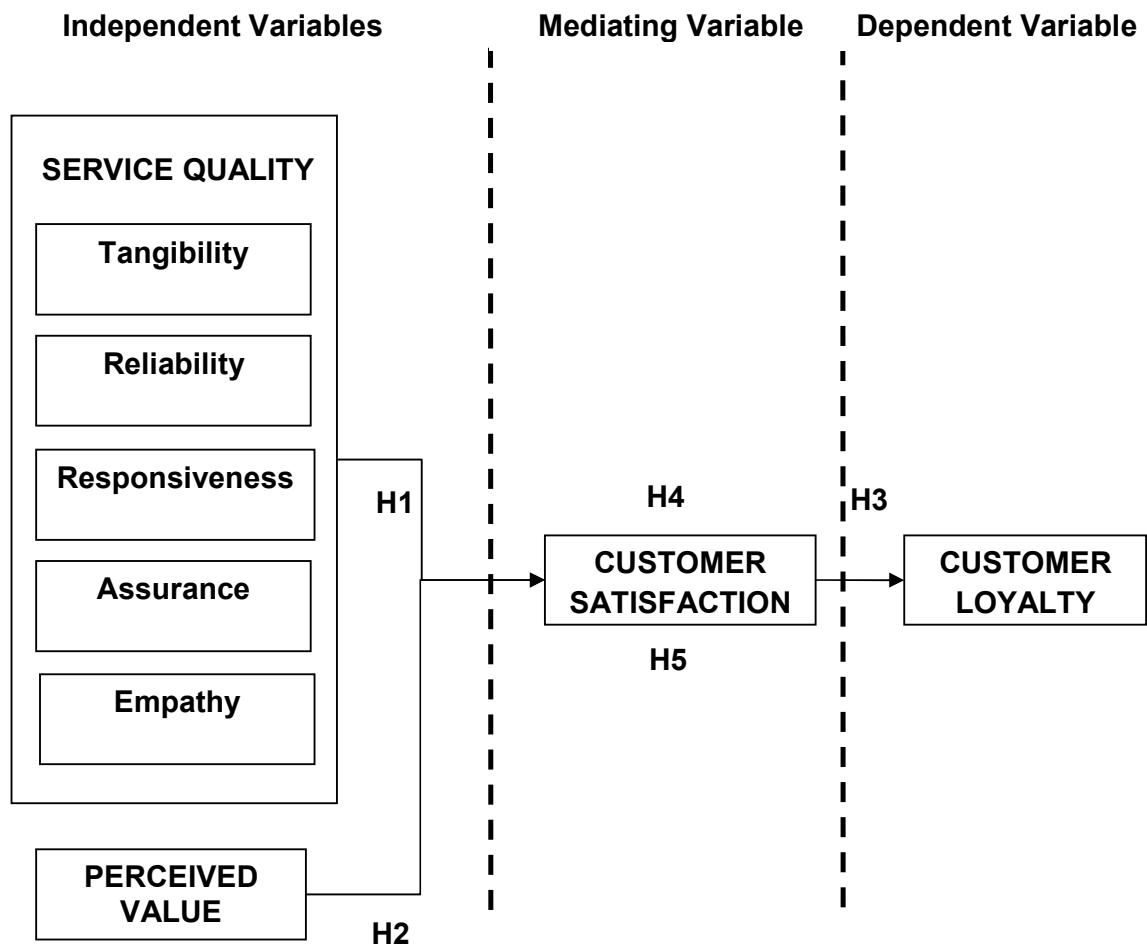
Previous chapter provides literature support and frameworks related to service quality dimensions, customer perceived value, customer satisfaction and customer loyalty. This chapter presents the proposed model framework, the development of hypotheses, selection of measures and questionnaires design, sampling design and data collection procedures, pilot test and also the data analysis techniques used in this study.

#### **3.2 PROPOSED RESEARCH FRAMEWORK**

In developing the theoretical framework, literature on the four constructs that is relevant to the research focus was reviewed. On the basis of this review, the proposed framework was drafted and the theoretical grounds and existing evidence supporting the relationships contained in this framework were described. Stemming from the above discussions, proposed theoretical framework shown in Figure 3.1 was developed. Following this, an elaboration of the hypotheses as shown in the proposed research model is provided in the next section.

The proposed framework is adopted from Tung (2004) with modifications made where behavioural intentions construct was replaced with customer loyalty and extent of usage was excluded. The proposed framework consists of two independent variables, which are service quality and perceived value. The service quality constructs consists of five dimensions, which are tangibility, reliability, responsiveness, assurance and empathy. Customer satisfaction is the mediating variable and customer loyalty is the dependent variable.

Figure 3.1: Proposed Research Framework



### 3.3 DEVELOPMENT OF HYPOTHESES

Cronin and Taylor (1992) had discussed that service quality is an antecedent of consumer satisfaction and had also pointed out that there are the five specific dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. In the context of this study, the five dimensions measured were interpreted as (1) the tangibility aspects of the telco service centre, (2) the responsiveness of the telco service centre staff, (3) the reliability of the telco service centre, (4) the assurance provided by the telco service centre staff, and (5) the empathy shown to customers. The hypotheses developed are as follows:

*Hypothesis 1: Service quality has a positive effect on customer satisfaction*

*Hypothesis 1a: Tangibility has a positive effect on customer satisfaction*

*Hypothesis 1b: Reliability has a positive effect on customer satisfaction*

*Hypothesis 1c: Responsiveness has a positive effect on satisfaction*

*Hypothesis 1d: Assurance has a positive effect on customer satisfaction*

*Hypothesis 1e: Empathy has a positive effect on customer satisfaction*

Perceived value is defined as customers general evaluation of the utility of a product based on perceptions of what is received and what is given” (Zeithaml, 1988). However, in this research, the “product” refers to the services rendered in the telco service centre. The result from Cronin et al.’s (2000) study indicates that perceived value was a significant predictor of satisfaction. In this study, perceived value is hypothesised to positively correlated to customer satisfaction.

*Hypothesis 2: Perceived value has a positive effect on customer satisfaction*

According to Zeithaml and Bitner (2000), customer satisfaction is viewed as a fulfilment response and Cronin and Taylor (1992) suggested that customer satisfaction had a significant effect on customer loyalty. Customer satisfaction was observed to be a “richer” construct compared to service quality in forecasting customer loyalty (Cronin Jr. and Taylor, 1994). In addition, Parasuraman, Zeithaml and Berry (1988) suggested that favourable behavioural intentions are linked with the service provider’s ability to get its customers to remain loyal to them and to recommend the service to other customers. Therefore, the following hypothesis is put forward:

*Hypothesis 3: Customer satisfaction has a positive effect on customer loyalty*

In investigating the relationship between customer satisfaction, service quality and service loyalty in Malta’s banks, Caruana (2002) had concluded that customer satisfaction plays a mediator role in the effect of service quality on service loyalty. This means that service quality affects service loyalty through customer satisfaction. Therefore, the following hypothesis is posited:

*Hypothesis 4: Customer satisfaction mediates relationship between service quality and customer loyalty*

Previous discussion from the literature review section suggests that customer perceived value affects customer satisfaction and customer satisfaction affects customer loyalty. Customer perceived value is also positively related to customer loyalty (Bolton and Drew 1991; Sirdeshmukh et al. 2002). Cronin, Brady, and Hult (2000) provided evidence for some of these links but did not formally test the mediating role of customer satisfaction in the relationship between customer

value and customer loyalty. However, a research with corporate clients who used the services of courier service provider concluded that customer satisfaction plays a mediator role in the effect of perceived value on service loyalty (Lam et al. 2004). Thus, the following hypothesis is proposed:

*Hypothesis 5: Customer satisfaction mediates relationship perceived value and customer loyalty*

### **3.4 SELECTION OF MEASURES**

All items used to measure the constructs to confirm content validity were adapted from several previous studies. Four sets of scale were used in this study. First, SERVPERF, a 22-item scale developed by Cronin and Taylor (1992), was used to measure service quality. This scale was assessed on a six-point Likert scale ranging from “strongly disagree” to “strongly agree.”

Perceived value is a trade-off between what customers receive and what they sacrifice. Perceived value was measured by four-item scale, which was adapted from Dodds et al. (1991) and was assessed on a six-point Likert scale ranging from “strongly disagree” to “strongly agree.”

Customer satisfaction is a customer’s positive feeling about a service provider and the overall evaluation of the consumption experience (Lai et al., 2009; Oliver, 1997; Stank, Goldsby and Vickery, 1999). Four-item scale was used to measure customer satisfaction, which was adapted from Oliver (1980) and was

assessed on a six-point Likert scale ranging from “strongly disagree” to “strongly agree.”

Customer loyalty is related to a service provider’s ability to maintain its customers’ loyalty and persuade them to recommend its services to potential customers (Zeithaml et al., 1996). Seven-item scale was used to measure customer loyalty, which was adapted from Gremler (1995) and Zeithaml, Berry, & Parasuraman (1996). This scale was measured on a six-point Likert scale ranging from “strongly disagree” to “strongly agree.”

### 3.5 QUESTIONNAIRE DESIGN

In the process of collecting data, a questionnaire was developed to ensure that all the information required for analysis would be obtained. Ary et al. (1990) stated that questionnaire assures confidentiality to the respondents that further elicit more truthful responses. Furthermore, this method is less time consuming and inexpensive compared to personal and telephone interviews (Singleton et al., 1988). As such, the 46-item questionnaire was divided into five parts:

- Section A: Customers' evaluation on Service Quality
- Section B: Customer Perceived Value
- Section C: Customer Satisfaction
- Section D: Customer Loyalty
- Section E: Demographic/Socioeconomic

Section A of the questionnaire was used to evaluate customers' service quality perception of the telco service centre, and it was measured using SERVPERF, a 22-item scale. SERVPERF developed by Cronin and Taylor (1992) is an improvised version of an earlier scale developed by Parasuraman et al. (1985, 1988). Kasper et al., (1999) also pointed out that the composition of the questions should both be worded positively and negatively in order to avoid artificial results. In this study however, the subjects were asked to evaluate 22 items using the rating of a six-point scale, most items were worded positively in short statements by indicating their level of agreement or disagreement with

each statement by circling the appropriate number from 1 to 6, with 1 being strongly disagree and 6 being strongly agree (refer to Appendix 1).

Section B of the questionnaire was designed to evaluate customers' perception of the value of the services offered by the telco service centre. This construct was measured using a four-item scale, which were worded positively, where subjects were asked to indicate their level of agreement or disagreement with each statement by circling the appropriate number from 1 to 6, with 1 being strongly disagree and 6 being strongly agree (refer to Appendix 1).

Section C in the questionnaire was devised to assess customers' satisfaction on the services rendered by telco service centre that they patronize. This construct was measured using four-item scale, which were worded positively. Subjects were asked to indicate their level of agreement or disagreement with each statement by circling the appropriate number from 1 to 6, with 1 being strongly disagree and 6 being strongly agree (refer to Appendix 1).

Section D of the questionnaire was used to evaluate customers' loyalty towards the telco, which stemmed from their satisfaction towards the quality services provided by the telco service centre. This construct was measured using seven-item scale, which were also worded positively. Subjects were asked to indicate their level of agreement or disagreement with each statement by circling the appropriate number from 1 to 6, with 1 being strongly disagree and 6 being strongly agree (refer to Appendix 1).



Section E of the questionnaire consists of nine items of demographic/socioeconomic and affiliation characteristics of the subjects i.e. gender, age, education, occupation, marital status, income as well as telco patronage. This section was very essential to the study as these items were used to cross-clarify the data collected (refer to Appendix 1).

### **3.6 SAMPLING DESIGN AND DATA COLLECTION PROCEDURES**

The unit of analysis in this study is the existing customers who have previously received any type of services at any telco service centre at least once. Subjects for this study were obtained from two separate convenience samples: (a) the first sample group was obtained from subjects who were invited via email to answer the online version of the questionnaire; and (b) the second sample group was obtained individually from subjects who were visiting the service centre of any of the six Malaysian telecommunication companies in the Klang Valley, namely Celcom, Digi, Maxis, P1, Telekom Malaysia and UMobile.

The questionnaires were distributed via email for the online version and personally in several telco service centres in Klang Valley for the hardcopy version. An email was sent to 200 recipients with the invitation to answer the questionnaire online. Invitations were also extended in Facebook to 200 contacts. Another follow up email and Facebook invitations were sent one week later to the same recipients. Out of total 400 recipients invited, 167 responded and completed the questionnaire online. Meanwhile, out of 400 survey questionnaires distributed in several telco service centres, 356 copies were

returned. Data screening and cleaning were performed on the returned questionnaires for incomplete or missing data. Questionnaires with mostly unanswered questions were discarded (Biemer & Lyberg, 2003). Finally, 136 usable online responses were identified after screening and cleaning, which is equivalent to 34% response rate. On the other hand, 305 of the completed personally distributed questionnaires were usable, which is equivalent to 76.25% response rate. Therefore, the total usable response used in the subsequent statistical analyses is 441.

### **3.7 PILOT TEST**

A pilot test was conducted in order to refine the construction of the questionnaire, and to assess the reliability of measures employed before it was used for actual data collection. The pilot study consists of 25 respondents, with 10 male and 15 females. From the feedback gained from the respondents in this pilot test, some items were reworded.

### **3.8 DATA ANALYSIS TECHNIQUES**

The data collected from the sample was analyzed using Statistical Package for the Social Sciences (SPSS) program version 17.0. First of all, the data was coded before being keyed in to the SPSS worksheet in order to begin the analyzing steps. SPSS program provides an easy task for researchers in evaluating and managing information gathered from primary data. In addition, it provides a lot of useful statistical tools for evaluating data in testing the study hypothesis. Three major statistical analysis tools were employed in this study, which were descriptive statistics, inferential statistics, and reliability analysis.

#### ***3.8.1 Descriptive Statistics***

Descriptive statistics were applied to summarize demographic profile of the respondents by giving a descriptive sense of the typical scores and their variations. Central tendency and dispersions of perceived value, satisfaction, loyalty and overall service quality variables were measured using this technique. Variance and standard deviation were obtained to measure variability around the mean of a distribution. In order to test the normality of the variables, both skewness and kurtosis of the variables are observed. Using the rule of thumb cited by Miles and Shevlin (2001), the acceptable range for normality is -1.0 and 1.0. A symmetric distribution has a skewness value of zero. Negative values indicate data that are left skewed and positive values indicate data that are right skewed.

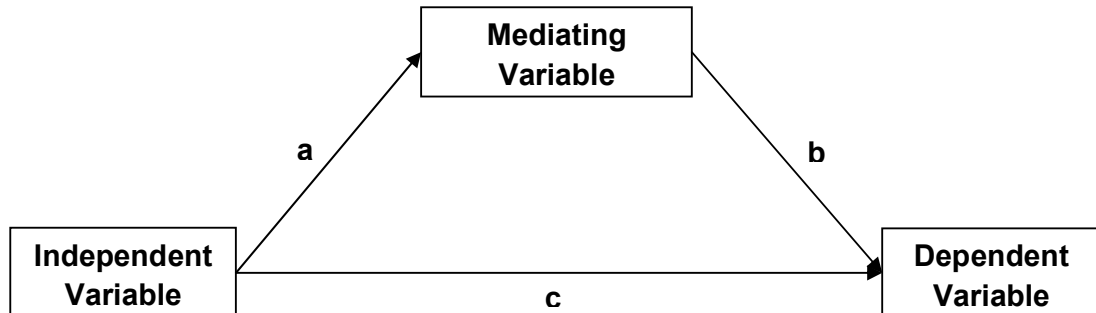
The hypotheses and their relationships were first tested through correlation analysis. This research used correlation analysis to measure whether relationship exists between the independent and dependent variables. Correlation analysis indicates if a linear relationship exists between two variables and it also describes the strength and direction of the linear relationship. In this study, Pearson product-moment correlation coefficient is calculated between each of the service quality dimensions and satisfaction, perceived value and satisfaction as well as between satisfaction and loyalty (H1 to H3 including sub-hypotheses H1a-H1e). A perfect positive correlation has a coefficient of 1.0, no correlation has a coefficient of 0 and a perfect negative has a coefficient of -1.0.

### ***3.8.2 Inferential Statistics***

In this study, inferential statistics were used to measure the degree of relationship between two or more variables and for drawing conclusion about the population. Second hypotheses testing via multiple regression was employed to explore how well tangibility, reliability, responsiveness, assurance and empathy predict customer satisfaction (H1a-H1e), service quality and perceived value predict satisfaction and satisfaction predicts loyalty (H1-H3). In this research, the most commonly used multiple regression analysis was used, which is the standard or simultaneous multiple regression. In the analysis, all the independent (or predictor) variables are entered into the equation simultaneously. Each independent variable is evaluated in terms of its predictive power, over and above that offered by all the other independent variables (Tabachnick and Fidell, 1989). The regression analysis was also used to test

the mediating role of satisfaction in the relationship between service quality and loyalty (H4) and between perceived value and loyalty (H5). Mediated relationships can be represented graphically as shown in Figure 3.2 below:

Figure 3.2: Mediation Model



Mediation test technique was developed using Baron and Kenny (1986) and its universal application has made it valuable, authentic and a widely accepted technique to assess mediation effects in variable testing. According to Baron and Kenny (1986), testing for mediation involves establishing four conditions: (i) the independent variable is significantly related to the dependent variable (path c), (ii) the independent variable is significantly related to the mediating variable (path a), (iii) the mediating variable is significantly related to the dependent variable (path b), and (iv) when controlling for the effects of the mediating variable on the dependent variable, the effect of the independent variable on the dependent variable (path c) is no longer significant.

According to Judd and Kenny (1981 b), in order to test for mediation, three following regression analyses must be conducted: first, regressing the

dependent variable (loyalty) on the independent variable (service quality/perceived value) (path c); second, regressing the mediator (satisfaction) on the independent variable (service quality/perceived value) (path a); and third, regressing the dependent variable (loyalty) on both the independent variable (service quality/perceived value) and on the mediator (satisfaction). In this last regression, hierarchical regression analysis is performed in two steps: at step 1, the dependent variable (loyalty) is regressed on the mediating variable (path b); at step 2, the dependent variable (loyalty) is regressed on the independent variable (service quality/perceived value) again (path c). The beta for all the paths is examined to determine the strength, direction and significance of the relationship between the variables.

### **3.8.3 Reliability Analysis**

Reliability of the instruments used in the study was one of the major concerns. The reliability scale text will be utilized to evaluate the internal consistency of the five dimensions of service quality. Measurements are reliable if they are true rather than chance aspects of the trait measured. Thus, this implies that the instrument must be reliable to the extent that the scores made by the respondents remain approximately the same in repeated measurement. In determining the reliability of the instruments, the Cronbach's Alpha was used to measure reliability of the underlying dimensions i.e. tangibility, reliability, responsiveness, assurance and empathy. The Cronbach's Alpha estimate indicates how highly the items in the questionnaire are interrelated in order to

determine reliability of the instrument (Hayes, 1998). Nunnally (1978) said that the Alpha which is more than 0.70 indicated a high reliability.

### **3.9 CONCLUSION**

This chapter has presented the fundamental structure of the research methodology employed in this study. The proposed research theoretical framework was adopted from previous researcher's research model. Ten hypotheses were developed and the measures and questionnaires design were also adopted from previous studies. Convenience sampling was chosen due to time limitation and 441 usable questionnaires were analysed using SPSS to validate the hypotheses. Results on measurement validation and hypotheses testing are presented and discussed in the following chapter.