CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology of the study. The discussion of the methodology covers an overview of the research framework; the research hypotheses; the measurement of constructs; questionnaire design; research sampling techniques; data collection technique; and lastly is the description of the data analysis technique.

3.2 RESEARCH FRAMEWORK

A number of studies have been undertaken to examine the interrelationships among service quality, corporate image, student satisfaction, student loyalty or positive word-of-mouth in higher education institutions around the world. However, not much research has been conducted to evaluate these relationships in a Malaysian private university. Therefore, this study is an initiative to examine these relationships at a young and fast-growing private university in Malaysia. The framework is shown in Figure 3.1 as follows:

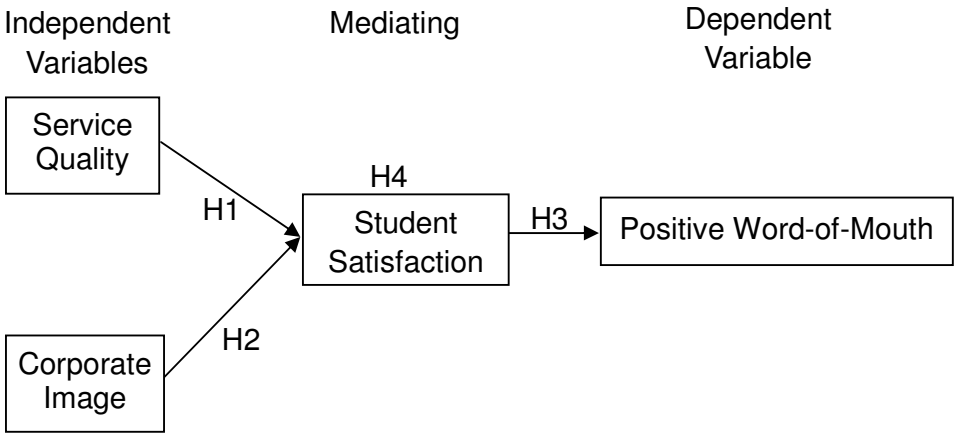

Figure 3.1 Research Framework

In this study, the research framework is replicated from the study of Mohamad and Awang (2009), which was conducted at a public university in Malaysia; and this framework was supported by another researcher (Brown and Mazzarol 2009), who had also used a similar research framework to conduct their research at an Australian higher education.

Based on the research framework, this study analyses two factors: service quality and corporate image which are predicted to have an influence on student satisfaction and in turn bring impact to positive word-of-mouth. This study also examines the mediating effect of student satisfaction on the relationship between: service quality and positive word-of-mouth; corporate image and positive word-of-mouth. Every element will be further discussed in the following section

3.3 RESEARCH HYPOTHESES

Hypotheses

Based on the proposed framework above, the following hypotheses have been developed for further testing:

H1: Service quality positively influences student satisfaction.

H2: Corporate image positively influences student satisfaction.

H3: Student satisfaction positively influences positive word-of-mouth.

H4a: Student satisfaction significantly mediates the relationship between service quality and positive word-of-mouth.

H4b: Student satisfaction significantly mediates the relationship between corporate image and positive word-of-mouth.

3.4 MEASUREMENT OF CONSTRUCTS

The core objective of descriptive research is to examine the relationships between variables. The descriptions of the variables in a study are greatly related to the objectives of the study. The variables are also used to examine the proposed hypotheses in the study (Cooper and Schindler, 2003). Three variables have been identified in this study. The independent variables are service quality and corporate image while the dependent variable is student satisfaction and the mediating variable is positive word-of-mouth. Independent variables have effects on dependent variables (Walker, 1999). Meanwhile, the mediating variable is the linking element that transfers the effects of independent variables to dependent variables. For example, the middle variable is considered as a mediator in a theoretical causal chain of three or more variables (Tabachnick and Fidell, 2007).

In this study, the measurements of the constructs are adopted from past studies. All the scales were reported reliable and valid in past studies and were weighted with ten-point Likert scale where “strong disagree” = 1 and “strongly agree” = 10. The scale 1-10 has been adopted to minimizes the bias in answers provided (Fornell, 1992)

3.4.1 Measuring the Service Quality Construct

Service quality is usually described as the consumer’s evaluation of the overall excellence of the service (Zeithaml, 1988). A 22-item SERVQUAL scale, measuring customer satisfaction with service, which incorporating with five dimensions: Tangible, Reliability, Responsiveness, Assurance and

Empathy, has been formulated by Parasuraman et al. (1988). Several previous studies have applied the SERVQUAL scale to evaluate service quality in various service activities (Bojanic and Rosen, 1994; Gournaris, 2005, Fu and Parks, 2001). This method of measuring service quality would be useful to other institutions to determine the level of student satisfaction towards their service quality (Kerlin, 2000). Veloutsou et al. (2004) state that quality of education and services rendered by university have major influence on students' selection of a university. Service quality is a main source of attraction, satisfaction and retention of students which have a direct impact on financial standing, job security and feasibility of institution (Low, 2000).

Nowadays, in an increasingly competitive environment in the service industry, quality service is important for corporate success. High quality service is directly related to profits, cost savings, and market share. Leading companies have attempted to improve their quality measurement systems to improve their customers' perceptions and expectations. Assessing quality is more comprehensive for service industries as compared to manufactured products (Devin and Dong, 1994). Parasuraman, Zeithaml and Berry (1994) have revised and refined the SERVQUAL instrument. They have provided significant contributions to move forward a workable measure of service quality.

In education assessment, the process of creating an effective learning experience involves effective design of academic content (Biggs, 1999). Knight (2002) has found that the quality of the commitment in the learning

environment and the courses are factors influencing successful learning effects. SERVQUAL has been used by researchers to evaluate service quality in various industries including higher education (Woodside, Grey and Faly, 1989). The SERVQUAL established by Parasuraman, Zeithaml and Berry (1985, 1988, 1991 and 1994) and Zeithaml, Parasuraman and Berry (1990) has been proven to be a reliable instrument for measuring expectations and perceptions of service. However, customer perceptions of service performance are assessed rather than the expectation of customer perceptions by Cronin and Taylor (1992 and 1994).

This study uses the five dimensions of SERVQUAL which is adapted from (Ham, 2003). Ham (2003) modified the SERVQUAL developed by Parasuraman, Zeithaml and Berry (1988), as a measuring instrument, to examine student perceptions and needs in higher education institutions. The rationale for adopting the instrument used by Ham (2003) as the main reference for this study is based on the fact that the reliability of the instrument has yield alpha values more than 0.70. Cronbach's alpha is computed to provide evidence of reliability and Cronbach alpha value above 0.70 is usually considered acceptable (Nunnally, 1959).

3.4.1a Tangible

The experiences of utilising physical facilities and equipment, and appearance of personnel have a strong link to the tangibility quality dimension. Items to measure the tangible dimension of service quality are shown in Table 3.1

Table 3.1
Items to Measure the Tangible Dimension of Service Quality

Item No.	Statement
19	The university has employees who have a neat professional appearance
20	The university has convenient business hours
21	The university has modern classroom facilities & equipment
22	The university makes students feel safe in their transactions

3.4.1b Reliability

The reliability dimension is considered the ability of higher education institution to provide its service in an accurately and dependably manners. In this study, statements to elicit responses on student perceptions are shown in Table 3.2.

Table 3.2
Items to Measure the Reliability Dimension of Service Quality

Item No.	Statement
1	The university provides prompt service to students
2	The university has employees who are consistently courteous
3	The university has employees who deal with students in a caring fashion
4	The university provides services at the promised time
5	The university has employees who understand the needs of the students

3.4.1c Responsive

Responsive is indicated by the willingness of administrative and academic staff to help students and to provide prompt advice and service. This dimension is decisive in quality image enhancement. These support services extend the learning experience beyond the classroom environment. The items are shown in Table 3.3.

Table 3.3
Items to Measure the Responsive Dimension of Service Quality

Item No.	Statement
6	The university has visually appealing materials associated with the service (eg., on campus signs)
7	The university has the student's best interest at heart
8	The university has employees who is willing to help students
9	The university is maintaining error-free records

3.4.1d Assurance

Assurance here means on the staff's ability to demonstrate competency, courtesy, credibility, security, and the level of knowledge possessed thus inspiring trust and confidence. Assurance can be tested by examining the priority level of students by staff such as students as the "customers" should be informed about the complimentary services which available in the university. The items are showed in Table 3.4.

Table 3.4
Items to Measure the Assurance Dimension of Service Quality

Item No.	Statement
10	The university always keep students informed about when services will be performed
11	The university provides services as promised
12	The university has employees who instill confidence in students
13	The university has employees who have the knowledge to answer students questions

3.4.1e Empathy

Empathy is another dimension of SERVQUAL. It emphasizes on human relation such as attending specific individual needs, giving more attention and taking note of students' best interest. The items are shown in Table 3.5.

Table 3.5
Items to Measure the Empathy Dimension of Service Quality

Item No.	Statement
14	The university is dependable in handling students' service problems
15	The university is always ready to respond to students' requests
16	The university performs services right the first time
17	The university has visually appealing classrooms & campus
18	The university is giving students individual attention

3.4.2 Measuring the Corporate Image Construct

The items of corporate image are taken from the research conducted by Brown and Mazzarol (2009), which have been used to examine the views of students in the Australia universities. This construct consisted 18 items and

divided into three categories namely study environment; practicality; and conservativeness. The first category–study environment items such as to assess whether the university is viewed as friendly, supportive, innovative, student focused, and an institution that offers wide range of courses. Meanwhile, the second category–practicality–is used to assess whether the intake is flexible and study programmes are job oriented, and third category–conservativeness–is used to assess whether the institution is viewed to be long-established, modern or highly prestigious. The 18 items are shown in Table 3.6.

Table 3.6
Items to Measure the Corporate Image Construct

Item No.	Statement
1	This University is fun.
2	This University is friendly.
3	This University has high teaching quality.
4	This University is supportive.
5	This University has a wide range of courses.
6	This University has a high academic reputation.
7	This University is innovative.
8	This University has high prestige.
9	The academic staff have good qualifications.
10	This University is student-focused.
11	This University's courses are job-oriented rather than research-oriented.
12	This University is flexible in its entry options.
13	The study programme here is very difficult.
14	The study programme here has a local rather than an international focus.
15	This University has a traditional rather than a modern approach.
16	The courses here are practical rather than theoretical.
17	This University is long established rather than modern.
18	Graduates from this university find jobs easily.

3.4.3 Measuring the Student Satisfaction Construct

Some researchers argue that satisfaction and service quality measure the same thing (Spreng and Singh, 1993). However, the majority researchers state that they are dissimilar (Parasuraman, Zeithaml and Berry, 1988; Bitner,

1990; Boulding, 1993; Oliver, 1993; Rust and Oliver, 1994). Quality is one of the factors for satisfaction decision (Rust and Oliver, 1994). Dabholkar, Shepherd and Thorpe (2000) point out that customer satisfaction strongly mediates the effects of service quality on behavioural intentions. In this study, this construct measures the overall student satisfaction based on the overall experience of service quality and overall corporate image of the university. This question was taken from Ham (2003).

3.4.4 Measuring the Positive Word-of-Mouth Construct

The studies undertaken by Zeithaml, Berry and Parasuraman (1996); Zeithaml (2000) focused on behaviour intentions, which are governed by service quality and customer satisfaction. Behavioural intention appears when customers say positive things about the company, recommend the company to someone seeking for advice, encouraging friends or relatives to use the service and products of the company, remaining loyal to company and willing to spend or pay more to the company (Ham, 2003).

In educational institution settings, studies have shown that there are strong links between service quality and behavioral intentions such as saying positive things about the university (Boulding et al., 1993), financial contribution, recommending the university to employers where a place to recruit, recommending the university or its services to others (Parasuraman, Zeithaml and Berry, 1988; Reichheld and Sasser, 1990), willing to pay more, expressing preference to others, repurchase intention and increasing volume of business with a company in future (Labarbera and Mazursky, 1983; Rust

and Zahorik, 1993). Three items are extracted for this construct from a previous study by Ham (2003), but the behavioural intentions measured are reduced to focus only positive word-of-mouth in the current study. The items are shown in Table 3.7.

Table 3.7
Items to Measure the Positive Word-of-Mouth Construct

Item No.	Statement
1	Would you say positive things about your university to other people?
2	How likely are you to recommend your university to someone who seeks your advice?
3	How likely are you to encourage friends and relatives to do business/study in this university?

3.5 QUESTIONNAIRE DESIGN

This is a quantitative study whereby the instrument of study is questionnaire. It was used to collect data from the students who were pursuing their studies in a higher learning institution. This instrument was used because questionnaire survey is able to capture a much wider data set, which is used for the evaluation of perception and performance of specific aspects (Cronin and Taylor, 1992; Lawson, 1992; Widrick et al., 2002). In addition, a questionnaire survey can reach a large number of individuals at the same time. It is less expensive and consumes less time than interviewing (Sekaran, 2003).

3.5.1 Designing the Questionnaire

4-page of questionnaire was developed with a cover page to explain the background of researcher and the objective of the study. Hardcopy and softcopy of the questionnaire were distributed to selected respondents. The questionnaire has a total of 48 statements or close-ended questions. All the

items were adapted or replicated from previous studies. Every item in the questionnaire is a statement or question which is rated according to a Likert scale. All items were measured by using a ten-point Likert scale where 1 = strongly disagree/extremely poor/very dissatisfied/not at all likely whereas 10 = strongly agree/ extremely good/ very satisfied/ extremely likely.

Out of 48 closed-ended questions, part A consists of 22 conceptual items where the students were requested to state their perception of service quality of the university. Part B consists of 18 items which get the respondents to rate their view of corporate image they perceived on the university. Six items from Part C covers statements relating to the perception of overall service quality, overall corporate image, overall satisfaction and positive word-of-mouth. The last two questions part D was added solely for additional references. They are: (1) what is the most heavily influence the student decision to study in this university; and (2) how did the student come to know the university before joining the university. Part E consists of eight questions on demographics where six questions were asked pertaining to student's demographic characteristics such as gender, ethnicity, age, faculty of study, year in programme study and year in the university (as some of the students are in their foundation level of study in this university). To have a better understanding of the students' family background, two questions were included: (1) the parent's highest education; and (2) family monthly gross income. All the aforesaid items of the questionnaire are shown in Appendix 1.

3.5.2 Pilot Test

Bryman and Bell (2007) encourage a pilot test be carried out before an actual study is conducted. It can reduce final questionnaire errors. 50 students were selected from four campuses of the University for a Pilot Test. The pilot test results showed that the questionnaire structure was easily understood by the students and they took approximately ten minutes to answer all the questions. From the pilot study, it was recognised of the need to fine tune one question which respondents ticked more than one answer whereby only one answer was requested.

3.6 SAMPLING DESIGN

3.6.1 Target Population

The target population for this study was the undergraduates of a private university in Malaysia. This private university is a fast growing and young higher education institution. It is a non-for-profit university which is worth examining due to its rising prominence. The university consists of one campus in the state of Perak and three campuses in Klang valley. Those in Klang valley are Kuala Lumpur Campus, Sungai Long Campus and Petaling Jaya Campus. The respondents come from different academic years, courses and ethnicities. Postgraduate students are not taken into account for this study. They could be considered for inclusion in future research.

3.6.2 Sampling Procedure

This survey involved undergraduates from eight faculties and the Institute of Chinese Studies spread over four campuses. The sample size of this survey

was 400 students, and the method of sampling was based on stratified sampling according to the campus, and proportional allocation based on the total number of students in each campus. All students participated on anonymous and confidential basis. The majority of the students in this university were Chinese. The ratio of ethnicity for Chinese: Malay: Indian: Others were 94.7: 0.5: 4.7: 0.2. The distribution of the sample size of 400 was an attempt to represent all the students in the University for this study.

3.6.3 Sample Size

The sample size is important where the findings from an inappropriate number of samples would not be able to represent the existing population (Pallant, 2005). In this study, the research framework was replicated from Mohamad and Awang (2009), who conducted their research towards a public university in Malaysia, and the research framework was also supported by another researchers, Brown and Mazzarol (2009), who had also using the similar research framework to conduct their research in an Australian higher education. Brown and Mazzarol (2009) had collected a total data set of 373. Meanwhile, Mohamad and Awang (2009) determined the total number of sample size based on Hair et al. (1995). According to Hair et al. (1995), the sample size should be at least five times the number of items in the questionnaire, In this study, there were 48 items. Thus, at least 240 (48 X5) samples to be solicited. Thus, 400 usable and valid responses were adequate in this study. However, Hair et al. (1995) also suggest that it is highly recommended if the study able to get a sample ten times the number of measuring items in the questionnaire. That is means 480 (48 x 10) samples

are needed in this study.

3.7 DATA COLLECTION PROCEDURE

The questionnaire was distributed using two methods. First, hardcopy was distributed to the students during classes. Second, online survey was developed, and blast emails to all the students. The response rates for the first attempt were low. Eventually, with the assistance from respective deans and staff of the university, the second response rates were boosted to the total target sample size of 400 within two weeks. It had been accomplished up to 632 responses for the subsequent two weeks. After data filtering, a total number of 600 responses were valid and useable that could represent a total number of the university. The 32 responses were excluded due to incomplete responses and invalid answers. The total number of responses has fulfilled the required sample size stated by Hair et al. (1995). Out of the 600 response, 43.8 percent were male and 56.2 percent were female. The average age of students was between 20-22 years. Most of them have been in the current university approximately two years.

3.8 DATA ANALYSIS TECHNIQUES

Data collected was compiled and analysed using the Statistical Package for Social Sciences (SPSS) Version 16 program. All data were coded, categorised and input into SPSS for analyses and interpretation. Descriptive Statistics, Cronbach's Alpha, Pearson Correlation and Hierarchical Multiple Regression were employed to compute the data collected to answer the proposed research questions.

3.8.1 Descriptive Statistics

Descriptive statistics involving means, standard deviation and frequencies to outline the main characteristics of the data collected were used. In this study, descriptive statistics was used to generate frequency percentage to explain the demographic characteristics of respondents.

3.8.2 Reliability Assessment

In this study, the reliability of the scale was tested. Cronbach's alpha was undertaken to assess the internal consistency and reliability of the variables to ensure consistent measurement across time and various items in the instrument (Sekaran, 2003). Cronbach's alpha is the most widely accepted and used method for testing of multi-item scale (Cooper and Schindler, 2003). Values range of Cronbach's alpha is from 0 to 1 where the higher value representing better reliability (Pallant, J., 2007). The level of reliability is also depending on the nature and purpose of the scale. Cronbach alpha values are dependent on the number of items in the scale. If the items are less than 10, then the value can be quite small. Thus, it is recommended to calculate the mean inter-item correlation for the items where the range is from 0.2 to 0.4 (Briggs and Cheek, 1986). Anyhow, in this study, the items in questionnaire are 48 items. Thus, it won't be affected.

The Cronbach value is relatively influence by the number of items in a survey. The commonly acceptable Cronbach value is at least 0.70. (DeVellis, 2003; Nunnally, 1978). However, Alexandris et. al., (2002) propose that items with alpha value less than 0.60 are also accepted. If the items in a survey are less

than ten, the Cronbach values normally below 0.5. In this situation, Briggs and Cheek (1986) suggest to refer the mean of inter-item correlation for the items which is acceptable in a range of 0.2 to 0.4.

3.8.3 Correlation Analysis

Pearson correlation is a technique used to describe the relationship between two variables in a linear fashion (Pallant, J., 2001). In this study, Pearson correlation was used to describe the strength and direction of the linear relationship between each of the independent variables and the dependent variables. The range of value for correlation coefficient is from -1 to +1. The value of -1 means that the two variables have perfect negative correlation. The negative sign refers to direction and the value r = 1 indicates the perfect strength of the relationship between two variables (Pallant, J., 2007).

3.8.4 Multiple Regression

In this study, multiple regression analysis was used:

1. to test the significance of hypotheses;
2. to determine which factor (service quality or corporate image) that influences student satisfaction predominantly;
3. to identify the most influence dimension of service quality on student satisfaction; and
4. to assess the mediating effect of student satisfaction on the relationship between service quality and corporate image to positive word-of-mouth.

To establish mediation, the following are the three tests must be conducted to

obtain the fulfillment of the conditions:

1. evaluate whether the independent variable affects mediator;
2. evaluate whether the independent variable affects the dependent variable; and
3. evaluate whether the mediator affects on the dependant variable.

These three tests are to verify the role of mediator in the relationship between independent and dependant variables (Baron and Kenny, 1986; David Howell, 2006; G. Pierce, 2003). Baron and Kenny highlighted that if the three conditions were fulfilled, then the impact of the independent variable on the dependent variable is significantly less in third equation as compared to second equation.

In this study, the multiple regression was applied to test the mediator (student satisfaction) on the relationship between the independent variables (service quality and corporate image) and the dependent variable (positive word-of-mouth). This technique of analysis has been claimed as one of the good ways to examine the mediating effect. This claim has been supported by several researchers.

To establish mediation, the first step of the multiple regression tests was to determine the relationship between the independent variable and the dependent variable. The following was the step to identify the relationship between independent variable and mediator. Subsequently, it was to determine the role of mediation whether it carries the influence between the

independent variable and the dependent variable. In sum, the steps of multiple regression tests for mediator could be conducted to examine the relationships of variables are listed as follows:

(a) The independent variable significantly influences the dependent variable;

(b) The independent variable significantly influences the mediator;

(c) The mediator significantly influences the dependent variable (with the predictor accounted for); and

(d) If the conditions of (a) to (c) have been fulfilled. Subsequently, a verification is done to see whether the addition of a mediator to the full model (c) reduces the relation between the independent variable and the dependent variable in (a)

(Baron and Kenny, 1986; MacKinnon, et al., 2002; G. Pierce, 2003; Grayson N. Holmbeck, 2006; David Howell, 2006)

3.9 CONCLUSION

This chapter has elaborated the research methodology of this study. The discussions included research framework, research hypotheses, measurement of constructs, questionnaire design, sampling design, data collection procedure and lastly, data analysis techniques. There are three types of variables in this study, namely independent variable (service quality and corporate image), mediator (customer satisfaction) and dependent variable (positive word-of-mouth). This is a quantitative study, whereby a questionnaire is used as an instrument in this study. The questionnaire was developed based on previous studies. The target population was

undergraduate students from all the faculties regardless of the courses and academic years. A total sample size of 600 respondents was taken into analysis. The method of sampling is based on stratified sampling according to the campus, and proportional allocation based on the total number of students in each campus. All students participated on anonymous and confidential basis. Data were collected through two methods. Firstly, printed copies of the questionnaire were distributed to the students during classes. Secondly, softcopies of the questionnaire were blasted out via email to all the students with the assistance from the university's faculty staff.

The data of this study were analysed by using a number of statistical techniques. Descriptive analysis was employed to illustrate the main characteristics of the respondents. The reliability of the constructs was tested using Cronbach coefficient alpha to measure the internal consistency of a scale. Correlation analysis was used to describe the relationship between two variables in a linear fashion. This is to determine whether the relationship of the two variables indicates strong or weak relationship and positive or negative relationship. Lastly, multiple regression was applied to test the significance of hypotheses in this study.