Chapter 3: Research Methodology

3.1 Introduction

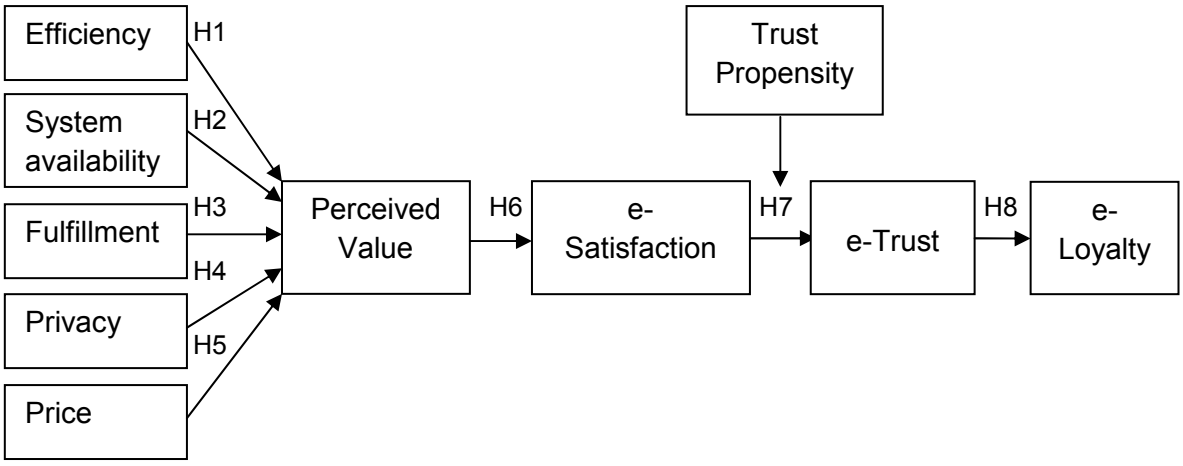
Having viewed previous findings in Chapter 2, this Chapter will elaborate on each individual variable of the proposed research framework and all proposed hypotheses to be measured with regard to the e-service quality of Malaysian LCCs.

3.2 Justification for the Research Framework

For the purpose of this study, online service quality dimensions such as Efficiency, System Availability, Fulfillment and Privacy, is adopted as part of the measurement on perceived value of online ticketing services provided by Malaysian LCCs. These dimensions are considered the most comprehensive in measuring service quality in electronic environment. In addition, the price dimension is added to form part of the proposed conceptual framework to investigate the extent of price in influencing perceived value of online ticketing services especially in no-frills airlines. Subsequently, the relationship between perceived value, e-satisfaction and e-loyalty is to be studied in this research. Meanwhile, e-trust dimension is to be tested as the mediator between e-Satisfaction and e-Loyalty in LCCs online ticketing service context.

There has been no previous study conducted to determine the perceived value-satisfaction-trust-loyalty logic in an electronic environment, especially with regard to Malaysian LCC web sites. Having defined the gaps, the proposed conceptual framework is demonstrated as follows:

Figure 3.1: The Proposed Conceptual Framework



3.3 Development of Hypothesis

The antecedents for online perceived value to be tested are Efficiency, System Availability, Fulfillment, Privacy and Price dimensions. After that, the significance of the online perceived value-satisfaction-trust-loyalty logic is to be determined. The following sub-sections will discuss on the justifications and proposal of hypotheses for this study:

3.3.1 Efficiency

From consumers' perspective, the official LCCs web sites should be easy to navigate, able to provide concise content, well-organised, speedy in loading pages, easy to understand and enable the customers to complete transactions quickly.

To improve user-friendliness, the contents of official web sites should be designed in more comprehensible and straight forward manner. The web site designers should avoid technical jargons and always keep the content as simple to understand as possible. As mentioned in section 2.2.2, Bressolles

and Nantel (2008) posit that when customers seeking for information, ease of use of the site would be accentuated. Beside Parasuraman *et al*., researchers such as Long and McMellon (2004) also emphasise ease of navigation and efficiency as critical elements in determining online service quality.

Boyer *et al.* (2002) in section 2.4.6, affirm that the major reason for customers to use online systems as alternative to traditional sales channel is that the online systems are fast and efficient. Online purchasers wish upon their online purchase transactions be completed smoothly and quickly. Transaction efficiency includes factors such as the amount of time taken to download a site and the amount of time elapsed when a purchase is made are some of the pivotal considerations when customers buying online. As suggested in the SITEQUAL framework by Yoo and Donthu (2001), the processing speed dimension which is similar to transaction efficiency is of essence in promoting e-service quality on LCCs web sites.

In Malaysia, even though the number of internet service subscribers is increasing drastically as shown in section 2.4.1, but not all internet users are subscribed to the high-speed broadband services. Many internet users are still subscribing to dial-up internet services which the uploading and downloading speeds are much slower as compared to broadband internet services. For this reason, the web page internet design should not be too heavy and too fancy as these features will definitely increase loading time of the web site. On top of that, for the sake of convenience of navigation, sitemap and FAQs should be available for the users to search for the information they need quickly and precisely. The author proposed that lesser

time to be taken to obtain information or complete a transaction online, customer will has higher perceived value. Having considered that, the following hypothesis is therefore proposed:

H1: Efficiency of the web site will significantly influence the consumer's online perceived value.

3.3.2 System availability

This dimension refers to a consumer's ability to purchase product or service from anywhere in the world through a specific online web site (Parasuraman *et al*., 2005). Web sites should be online 24/7/365. The perception of consumers toward the airline will deteriorate if the web site of the airline is always offline. Furthermore, the site should not crash and pages should not freeze or hang during navigation and purchasing process by customers. Customers do not want to start over the whole purchasing process again once the page hung at the last step of the process. It is very irritating and frustrating. This will reduce the perceived value of customers toward the LCCs online ticketing services. As suggested by Zailani *et al*. (2008), the online service providers must equipped with sufficient server power and network capacity to support web site traffic. This is to make sure that customers are able to navigate the web site and complete their online transactions successfully.

As the airline industry, especially the Malaysian LCCs, is a dynamic industry, frequent updates on web site and yield management systems are inevitable. These updating efforts are consistent with the findings of Zeithaml *et al.* (2000) that information must be accurate, relevant, up-to-date and timely. However, web site updates should not interrupt the online service for too long. A

technical update interference time should be minimised to reduce the interruption of online ticketing services. It is proposed that by providing up-to-date information on the web site to its customers and availability for businesses will influence the customer's online perceived value. The following hypothesis is therefore projected:

H2: Availability of the web site system will significantly influence the consumer's online perceived value.

3.3.3 Fulfillment

In section 2.4.6, fulfillment is defined as the extent to which the web site's promises about order delivery and items availability are fulfilled (Parasuraman *et al*., 2005). Delivery fulfillment measures a company's accuracy in product and service delivery and its willingness to deliver the product and services within the promised time. This Fulfillment is overlapping with Zeithaml *et al.*'s (2000) Reliability dimension which stresses that the importance of accurate delivery and error-free order processing. Santos (2003) also confirms that this dimension can improve the e-service quality consistently throughout the period that a web site remains active. In the study of Wolfinbarger and Gilly (2003), eTailQ model finds that Fulfillment or Reliability dimension is the strongest predictor of online service quality.

The online ticketing purchasers expect to be billed and charged correctly after the online purchase is performed and confirmed. They also expect to receive their e-ticket itineraries and receipts within a reasonable time frame after the online transaction is completed. The perceived value of online ticket customers will deteriorate if their e-tickets are taking too long to be sent to

customers after the transaction is confirmed. The following hypothesis is therefore proposed:

H3: Fulfillment of the service promised during the purchase from the web site will significantly influence the consumer's online perceived value.

3.3.4 Privacy

Ratnasingham (1998) articulates that the emergence of privacy aspect is to ensure customers' personal data collected from the electronic transactions are protected from unauthorised users. In section 2.4.6, many researchers (Yoo and Donthu, 2001; Santos, 2003; Wolfinbarger and Gilly, 2003) confirm that privacy is the essential attribute of online service quality.

Some customers prefer to purchase tickets with the LCCs through the traditional method as compare to electronic means. This is due to their privacy concerns on e-commerce transactions making them feel insecure when sharing their personal information with other parties. According to Desai *et al.* (2003), 4 out of 10 people claim that the internet privacy and security concerns prevent them from buying things online and only 1 out of 10 internet users trusted companies to safeguard their information.

For convenience to customers, Malaysian LCCs' online portals offer several payment methods such as credit cards and online banking services (direct debit). The online security and privacy pertaining to credit card payment and direct debit banking facilities on the LCC web sites are some of the major concerns for customers when buying tickets online. This is because their personal data and their banking details are considered highly confidential

information. Customers may hesitate to disclose their key information to online companies due to privacy reason.

During the purchasing process, some LCC web sites request their customers to sign up for opt-in email or to save their particulars in the airlines' database. The opt-in email is part of the advertising efforts to promote their products and services by sending promotional updates and newsletters to the customers. If the airline companies were allowed to save the customers' particulars (such as name, address, and contact details) in their database, the system will create "cookie" to store up all the customers' personal information. The customers are assured by the LCCs that their customers' particulars will not be disclosed to any party. However, the balance between convenience and privacy of online business is hard to juggle. It is proposed that by giving assurance to customers on data privacy by the LCCs will give impacts on the customer's online perceived value. The following hypothesis is therefore projected:

H4: Web site privacy will significantly influence the consumer's online perceived value.

3.3.5 Price of online ticket

Andreassen and Lindestand (1998) emphasise that since online service is intangible, consumers would find it difficult to evaluate the different alternatives. As a result, the customer has to pay more attention to the external signs of quality such as price to make decision.

The study of Chen and Monroe (1998) affirmed that when a LCC frequently applies online price promotions, consumers become too acclimatised to the services being on promotion and eventually will decrease their level of response to the promotional campaigns. Even though Hardesty and Suter (2005) found that consumers expect to pay lower price on internet, but Xia *et al*. (2004) argue that airline firms should focus more on delivering the right quality at the right price and on treating the customers fairly rather than focusing on low online prices.

As discussed in section 2.3, several researchers (Blattberg and Neslin, 1990; Dodson *et al.,* 1978) suggest that consistent price promotions and discounts are likely to give negative influences on perceptions of quality. Therefore, management of the airline companies must carefully plan and implement the price discounts (Grewal *et al*., 1998) as it will positively influence perceived value. Moreover, Campo and Yague (2007) indicate that price discounts will increase the purchase intention.

Despite many previous researchers (Swan, 1974; Olson, 1977; Parasuraman *et al*., 1985; Lambert, 1972; Peterson and Wilson, 1985) acknowledged on the low relationship between price and perceived quality, not many studies (except for Reichheld, 1996) have conducted investigation on the relationship between price and perceived value, especially in online service environment. The author believes that the price element has a significant impact to the customer perceived value in the LCC online ticketing atmosphere. This is assumed that the customers who purchase online tickets from the LCC official portal are price-conscious customers. It is conceptualised that the price of the

online offers will largely affect the perceived value of the customers. Therefore, the following hypothesis is projected:

H5: Pricing of online ticket will significantly influence the consumer's online perceived value.

3.3.6 Perceived Value and E-Satisfaction

Several outcomes (Bitner *et al*., 1990; Bolton and Drew, 1991) showed that customer satisfaction is an antecedent of perceived service quality. But according to Eggert and Ulaga's (2002) study, which reaffirmed the findings of Cronin and Taylor (1992) and Parasuraman *et al.* (1988), customer perceived value leads to satisfaction which, in turn, leads to positive behavioural intentions. In addition to that, Woodruff and Gardial (1996) suggest that satisfaction and value are complementary. Rust and Oliver (1994) even designate that customer satisfaction depends on perceived service quality.

Furthermore, the causal relationship between service quality and satisfaction is debatable as mentioned in Chapter 2. For the purpose of this study, the author adopts the Semeijn *et al.* (2005) framework which articulate satisfaction is the accumulated effect on the customers' evaluation of the service. It is hypothesised that perceived value is expected to influence online customer satisfaction. If the customers find the perceived online benefits that they are getting from the web site are matching with their expectations, then they are satisfied with the web site. In due course, they are more inclined to recommend the web site to their friends and family members if their expectations are fulfilled. Therefore, it is hereby proposed that e-satisfaction is

influenced by perceived online value in the context of Malaysian LCCs business:

H6: Online Perceived Value will significantly influence the level of E-Satisfaction.

3.3.7 E-Satisfaction and E-Trust

In section 2.3.3, researchers such as Gummerus *et al*. (2004) and Sharma and Patterson (1999) suggest that customer trust is a mediator between online service quality dimensions and customer satisfaction. In contrast, Ganesan (1994) and Geysken *et al.* (1996) acknowledges that satisfaction has a significant effect on trustworthiness.

In terms of online context, Andersen and Srinivasan (2003) conceptually acknowledge that e-satisfaction has an impact on e-loyalty but this relationship is moderated by trust and perceived value. Nonetheless, applications of this evidence to electronic environment have yet to be applied especially in low cost airline industry.

When deciding the level of trust to other party, consumers will always look for cues which can stem from reputation of web site, information provided to customer, company background and design of web site to determine the propensity to trust. Several researchers suggest that the more usefulness functions or information that a web site can provide, the higher the online initial trust that consumers are likely to have.

Despite the findings from previous researchers who suggested that trust is a mediator between online service quality dimensions and customer satisfaction, the author proposes that e-trust is the intervening variable between e-satisfaction and e-loyalty. This is because the author finds that even though a consumer is satisfied with the online ticketing service, this will not guarantee the consumer will repurchase from the same web site unless he or she has trust in the e-tailer.

In addition, it was proposed that Trust Propensity is acting as a moderating variable between the relationship of e-Satisfaction and e-Trust. The author believes that the Trust Propensity will have some degree of influence towards the measurement of customer trust on e-commerce environment. It is therefore hypothesised the following:

H7: E-satisfaction will significantly influence the level of E-trust with Trust Propensity as a moderator variable.

3.3.8 E-Trust and E-Loyalty

As mentioned in section 2.3.3, evidences (Sirdeshmukh *et al.,* 2002; Lynch *et al*., 2001) show a strong association between trust and intentions to buy. However, Harris and Goode (2004) reveal that trust is both directly and indirectly driving loyalty.

In terms of online context, according to Ribbink *et al.* (2004), the e-service quality dimension of Assurance influences loyalty via e-trust and e-satisfaction. Airline companies can therefore increase e-customer loyalty indirectly by improving the Assurance dimension of the web site.

On the LCC web sites, for customers to buy online tickets, they have to provide credit card and banking details to the online ticketing service providers to complete the transactions. This act actually increases the perceived risk to customers. As research (Wang *et al.*, 1998) shows that many e-commerce customers were uncomfortable with web sites as the online service providers are keeping their personal and financial data. If customers do not trust online service provider, there will be no loyalty from the customers even though they are satisfied with the retailers' services.

To win trust from the customers, it is proposed that the web site of the online retailer needs to keep its promises and obligations. The web site needs to portray relative high security and reliability as its differentiating strategy to succeed in the intense competitive environment.

In this study, it is posited that there is a strong relationship between e-Trust and e-Loyalty. The following hypothesis is therefore proposed:

H8: E-Trust will significant in influence the level of E-Loyalty.

3.4 Data Collection Method

3.4.1 Unit of analysis

The population of this study is mainly focused on the people who had online ticket purchasing experience from the Malaysian LCCs' web sites. During the encounter of approaching potential respondents to fill up the questionnaires, they were asked to confirm that they have purchased air tickets at least once in the last 12 months from the official portals of LCCs specifically from AirAsia (through its official web site www.airasia.com.my) or Flyfly (through its official

web site www.fireflyz.com.my). If the respondents have insufficient knowledge or experience in the online ticket buying, they may deliberately guess at the answer, a tendency known as uninformed response will happen (Sekaran, 2003). Screening the online ticket purchasing experience on potential respondents is an essential step to ensure that they can provide true and accurate feedback based on their previous purchasing experience. This effort is to make certain that each element is within the population frame of this study. Beside, the author also fixed a timeframe of not more than 12 months from the date of last online purchase as part of the criteria of determining qualified respondents. This is to ensure that each respondent still has a clear and fresh memory on his or her last online purchase experience.

3.4.2 Instrument of Data Collection

For the purpose of this study, a self-administered questionnaire is used as the data collection instrument. This data collection method is adopted mainly because it enables the author to collect responses within a short period of time. Not only that, the questionnaires could reach a large numbers of individuals at the same time. If the respondents have any question pertaining to the questionnaire, clarification could be provided on the spot during the encounter. The author is also afforded the opportunity to introduce the research topic and motive the respondents to offer their frank answers. This data collection method is less expensive and consumes less time than others (Sekaran, 2003).

The questionnaire is designed in a straight forward manner and is easy to answer by the respondents. However, the questionnaires were only prepared in English. Only English literate respondents are able to fill up the questionnaires.

The instrument consists of 5 sections: Part A, B, C, D and E. The purpose of Part A is to collect demographic data and background information of the respondents. Information such as gender, age, ethnic group, marital status, education level, occupation and monthly income was collected. All the questions in Part A are close-ended questions. A number of defined response choices were pre-determined. The respondents are asked to choose only one answer for each question by crossing the answer. The author decided to place the demographic data collection segment in the beginning of the questionnaire because once respondents have shared some of their personal information with the researcher, they may have psychologically identified themselves with the questionnaire and they may feel a commitment to respond (Sekaran, 2003),

Before respondents proceed to answer the rest of the questions in the instrument, they were requested to complete all the questions with the best of their knowledge and reflect their opinion as accurately as possible.

In Part B, respondents have to answer 26 questions. It measures the influences of efficiency, system availability, fulfillment, privacy and price dimensions towards online perceived value. The first 20 questions are based on the antecedents of customer online perceived value. Majority of the items as stated in the questionnaire were replicated from Parasuraman *et al.* (2005)

and some of the questions were amended to suit the current online context. The last 6 questions in Part B are measuring price dimension towards online perceived value. Some of the measurements of price are adopted from Yin and Paswan's (2007) study. The respondents rated all the questions in this section by using a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

Part C consists of 4 questions which determine the perceived value. All the questions were duplicated from the study of Parasuraman *et al.* (2005) as the author finds that all the questions are relevant and suitable for this study. The respondents rated the web site on each item using a scale of 1 (poor) to 5 (excellent).

In Part D, e-Satisfaction and e-Trust were measured by 18 questions. The first 7 questions were used to measure e-Satisfaction and the next 11 questions were used to measure Trust Propensity and e-Trust. Majority of the e-Satisfaction questions were replicated from the study of Collier and Bienstock (2006). The e-Trust questions were adopted from the study of Chen and Barnes (2007) and for the Trust Propensity questions were duplicated from the study of Lee and Turban (2001). The respondents rated the web site's performance on each scale item using a 5-point Likert scale (1=strongly disagree, 5=strongly agree).

Last but not least, Part E which has 5 questions is measuring the online loyalty dimension. All the questions were copied from the study of Parasuraman *et al.* (2005). Same with Parts B, C and D, respondents rated the web site's performance on each scale item using a 5-point Likert scale (1=very unlikely, 5=very likely).

Except for Part A, in the remaining four segments (Part B, C, D and E), 5-point Likert scales were used as the evaluation scales to measure the variables. A recent empirical study found that 5-point Likert scale may produce slightly higher mean scores relative to the highest possible attainable score as compared to other scales. The difference was statistically significant (Dawes, 2008).

The design of questions, layout of the survey form, lucid explanation of the objective of the questionnaire, pilot testing and well-planned execution will influence the response rate, reliability and validity (Saunders *et al*., 2003). Therefore, it is essential that the instrument was pilot tested prior to data collection. The purpose of pilot test is to refine the questionnaire so that respondents will have no problems in answering the questions and there will be no problems in data recording. The test also will enable the assessment of validity and reliability of the instrument. In the pilot test, each completed questionnaire was checked to ensure that respondents have had no problems answering or understanding all the questions and have followed all given instructions correctly. If there is any source of confusion, the respondents can highlight it to the author during the pilot testing. In this study, pilot testing with 20 initial respondents was conducted and from there, a few amendments were made after having defined some of the flaws in the instrument.

The reliability of a scale indicates how stably and consistently the instrument taps the variable. Internal consistency was assessed to ensure all the items in the scale are all measuring the same underlying attribute. For the purpose of this study, the author adopted the most commonly used internal consistency

tool, the Cronbach's Coefficient Alpha to measure the average correlation among all of the items that make up the scale. Nunnally (1978) recommends a minimum level of 0.7 to pass the reliability of a scale. In this study, the Cronbach's Coefficient Alpha shown in the initial pilot test was sufficient.

Validity establishes how well a technique, instrument or process measures a particular concept. The validation of a scale involves the collection of empirical evidence relating to its use. As most of the questions are replicated from the previous empirical studies, the validity of its content, criterion and construct was considered sufficient.

3.4.3 Data Collection Procedure

A mall intercept technique was used as the data collection method for this study. This method was chosen because it has been described as a relatively inexpensive method of collecting high quality and more accurate responses. This technique also enables the researchers to access to a large number of shoppers and the data is more easily obtained (Bush and Hair, 1985).

To collect primary data with the mall intercept technique, the author approached people from all walks of life at the shopping malls such as Pavilion KL and Suria KLCC. The respondents were randomly selected regardless their age, race or gender to eliminate biasness. The respondents were limited to Malaysians as this study is focused on the perceptions of online service quality from local citizens' perspectives. Convenience sampling was adopted to collect samples for this study as it is conveniently and economically to obtain a large number of completed questionnaires in a very short period.

Roscoe (1975) proposes that for most research, the appropriate sample size is within the range of 30 to 500. Whereas Dillman (2000) suggests that the sample size for surveys between 100 and 200 is common. The author therefore has distributed 250 copies of questionnaires for the whole duration of data collection period from 7 to 17 April 2010.

On the last day of data collection period, 235 responses were collected (response rate of 94%). From those responses, only 230 are valid and usable responses, the remaining 5 responses (6%) cannot be used as some of the questionnaires were either incomplete or the respondents have chosen more than one answer for some of the questions. These instruments are considered inappropriate and inaccurate to be used in data analysis. Overall, the response rate is satisfying.

During the distribution of questionnaires, the author was facing some difficulties in terms of getting people to fill up questionnaires. Some people are reluctant and decline to respond to the survey form as they feel that filling up questionnaires are very tedious, time consuming and troublesome. While some other people reluctant to disclose their personal data to strangers for security reason.

3.4.4 Data analysis procedure

Before starting the data analysis, it is in best practice to conduct checking on data set for error. This is because it is very easy to make mistakes when entering data and some errors can significantly influence the analyses. The author has inspected the frequency for each variable. Errors were corrected

before total scores for the scales are computed. The author only proceeds with data analysis after making sure all the data are clean and free of data key-in error.

To help prevent response bias, the wordings of a few questions in Part B (BS3, BS4 and BP1) and Part D (DS4 and DS6) have been reversed. Before the data was analysed, the author has reversed the 5-point Likert scale for all the above mentioned negatively worded questions.

3.4.5 Data analysis techniques

For the purpose and nature of this study, the following analysis techniques were being used to perform data analysis:-

a) Regression Analysis

This approach allows prediction of a single dependent continuous variable from a group of independent variables. It can be used to test the predictive power of a set of variables and to assess the relative contribution of each individual variable. In this study, linear and multiple regressions were being used to conduct analyses on H1, H2, H3, H4, H5 and H7. Each regression coefficient is to be determined.

To test on the moderating effect (H7), the independent variable and moderator variable were first factored into the equation and then their interaction term is added in. The significance of quality differences between the models prior to and after introduction of interaction effects was evaluated to determine the moderating significance.

In this case study, Trust Propensity is proposed as a potential moderator in the e-Satisfaction/e-Trust relationship. The moderating effect of Trust Propensity on the relationship between e-Satisfaction and e-Trust must be characterised by significant interaction between e-Satisfaction and Trust Propensity (Anderson and Mittal, 2000). When dependent and independent variables are at least interval, a multiple regression analysis must be conducted (Bielen and Demoulin, 2007).

In order to test the moderating effect, a couple of regression analyses were performed. In stage 1, e-Satisfaction and Trust Propensity were regressed. These two variables became eligible as significant predictors. In stage 2 of the analysis, the interaction of these two variables (e-Satisfaction x Trust Propensity) was introduced along with the first two variables. The moderating variable became significant if the model's R^2 increases (Binninger, 2008).

b) Baron and Kenny Approach and Sobel Test

To test for mediation effects for H6, H7 and H8, the following four-step procedure described by Baron and Kenny (1986) was used (refer Table 3.1).

Sobel test was conducted and significance of the coefficients is examined at each step.

Table 3.1 : Baron and Kenny's (1986) Mediation Testing Approach

	Analysis
Step 1	Conduct a simple regression analysis with independent variable predicting mediator.
Step 2	Conduct a simple regression analysis with independent variable predicting dependent variable.
Step 3	Conduct a simple regression analysis with mediator predicting dependent variable.
Step 4	Conduct a multiple regression analysis with independent variable and mediator predicting dependent variable.

The purpose of Steps 1-3 is to establish that zero-order relationships among the variables exist. If one or more of these relationships are non-significant, the mediation is not likely (MacKinnon, Fairchild and Fritz, 2007).

Assuming there are significant relationships from Step 1 through 3, Step 4 should be carried out. In the Step 4 model, some form of mediation is supported if the mediation effect remains significant after controlling of independent variable. If independent variable is no longer significant when mediator is controlled, the finding supports full mediation. On the other hand, if independent variable is still significant, the finding supports partial mediation (MacKinnon *et al.,* 2002).

The mediating nature of the variable is indicated when the following four conditions are satisfied:

a) The independent variable affects the mediating variable in the first regression;

b) The independent variable influences the dependent variable in the second regression;

c) The mediating variable influences the dependent variable in the third equation; and

d) Considering that all these conditions are fulfilled and point in the same direction, the effect of the independent variable is not as important in the third equation as in the second.

Sobel test is by far the most commonly used when testing indirect (mediation) effects. The Sobel test assesses whether a mediator variable significantly carries the effect of an independent variable to a dependent variable (Sobel, 1982). The Sobel test is superior to the Baron and Kenny method in terms of power, type I error, suppression effects, addressing the significance of indirect effect. However, despite the superiority of Sobel test, there is an assumption for conducting the Sobel test - the sampling distribution is normal (Preacher and Hayes, 2004).

To analyse the data for H6 to H8, Sobel test was adopted by the author. As Preacher and Hayes (2004) offer a macro that calculates the Sobel test directly within SPSS, the author has downloaded the said Sobel test macro from http://www.comm.ohio-state.edu/ahayes/sobel.htm for data analysis purposes. The macros for SPSS provide testing on the indirect (mediating) effect using Sobel test as well as a version that relies on a nonparametric bootstrapping procedure. Boostrapping is a way to overcome the limitation of statistical methods that make assumptions about the shape of sampling distribution such as normality. This method involves repeatedly randomly

sampling observations with replacement from the data set and computing the statistic of interest in each resample. The macros also provide all the output that one needs in order to assess mediation using the Baron and Kenny (1986) criteria.

By using the macros, rather than running the entire program for each analysis, the program simply needs to be "activated" by running it once or requesting that it be executed first in a batch using the INCLUDE command. The author needs to run the macro only once when SPSS was first executed; the macros will remain active until the author quits the program. Output of the SPSS version of the macro is displayed using hypothetical data (refer to Appendix E). The output was generated with the following command:

SOBEL y=yvar/x=xvar/m=mvar/boot=1000

In order to test the mediating effects of e-Satisfaction and e-Trust on the relationships between the Online Perceived Value and e-Loyalty, the proposed relationships were split into two equations (Keiningham *et al.*, 2005) as below for testing by Sobel test:

1st Equation:

SOBEL y=Trust/x=PerceivedValue/m=Satisfaction/boot=1000,

where yvar=e-Trust, xvar=Online Perceived Value, mvar=e-Satisfaction

2nd Equation:

SOBEL y=Loyalty/x=Satisfaction/m=Trust/boot=1000,

Where yvar=e-Loyalty, xvar=e-Satisfaction, mvar=e-Trust

The calculations and interpretations required by all the above methods are relatively complicated. SPSS software version 16.0 was used to conduct data analysis.

To examine the strength of relationships between two variables, Cohen (1998) suggested the following guidelines:

Table 3.2: Strength of relationship between two variables

Value of Pearson Correlation (R)	**Strength of the Relationship**
R=0.10 to 0.29 or R=-0.10 to -0.29	Small
R=0.30 to 0.49 or R=-0.30 to -0.49	Medium
R=0.50 to 1.0 or R=-0.50 to -1.0	Large

3.4.6 Ethics

For the purpose of this study, the author addressed several ethical issues while collecting data. Confidentiality of data obtained by the author was respected and personal data of the respondents shall not be disclosed to any third party in whatsoever conditions. Treating the information given by the respondent as strictly confidential and guarding his or her privacy is the author's responsibility.

During the encounter with respondents, the author did not misrepresent the nature of this study and in fact respondents were explained on the purpose of this study. The author did not compel or force any party to be part of this study

as respect to people's privacy and never violate self-esteem of the respondent is the ethic in research study.

When analysing and reporting the result of data collection, the author promises that there is absolutely no misrepresentation or distortion.

3.4.7 Conclusion

In the progress of determining the research method for this study, the author has followed a systematic approach in aiming to obtain goodness of data. Having discussed and justified the proposed hypotheses in section 3.3, the adoption of suitable methodology and the determination of relevant unit of analysis was considered crucial prior to data collection process. To increase the validity and reliability of this study, the instrument was first pilot tested. Since the correct data collection method was adopted, the response rate was very convincing. Data collected was inputted into SPSS software program to generate results for the purpose of analysis and interpretation which will be discussed in next chapter.