

Independent variables dependent variable marketing essay

[Business](#), [Marketing](#)



Chapter 3

3. 0Introduction

The objective of this research is to examine the key factors influence the computer buying decision in Penang. In this chapter it covers the development of the theoretical framework. It describes the relationship between dependent variable, independent variables and moderating variable which are supported by the literature review in Chapter 2 and the formal statement of hypothesis. The research methodologies used in this chapter consist of data collection the use of SPSS software and the design of the survey i. e. the questionnaire is discussed. The research data is collected via survey questionnaire. Finally an appropriate analytical technique is applied to examine and evaluate the reliability and validity of data is carried through the reliability analysis which will be covered and elaborated in detail in this chapter. According to Sekaran (1992) a research can be described as a systematic and organized effort to investigate a specific problem that needs a solution. A research is essential for understanding the basic everyday phenomena that needs to be handled in organisations. This chapter covers the theoretical framework, research methodology, hypothesis statement, research approach, data collection method, research subjects, questionnaire design, administration of questionnaire and statistical method.

3. 1Theoretical Framework

The theoretical framework for this research is depicted in Figure # .

Independent Variables Dependent Variable

PriceComputer Buying Decision

Moderating Variable

Alternative optionsEase of PurchaseService & Warranty

SupportBrandProductAccording to Nasir (2006), there are seminal studies on consumer buying decision models in the literature, however, consumer buying decisions vary greatly depending on the product to be purchased.

The theoretical framework for this research which is based on the attributes has been described by Mullins et al (2008). Hong and Lerch (2002) in their consumer process of decision making model report that the environmental cues, the physical factors of the product, psychosocial cues such as

advertising and consumers put these cues into a set of perceptions that shape their preferences. They add on based on these preferences,

consumers make their choices subject to situational constraints, such as prices. According to Chen and Huang (2009) in his research, they claim that the significance between the difference in the demographic variables of netbook's consumers and consumption reality variables, purchase motives, information sources, product attributes evaluation criteria and brand image.

Price attributes consist of factors such as purchase price, repair cost, installation cost and also any other related cost. Product is judged and evaluated by the performance which is related to the product which carries the attributes of quality, durability, dependability, functional performance and efficiency. Branding is a very powerful component in business. The brand must have a logo to make branding easier and more possible. The

consumers decide if they will buy a product or use a service based on how they view the brand. The brand itself tells or portrays the imagination how good or bad the product is even if never buys or tastes it before. All that brand promotion and advertising really do tell and carry how great a brand can be. Brand as the reputation of the product play an important as role as well. It represents the status image, popularity, style and fashion etc. Great brands are no accidents. They are a result of thoughtful and imaginative planning. Anyone building or managing a brand must carefully develop and implement creative brand strategies. In Tsai's research (2007), he indicates that service quality and product quality will have forward influence to customer degree of satisfaction and customer satisfaction will have forward influence to brand loyalty. According to Tan (2005) he claims that ease of purchase through internet (perceived ease of use) and security (trust) have significant impact towards consumer intention to purchase online, whereas the perceived usefulness was not found to have any significant relationship with consumer intention to purchase pc online. There are differences in consumer's online shopping experience whether it is pc or non-pc products, towards consumer intention to purchase pc online. Hamblen (2012) reports that IT managers already know that smartphones and tablets are being purchased in vast numbers by workers, and Gartner added credence to that trend today, reporting that 1. 2 billion of the devices will be purchased in 2013. " The consumerization trend has hit IT as an unstoppable force," Gartner said in a statement. In all, smartphones and tablets combined make up 70% of all devices sold in 2012. The total is expected to reach 821 million by the end of the year. This research attempts to summarize independent

variables on factors influencing computer buying decision as price, product, brand, service and warranty support as well as ease of purchase whereas the dependent variable is computer buying decision and moderating variable is alternative options such as smartphone and tablets.

3. 2Research Methodology

Survey questions is designed and distributed to the working adults. Setting target of 100 respondents where the survey is through softcopy and hardcopy. All the variables will be measured using questionnaire.

Respondents will be asked to select the scale point that can reflect their feeling toward the associated statement most accurate. Six questions will be used to measure a single variable that is factors influencing computer buying decision. The mean score for the answers from the same groups of questions will be used as the reading in statistics analysis. The primary data will be collected from friends, colleagues, course mates, relatives, working adults, public and private sector. A computer software package named Statistical Package for Social Science (SPSS) will be used to ease the process of statistical analysis. The collected data will be analyzed by using this software.

3. 3Hypothesis Statement

There are a total of six hypothesis statements in this research. Hypothesis 1: Price has an influence on computer buying decision Price is the key factor influencing computer buying decision in any product or service. There are various groups of consumer in the market and each of the groups has different expectation on the price or cost. Hypothesis 2: Product has an

influence on computer buying decision. The product relates to the performance of the product. This is another factor influencing the computer buying decision. Hypothesis 3: Brand has an influence on computer buying decision. Brand is another determinant of computer buying decision.

Hypothesis 4: Service and warranty support has an influence on computer buying decision. In this current advanced technology era, services and warranty support have become important and it is one of the influencers in computer buying decision. Hypothesis 5: Ease of purchase has an influence on computer buying decision. Another influencer in computer buying decision is the method of purchase of the product or service and it can be best explained by the availability or ease of purchase for the product or service. Consumer has the choices/options/selections to purchase a product either online or offline. The advancement in internet technology has created a pathway and bridge for consumer to purchase his or her product online via internet. Hypothesis 6: Alternative option has an influence on computer buying decision. Consumer has the choice to purchase either a computer or a smartphone or tablet if they are given the choice of preference. Alternative options such as smartphones and tablets can moderate the relationship of the independent variables like price, product, brand, service and warranty support and ease of purchase on computer buying decision. According to Aquino and Radwanick (2011) mobile phones began a worldwide revolution when they provided consumers with the first experience of connecting online away from a computer and a fixed Internet connection. The development of smartphones took the power of mobile technology a step further and shifted consumers' expectations for accessing digital content. Now, a new

movement appears to be on the rise as new devices such as tablets, gaming consoles, and e-readers – collectively known as "connected devices" – gain popularity and are increasingly integrated into daily digital life. Lineback (2013) mentions that "X86 is definitely not growing as fast because standard PC growth is lower than smartphones and tablets". Hence, it is an interested research to study if consumers within the Malaysian market do consider the alternative options like smartphones and tablets as a real possibility of substitute to traditional computing tools such as laptops and desktops.

3.4 Research Approach

All the variables are measured using questionnaire. Respondents will be asked to select the scale point that can reflect their feeling towards the associated statement most accurately. Six questions will be used to measure a single variable, computer buying decision. The mean score for the answers from the same group of questions will be used as the reading in statistics analysis. A computer software package named SPSS (version 16) will be used to ease the process of statistical analysis.

3.5 Data Collection Method

This research will use both primary and secondary data collection methods to carry out the research. The aim of conducting questionnaires in this study is to find out the views and perceptions about the importance of brand equity in decision making. Primary data will be collected by conducting questionnaires to be distributed to one hundred respondents. Secondary data will be collected from current research written in books, journal articles,

newspapers, magazines and the Internet. These information will be used to write the literature review, methodology and in discussing the research findings. The advantages of conducting questionnaires in this research are that it provides a simple and cost effective means of collecting data from a large number of people in a standardised manner. This makes it simple and easy to carry out the analysis of data. The data collected can be used to carry out comparative analysis for the research questions. The participants can remain anonymous and this can facilitate in generating more honest answers. However, care needs to be taken to ensure that participants understand the questions and the relevance of the research to produce accurate answers. It is important to ensure that participants complete the questionnaire. It is important that the selected sample size is a true reflection of whole population. Response rates can be low due to low participant motivation in completion of questionnaires. The designing, producing, distributing and analysing the questionnaire can be a time-consuming process (Chisnall, 2001). The methodology used is through questionnaire where the questions will be the answers to the six research questions. In this report, topics to be discussed are price, product, brand, service and warranty support, ease of purchase and lastly alternative options which is smart devices influencing the computer buying decision.

3. 6Research Subjects

3. 6. 1Population

According to Sekaran (1992), population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. The

targeted population was computers owners of different age group, gender and ethnic group that have bought computer before or intend to purchase a computer. The age group is limited to below 20 years old and above 20 years old. The sample will be collected in Penang state. The subject population will be those who are: Students from secondary schools aged less than 20 years old Colleges/universities students aged less than 20 years old and aged 21 – 30 years old Working adults/colleagues from different departments in private sector aged above 20 years old Working adults/friends from different companies in private sector aged above 20 years old Working adults/friends from public sector aged above 20 years old

3. 6. 2 Sample

According to Sekaran (1992), sample is a subset or subgroup of a population which comprises some members selected from the population. Through the study of this sample, researchers would be able to draw the conclusion that would generalize the interests of population. Roscoe (1975) recommended the following rules of thumbs for determining sample size: Sample sizes larger than 30 less than 500 are appropriate for most research. A minimum sample size of 30 each for each category of subsamples (males/females, etc) where samples are to be broken. In multivariate research which is inclusive of multiple regression analyses, samples should be several times as large as the number of variables in the study. For simple experimental research with tight experimental controls, successful research is possible with samples as small as 10 to 20 in size. There are many methods to determine the sampling size. It can be using mathematical or non-mathematical approach.

According to mathematical approach it requires knowledge or assumptions of key parameters such as population mean, estimation of standard deviation, etcetera (Churchill, 1995; Lechmann, 1998). There are also two categories of research which are consumer research and business research. Please refer to Table 3a which shows the typical sample size used in marketing research. For this research, a special related population which is the working group and students in Penang and it is used and targeted to find many subgroups analysis. Hence the acceptable sampling size it is found to be more than 100 respondents. Table 3a: Typical Sample Size Used in Marketing SearchSource: Sudman and Blair (1998)For this research, a sample size of 150 is selected comprising of working people and students, representing the population of Penang who owns personal computers or plans to purchase a unit in 6 months' time or in the future. The sample of respondents is selected randomly and questionnaires are distributed to employees of companies in Penang, self-employed individuals and also students at schools and institutes of higher education. For this research, the questionnaires have been sent out into three batches via emails. The first batch was sent to colleagues and friends within the company. Following that, second batch was to friends who work in other companies within Penang. Last batch is divided into two stages which it was sent to relatives and students in colleges or universities. This is to ensure the distributions are well covered for all variables such as gender, age, education level, working experience, job level, occupations and monthly income in demographic and profile portion.

3.7 Questionnaire Design

The questionnaire is developed based on the theoretical framework and divided into two sections (Please refer to Appendix A). Section A is designed to collect demographic data of the respondents which is used as a control variable. There are in total seven questions for this section. The data are pertaining to the respondents' gender, age, education level, working experience, job level, occupation and lastly monthly income are collected. Section B of the questionnaire consists of ten questions that representing the dependent variable which is the computer buying decision. Ten questions are set for this section. Following by Section C which is sub divided into five sub sections for the independent variables on price, product, brand, service and warranty as well as ease of purchase. The majority of the questions are adapted from the work of Choo (2008) and Yeoh (2010). In total, twenty eight questions are set for this Section C. In addition new questions are created to address the moderating variable which is in Section D. Five questions are meant for this section. Below the tables shows the elaborations for the questionnaire of the survey.

Section	Questions	Category	Type of Variable
A	7	Demographics	Control Variable
B	10	Computer Buying Decision	Dependent Variable
C	6	Price	Independent Variable
	5	Product	Independent Variable
	6	Brand	Independent Variable
	6	Service & Warranty Support	Independent Variable
	5	Ease of Purchase	Independent Variable
D	5	Alternative Options	Moderating Variable

The independent variables are used to test the hypothesis on the impact of various independent variables (price, product, brand, service and warranty support and ease of purchase) on the dependent variable which is the computer buying decision.

The questionnaires are presented in five point Likert scale and the reason for this is chosen is because the five Likert scale tends to reach the upper limit of reliability (Nunnally, 1978). The Likert rating scales are as follows: Likert rating scales is used as it is quite useful for evaluating a respondent's opinion of important purchasing, product, or satisfaction features. The scores can be used to create a chart of the distribution of opinion across the population. For further analysis, it can cross tabulate the score mean with contributing factors. The traditional way to report on a Likert scale is to sum the values of each selected option and create a score for each respondent. This score is then used to represent a particular trait particularly when it is used for sociological or psychological research. In addition, several papers have shown that Likert scales can indeed be analyzed effectively as interval scales (Baggaley and Hull, 1983; Maurer and Pierce, 1998; and Vickers, 1999). Also, Allen and Seaman (1997) support treating Likert scales as interval data with certain rather sensible provisos: " The " intervalness" here is an attribute of the data, not of the labels. Also, the scale item should be at least five and preferably seven categories. Another example of analyzing Likert scales as interval values is when the sets of Likert items can be combined to form indexes. However, there is a strong caveat to this approach: Most researchers insist such combinations of scales pass the Cronbach's alpha or the Kappa test of intercorrelation and validity. Also, the combination of scales to form an interval level index assumes this combination forms an underlying characteristic or variable.

3. 8 Administration of Questionnaire

The questionnaire is administered by distributing the questionnaires to working people in companies in Penang and also students in institutions of higher learning (colleges or universities). All these questions must be fully answered by the respondents in order to acquire and achieve desired results.

3. 9 Statistical Method (Statistical Methodology)

The software application used for analysis is SPSS (Statistical Package for the Social Sciences). Internal consistency reliability test of the measuring scales of the variables was conducted using the Cronbach coefficient alpha. Should the Cronbach's alpha be less than 0. 5, the factor is a reliable factor.

Cronbach measures are as follows: Reliability less than 0. 6 considered poor Reliability in the range 0. 7 is considered to be acceptable. Reliability more than 0. 8 are considered to be good. Once the full set of data is collected back, factor analysis will be carried out and executed on the data. Principal component analysis transforms all the variables into a set of composite variables that are not correlated to one another. In other words, the variables that are correlated to one another will be dropped (Sekeran, 2000). The purpose of running factor analysis on the full set of data is to ensure that the custom-designed questionnaire measure the concept correctly. According to Sekeran (2000), a proper-designed questionnaire should demonstrate correct variables loading on each factor. After screening out all the questions that showed correlation between one another, reliability analysis will be done again on the remaining questions and the corresponding data. The purpose of the test is to ensure the internal

consistency of the questions. Descriptive statistics will be used to describe the sample, to picture the overall characteristic of the respondents. After that, regression analysis will be run on the variables, attempting to find out the model that explaining conflict management, separately with few different models (i. e. one with sources of conflict variables and other with conflict management styles). Lastly, one-way ANOVA test will be inducted to allocate the significant mean differences among multiple groups.

3. 10Summary

This research is done according to the theoretical framework which consists of independent variables of price, product, brand, service and warranty support and also ease of purchase. These independent variables will be analysed on the influence of dependent variable which is computer buying decision. The moderating variable which is the alternative options is designed to evaluate and examine the impact of this in computer buying decision. Through the analysis of collected data, the hypothesis can be examined and evaluated according to the result of the questionnaire. 3, 195

Chapter 4

Presentation and Analysis of Findings

4. 0Introduction

In this chapter it embodies the presentation and analysis of findings based on the data gathered and collected from respondents via questionnaire distribution. The data are then analysed using the Statistical Package for Social Science.

4.1 Overview of Data Gathered

A total of 150 softcopy and hardcopy of the questionnaire are distributed via electronic mail (email) to contacts in Penang, please refer Table 4a.

Distributed 150 Collected both hardcopy and softcopy 137 Accepted 137 Valid

Response Rate 91.33% Table 4a

4.2 Data Presentation The data is presented in tabular format for clear and easy references. There are 137 questionnaires are collected, the response rate is 91.33% and there is no questionnaires been disregarded in this research. The data is then analysed using Statistical Pack for Social Science (SPSS) to obtain reliability of data and regression analysis output. In total 150 have been sent and the 137 have been collected. Hence, the total number of valid questionnaire responses collected was 137 and the overall response rate is 91.33%. This exceeds the minimum requirements of 70%. According to Duane (1996), 70% is the minimum requirement. Table below shows and summarizes the questionnaire profile distribution. The design of the questionnaire has been categorised into four sections. It consists of demographic and profile in Section A which covers gender, age, education level, working experience, job level, occupation and lastly monthly income. Table 4.2.1 shows the demographic and profile of the sample respondents. The respondents comprised of 43.8% of male and 56.2% of female. Gender

%

Male 43.8 Female 56.2 Table 4.2.1 Gender table Table 4.2.2 shows the age group from below 20 years old is 4.4%, 21 - 30 years old is 29.2%, 31 - 40 years old, 35.8% and lastly above 40 years old is 30.7%. Age Group

%

below 20 years old4. 421 – 30 years old29. 231 – 40 years old35. 8Above 40 years old30. 7Table 4. 2. 2. Age Group4. 2. 3Education LevelEducational Level

%

Secondary School4. 4Certificate/Diploma16. 6Bachelor's Degree55. 5Master's Degree22. 6PHD/Post-Doctorate0. 7In terms of the education level, table 4. 2. 3 shows education background of the respondents. 4. 4% are secondary school level who are students still studying in schools. 16. 8% are certificate/diploma level, 55. 5% are bachelor's degree holders, 22. 6% hold master's degree and 0. 7% is PHD/Post-Doctorate holder. For working experience, 2. 9% of the respondents do not have working experience or not applicable. They are students in secondary school. 16. 8% of them have less than 5 years working experience. As for 5 – 10 years working experience, the percentage is 21. 9% and 37. 2% are meant for more than 15 years working experience. Please refer to table 4. 2. 4. 4. 2. 4Working ExperienceWorking Experience

%

Not Applicable2. 9Less than 5 years16. 85 to 10 years21. 910 – 15 years21. 2More than 15 years37. 2Table 4. 2. 5 shows out of 55. 5% of the respondents are executive level, 27. 7% are manager level, 11. 7 are senior manager/director level and for students there is 5. 1% for this category. There is no Chairman/CEO/Owner level for this category. 4. 2. 5Job LevelJob Level

%

Student 5.1 Executive 55.5 Manager 27.7 Senior Manager/Director 11.7 Chairman/CEO/Owner 085.4% respondents are occupation level are employees in private sector. There is only 8% in public sector, 4.4% student and 2.2% are self-employed. The occupation rate is explained in table 4.2.6.4.2.6 Occupation Occupation

%

Student 4.4 Self-employed 2.2 Employed in public sector 8.0 Employed in private sector 85.4 In table 4.2.7 shows the monthly income, the highest rate is those who are earning above RM6K and above, 25.5% are earning RM4,501 - RM6,000, 17.5% is for those earning RM3,001 - RM4,500, 16.1% shows the monthly income of RM1,501 - RM3,000 and lastly 5.1% are those earning less than RM1,500.4.2.7 Monthly Income Monthly Income

%

Less than RM1,500 5.1 RM1,501 - RM3,000 16.1 RM3,001 - RM4,500 17.5 RM4,501 - RM6,000 25.5 More than RM6,000 35.84.3 Data Evaluation For data evaluation, reliability analysis is deployed to test the consistency and reliability of the multi-scales items. The reliability analysis measures how well the items in each in each set correlate with one another.4.4 Reliability Analysis Table 4.3.1 shows the results of Reliability Analysis. The factors are submitted to Cronbach's Alpha analysis and some of items in the multi-scale have to be deleted in order to maximize the Alpha scores (Peter, 1979). According to Nunally (1982) and Sekaran, the Cronbach Alpha value of 0.6 and above is considered acceptable for this analysis. Obviously, the scales

used to measure the variables are internally consistent and reliable. Table 4.

3. 1VariablesNo. of ItemsNo. of Deleted ItemsCronbach AlphaVariable

TypeComputer Buying Decision1000. 646DependentPrice600.

544IndependentProduct500. 638IndependentBrand600.

615IndependentService & Warranty Support600. 843IndependentEase of

Purchase500. 554IndependentAlternative Options510. 500ModeratingThe

Cronbach Alpha values for all factors ranged from 0. 500 to 0. 843. Computer

buying decision is dependent variable which consists of ten questions. The

alpha for it is 0. 646. No item is deleted for this factor. The independent

variables are price, product, brand, service & warranty support, ease of

purchase and lastly the moderating variable, alternative options the alpha

for price is 0. 544, product is 0. 638, brand is 0. 615, 0. 843 for service &

warranty support, ease of purchase gains 0. 554 and 0. 500 is for alternative

options There is no items deleted for independent variables except there is

one item deleted for moderating variable. 4. 5Multiple Regression Analysis -

Hypotheses TestingThis regression analysis is used and applied to test and

determine whether the hypothesis as mentioned in Chapter 3 should be

accepted or rejected. It is carried out to test the relationship between the

independent variables of Price, Product, Brand, Service & Warranty Support

and Ease of Purchase against the dependent variable of Computer Buying

Decision. Hypothesis which carries value under 0. 05 is deemed as accepted

else is considered as rejected. The summaries of regression analysis for all

the independent variables are tabulated in table 4. 5. 1. Table 4. 5. 1

Summary of Regression AnalysisVariablesBetaT-ratioSig. tPrice0. 2493.

2280. 002Product0. 1972. 3530. 020Brand0. 0771. 0120. 313Service &

Warranty Support 0.0492. 2860. 024 Ease of Purchase 0.0692. 5870. 011 R Square 0.486 Durbin-Watson 1.824 VIF < 1.779 Based on the regression analysis, price has the lowest value of significant value which is 0.002 and falls under the range of acceptance value < 0.05. This signifies price is a key determinant to influence the computer buying decision in Penang. Hence, Hypothesis 1 is accepted. For product, the significant value 0.020, therefore it is a significant value for product. It is a factor to influence computer buying decision. Hypothesis 2 is accepted. Brand carries a 0.313 value which is not significant as it is more than 0.05. Hypothesis 3 is rejected. According to regression analysis, service & warranty support has significant relationship with computer buying decision in Penang. The value is 0.024. Hypothesis 4 is accepted. Based on the results for ease of purchase, it has significant relationship with computer buying decision in Penang. The value for this is 0.011. So this is a factor affecting the computer buying decision. Hypothesis 5 is accepted. 4.6 Other values gathered There are other data gathered in the regression analysis test. The coefficient R square is 0.486 indicating 48.6% of independent variables factors determine the factors on computer buying decision in Penang. The remaining of 51.4% factors is to be determined or unknown. The Durbin-Watson value is 1.824 which falls under the acceptable range which is below 2.5. This indicates there is no auto-correlation problem in the data. The tolerance and VIF value less than 1.779 which is met the acceptable value of ≤ 10 . This means all independent variables do not have multi-collinearity problem. 4.6.1 Most Frequently Used By Computer Buying Decision Table 4.6.1 Table 4.6.1 shows the descriptive statistic for the computer buying decision used by the respondents. Brand (1.

93 on a 7-point scale), Price (1.84 on a 7-point scale) and Alternative Option (1.88 on a 7-point scale) are the three most frequently used for the computer buying decision by the respondents. However, the respondents do take into consideration Product (1.76 on a 7-point scale), Service & Warranty Support (1.71 on a 7-point scale) and Ease of Purchase (1.75 on a 7-point scale) when making decision when buying computer. Table 4.6.24.

6.2 Correlation Analysis between Independent Variables Correlation was held for the variables obtained from the survey. This analysis is to explore how one variable is related to another. The bivariate relationship of the variables used in the study can be known in terms of the nature, direction and significant level. A Pearson correlation matrix for the variables used in the study was shown in Table 4.6.2. All the five independent variables are significant appeared to be correlated with computer buying decision with 0.01 significant level (2 tailed). However, correlation analysis is only good in determining the strength of relationship between two variables. In order to study the simultaneous effect from multiple independent variables towards a single dependent variable, multiple regression analysis is necessary. Table 4.6.3 Effect of Gender, Age Group, Education Level, Working Experience, Job Level Occupation and Monthly Income on Computer Buying Decision A one-way of all groups ANOVA was conducted to explore the effect of all the fields in demographic profile, they are Gender, Age Group, Education Level, Working Experience, Job Level Occupation and Monthly Income on Computer Buying Decision. From the F-test significant values in Table 4.6.3, Working Experience has significant difference between groups ($P=0.041$). This means Working Experience has a significant effect on Computer Buying

Decision. 4. 6. 4 Moderating Variable From the regression analysis on the moderating variable Alternative Options (smart devices like smart phones and tablets) shows that it is not significant to affect the computer buying decision as the Significant value is 0. 272. 4. 7 Summary In this research, 150 sets of questionnaire have been distributed out through emails to colleges/universities, friends and colleagues in Penang, Malaysia. The response rate is 91. 33, 137 sets are collected and all set are usable for analysis. Correlation analysis was done on the questionnaire and all the correlation between independent variables could be explained logically. Reliability analysis is being done on the questions and found favourable Cronbach Alpha ranged 0. 500 – 0. 843. With the analyses mentioned above, the validity and reliability of the instrument used are certified. A one-way between groups ANOVA is conducted to explore the effect of Effect of Gender, Age Group, Education Level, Working Experience, Job Level Occupation and Monthly Income on Computer Buying Decision. From the F-test significant values Working Experience has significant difference between groups ($P= 0. 041$). This means Working Experience has a significant effect on computer buying decision. According to the analysis, there is only four independent variables, they are Price, Product, Service & Warranty Support and Ease of Purchase are accepted as the factors influencing computer buying decision. Hypothesis of Brand is rejected. The moderating variable, the Alternative Options (smart devices – smart phones and tablets) does not influence the computer buying decision in this research. Table 4. 7. 1 shows the results of the hypothesis testing. Table 4. 7. 1 Summary of the hypothesis testing

Hypothesis Statement	Sig. tResult
H1 Price has an influence	

on computer buying decision0. 002AcceptedH2Product has an influence on computer buying decision0. 020AcceptedH3Brand has an influence on computer buying decision0. 313RejectedH4Service and warranty support has an influence on computer buying decision0. 024AcceptedH5Ease of purchase has an influence on computer buying decision0. 011AcceptedH6Alternative option has an influence on computer buying decision0. 272Rejected1, 612

Chapter 5

Conclusions and Recommendations

5. 0 IntroductionThis chapter aims to finalize the research with conclusions and recommendations. It has been divided into six sections. Section 5. 1 is recapitulates the overall researchSection 5. 2 focuses on the discussion and findingsSection 5. 3 highlights the implications of the findings and coverage the recommendationsSection 5. 4 discusses the limitations of the researchSection 5. 5 proposes the suggestions for future researchSection 5. 6 ends with a conclusion for the research5. 1RecapitulationThe purpose of this research is to examine and evaluate the key factors influencing computer buying decision. The independent variables for this research are price, product, brand, service and warranty support as well as ease of purchase. This is done after the study, reviews and past works of other researchers such as Chang (2007), Teo (2008) and Choo (2008) on price and Chen and Huang (2009) on product, Hsieh (2008) and Huang (2008) on brand, Chang (2007) and Tsai (2007) on service and warranty support and finally Tan (2005) on ease of purchase. These are independent variables. There is a moderating variable which is the alternative option like smart

devise together with the independent variables are used to examine and evaluate the relationship with the dependent variable which is the computer buying decision. This research also examines how demographic variables like gender, age, education level, working experience, occupation, job level and monthly income affects the computer buying decision. 5. 2 Discussion on Findings There are a total of six hypothesis being tested for this research.

Each hypothesis has been tested and the decision to accept or reject the hypothesis is based on the results generated by a regression analysis. The results indicate that out of six, four are accepted, which are Price, Product, Service & Warranty Support and Ease of Purchase. These have significant relationships in the computer buying decision. The others two are Brand and Alternative Options which have no significant relationship for this research.

5. 2. 1 Price The first hypothesis explores the relationship between price and the computer buying decision. The test results from the regression analysis shows that relationship between price and computer buying decision. In the past, price is known to be a strong and key factor affecting the computer buying decision in pc (Teo, 2008) and notebooks (Choo, 2008). However due to stiff competition, nowadays most consumers would prefer to buy a computer which is value for money or improved value for the amount they are paying. Consumers also understand that improved value for money does not mean offer lower prices but rather products which are more durable, beneficial to the consumers and work better in performance. 5. 2.

2 Product The second hypothesis analyses the relationship between product and the computer buying decision. From the results obtained from the regression analysis, it shows that there is a strong relationship between

product and the computer buying decision. This is true due to the fact that consumers nowadays are looking for and seeking out products which have better quality, more reliable and better performance computers.

Furthermore, they prefer to buy with latest technology and product features like memory, hard disk, processor and touch screen features. Nowadays consumers are smart, computer savvy and more educated, they emphasize strongly on product specifications and performance in order to give value from their purchase. Yeoh (2010) indicates that product does play a significant role influencing the consumer choice of netbook computers.

Researches are done by Chang (2007) in Taiwan and Chen and Huang (2009) to conclude that product does affect the computer buying decision. In this evolving market, consumers are seeking out for products which have better quality, more reliable and high performance products. Computer with the latest technology and product features enhance the influence in making decision. In addition, consumers are well and more educated, thus they more emphasize.

5. 2. 3BrandThe third hypothesis looks at the relationship between brand and the computer buying decision. The results from the regression analysis show that brand has not significant relationship in affecting computer buying decision. In the past research, Choo (2008)

confirms that brand does not affect consumer choice of laptop in Penang.

Based on the data collected, the famous brand, well-known brand and most advertised brand are not important for the respondents. They are not willing to pay more just because of the brand name. Besides this may due to there are so many branded with competitive price and products in the market, consumers can easily get another brand with similar price if they are not

happy with the current brand they are using or looking. Consumers use brand as a yardstick to get assurance of quality. According to Bellman and Park (1980), consumers form an opinion of a particular brand from past experiences with products and services or from word of mouth from family, friends and colleagues and also advertisements. A good brand essentially carries the marquee of excellence which will ultimately possess high brand loyalty from consumers.

5. 2. 4 Service & Warranty Support

The fourth hypothesis examines the relationship between service and warranty support and computer buying decision. The regression analysis for this factor reveals that service and warranty support has an impact on computer buying decision. According to Tsai (2007) and Chang (2007) this factor does affect and has impact computer buying decision. From this aspect, it indicates consumers do appreciate quality service and warranty support in order to gain excellent customer experience and service. It is a value add and essential for sales representatives who equip with good product knowledge and able to suggest and recommend the appropriate and suitable products which meet the customers' needs and requirements. It enhances the sales, brings higher revenue and benefits for the company. Due to the advance technology, consumers nowadays stress on the maximum uptime of the computer, thus they are willing to pay more for on-site engineer, toll free phone with 24 X 7 technical support and warranty extension from a year to two years, three years and a maximum of five years. This is crucial so that it increases the customer satisfaction and encourages repeated purchases. Batra (1995) clarifies that 68% of consumers quit on using products or services of companies because of bad service quality. Both researchers,

Zeithaml and Berry (1995) identify the ten determinants of what consumers expect from service quality and one of them is access which is measured on how well consumers could approach or contact the company. Service and warranty support is important element in all products in the market.

Companies should provide proper training, courses for sales and marketing agents, customer service representatives as well as technical support representatives. These are the front line staffs represent your company as the ambassadors and diplomats. They represent and carry the brand image and whatever they do reflect the company image. Good customer experience and service help to improve and generate customer satisfaction which links to generate customer loyalty. In other words, good services quality develops and enhances customer loyalty and it becomes the word of mouth to pass to their relatives and friends regarding the products. It is crucial and necessary to maintain a good relationship with suppliers, resellers, distributors and retailers particularly in Penang market. As we understand they are many brands in the market, they are the agents to recommend to the customers when the customers ask for recommendation. They have the control which indirectly affected the sales and business.

Briefing and training of the product knowledge to these agents are needed and necessary. These ensure they fully understand the products and provide the right introduction, recommendation and information to the customers. 5.

2. 5Ease of PurchaseThe fifth hypothesis emphasizes the relationship between the ease of purchase or so called availability. It means the mode of purchase. This hypothesis passes during the regression analysis. It proves that it is significant in influencing computer buying decision. There are many

computer shops available especially in the city and major towns. Marketers should practice good inventory control to ensure no shortage of parts and products. In the current market trend, online purchase or calling on toll-free phone lines are very common. For online purchase customers may configure their orders based on their preference, requirements and specifications to meet their needs. The products will be built based on their orders and usually it takes one to two weeks to assemble and deliver to customers. In this case, any parts shortage will cause delays in delivery and may jeopardize the image of the company. Hence, proper inventory management and control are highly recommended to ensure smooth supply to end customers.

5. 2. 6 Alternative Options

The final hypothesis investigates on the relationship between the alternative options such as smart devices like smart phones and tablets as the moderating variable proves insignificant to influence the computer buying decision. Today's digital media environment is rapidly evolving, driven by the proliferation of devices people use to consume content both at home, at work and on the go. Not too long ago, consumers depended solely on their desktop computer or laptop to connect online. In this 21st century, now, a growing number of consumers are likely to access a wide variety of digital content across a multitude of devices on a daily basis. With the introduction of smartphones, tablets and other connected devices in this digital media environment, consumers have become digital omnivores – not just because of the media they consume, but also in how they consume it. Hence, retailers are largely focused on how consumers are shopping across channels and devices. We know consumers love their mobile and tablet devices, but we are just beginning to develop a

strong understanding of how they engage with these devices as they make their purchase decisions. Smartphones and tablets penetrate into the communications and technology market actively lately. According to research firm, IC Insights both tablets and smartphones will give a much-needed boost this year to the worldwide microprocessor market, which is undergoing a fundamental change with a shift to low-power processors used in energy-efficient devices. Adding on to this, worldwide shipments of microprocessors that go into mobile devices, PCs, servers and embedded devices are expected to grow to 2.18 billion this year, up from 2.01 billion units shipped in 2012. Rob Lineback, the senior market research analyst at IC Insights said the growth will be triggered by increased shipments of tablets and smartphones, which today mostly carry microprocessors from ARM. neback. Furthermore, the growing tablet and phone shipments will result in more mobile microprocessor unit shipments. Until recently, mobile phones were the only devices supported by networks for wireless connectivity, confining the use of connected devices to areas with WiFi availability. Accordingly, the use of tablets and other web-enabled devices were predominantly fueled by WiFi connections at home and work locations. However, the growing availability of mobile broadband options and the proliferation of WiFi hotspots in public areas are changing the way people go online today. In short, the increase of WiFi availability and mobile broadband use drives the consumption on these smart devices especially smartphones and tablets. Source: comScore (2011) reports in August 2011, more than one third (37.2 percent) of digital traffic coming from mobile phones was attributable to a WiFi connection. This percentage grew nearly 3

points from the end of May 2011. On the other hand, tablets, which traditionally required a WiFi connection to access the Internet, are increasingly driving traffic using mobile broadband access. In August 2011, nearly 10 percent of traffic from tablets occurred via a mobile network connection. While tablet traffic coming over mobile broadband has only marginally increased in the past four months (by less than a percent), the general upward trend reflects the market's openness to greater mobile broadband use on tablets. The study analyzes how new-vehicle buyers use digital devices (computers, smartphones and tablets) and which websites and apps are used to gather information prior to purchase. Overall, 79 percent of new-vehicle buyers use the Internet (also referred to as Automotive Internet Users, or AIUs) to research their vehicle purchase. To be more fully understand on how people are using tablets to consume digital content, comScore (2011) conducted a survey on tablet owners addressing topics such as purchase consideration, content consumption, entertainment usage and tablet shopping behaviors. The following section provides insight into the results of this survey. In today's rapidly growing tablet market, it is important to understand the factors that shape a consumer's decision when purchasing these devices. This insight is especially critical as competition within the space heats up and manufacturers attempt to challenge the iPad's dominance. When purchasing a tablet, price was the most important consideration for the largest percentage of consumers. Nearly half of all tablets owners ranked overall cost of monthly service and the cost of the data plan specifically as very important considerations in their purchase. Network quality of the mobile service provider and price of the tablet were

also among the top purchase considerations, with 47 percent of owners selecting these options as very important factors in their decision process. Selection of apps and music or video capabilities were similarly very important for 45 and 43 percent of tablet owners, respectively. Operating system and brand name of a tablet were considered very important among 42 percent of tablet owners.

5. 3 Implications of Findings and Recommendations

5. 3. 1 Price

Price is the key determinant that influencing computer buying decision in Penang. In this current competitive market, there are so many varieties of computers in the market such as HP, Dell, Lenovo, Toshiba, Acer, Apple etc. Price is found to be a contributing factor influencing computer buying decision. Consumers are searching and looking for a competitive, cheap, and reasonable price when making the decision. Positioning the right offering and price range is important in order to match the needs, requirements and specifications of consumers. This can be done through market segmentation where higher end products are targeted to consumers who are willing to pay for the best and basic products are offered to consumers on a tight and conservative budget who require only basic features. Hence, marketers need to ensure the brand and product marketing offer a wide cum sufficient range of products to suit the needs of the segmented and target markets. From the survey, product marketing team is advised to create attractive promotion bundles to attract and increase more sales and volume of purchase. Hence, pricing strategy is very important to compete with the competitors' products to gain good market share and improve the business. Most important is when customer purchase a product, it must be value for money. This can be a defense mechanism to reduce

customer demand volatility to compete against the role of piggyback marketing.

5. 3. 2 Product The results of this study showed product has significant relationship with computer buying decision. It means and proves that product is a factor to affect computer buying decision. In current modern days, consumers are more highly educated. Based on the surveys, 55.5% are Bachelor's degree holders, this category of users would place high value on product specification, emphasize on product reliability, performance and durability which give direct impact on their work effectiveness, efficiencies, ergonomics and aesthetics. From the questionnaire of the survey, marketers are advised to produce product features with the latest model with high technology specifications, trendy design, stylish and eye-catching colours. Kotler and Armstrong (1996) share that good design can attract attention, improve product performance and give the product a strong competitive advantage in the target market. Product itself plays an important role as the quality have more perceived value comparing to its price that is offered for. Marketers also produce different and various types of range of products for customers and companies in order to cover from personal users as well as corporate users. There are various groups of users in home segments. Working adults prefer reliable, durable and innovative computers. Home users like students prefer the products which can cope with their studies, projects and assignments and also for gaming purpose. For retirement adults require only basic feature and performance. Corporate users have heavy usage for computers, the product feature and performance should be designed differently. Some of this group are frequent travelers where battery life span, energy saving and

less electricity consumptions, wide screen size, clear and high resolution of screen do improve the product features. The market expectations and requirements are important to suppliers. Positioning the right product with perfect marketing strategy in the right market and right timing are the key successful of the business. BrandBrand that has a positive brand image is perceived to be more popular and it is more reliable in the industry and market. Consumers tend to buy products with positive brand image. It is depending on the products and services of the company itself. Thus, company with positive brand image does influence the computer buying decision but not only because of the brand. In line with brand, it is suggested that marketers are advised to incorporate and offer more brand loyalty programs as the strategy for the marketing plans and customers' relationship activities. According to McConnell (1968), the loyal buyers made up the most of a brand's total sales volume especially in affordable-priced consumer products. Activities and events like pc fairs, seminars, workshops, forum, expo, partner events, alliances events and roadshow help to build the reputation of the company brand too. Service & Warranty SupportFrom the survey it is found that service and warranty support has a significant influence on computer buying decision. Communication is also part of the important asset of service quality. Learning and Development (LnD) department should know the importance of the knowledge of the sales and technical support representatives. From the frequencies test, it reflects that the respondents have higher percentage in educational background, 55. 5% are bachelor's degree and 22. 6% are master's degree holders respectively. Therefore the customers know the importance of this factor that influences

the computer buying decision. In this current world especially in this internet age, knowledge is powerful and that is why companies are competitive in providing good service and warranty support for customers. It is advisable for service providers to set up an information and knowledge management system where this is a system where the cases, issues and problems are identified and solutions are to be shared to all employees, success story telling, best practices and collaborations within the employees etc. The objective of implementing this knowledge management system is to promote a knowledge sharing culture for the organisation as in information technology industry, innovation is critically important. Ease of Purchase This factor shows a significant impact on computer buying decision. It can be defined as it is also direct or indirect related to the service and warranty service. Both of these factors work hand in hand to affect and give positive feedback from customers. Online purchase is actively used and a trend in this multimedia environment. Therefore marketers are encouraged to invest and improve on this service in order to capture more sales and conquer higher share in this pc industry. Alternative Options Lineback (2012) of IC Insights is projecting tablet shipments this year to be 167 million units, growing by 43 percent compared to last year. Worldwide shipments of application processors in smartphones are expected to go up by 8 percent as handset shipments climb. The microprocessor shipment numbers do not include baseband processors. More than 95 percent of tablets and smartphones today use ARM processors. As tablets and smartphones account for a larger percentage of the microprocessor market, a slowdown in the PC market has hurt x86 chips from Intel and Advanced Micro Devices. "

X86 is definitely not growing as fast because standard PC growth is lower than tablets and smartphones," IC Insights' study does not specifically project x86 and ARM microprocessor shipments this year. The research is mainly focused on overall processor shipments with no specific emphasis on architectures. But among mobile processors, it is a challenge to break out the numbers of ARM and x86 processors that may ship in the future. The tablet and PC categories are converging with products like convertibles, which are available in new designs such as ultrabooks with detachable touchscreens. As the lines blur between product categories, it is a challenge to predict how the microprocessor landscape will look in the next few years. ARM is doing well in mobile devices and looking to go into PCs, and Intel aims to sell Atom processors for handsets and tablets. Other recommendations

Test marketA recommended action can be carried out which is the test market for the product. This is due to the uncertainty of the success of a particular model or product to be introduced or launched in the market or industry. Regular feedbacksIt is necessary to carry out regular feedbacks from the customers to ensure the needs of the customers are met. This is important to know the issues and problems face by customers. Customers are always the backbone of the business. Happy customers will improve on revenue and profit as they stand a better chance to repurchase. Research and developmentHigher budget spending for research and development will help to improve on the performance of the products. 5. 4Limitations of the research5. 4. 1Generalisation of resultsAs for this research, it only examines on a few factors that influence the computer buying decision in computer industry. The R square is 0. 486 as per

mentioned in Chapter 4. It can be translated as only 48.6% of the factors influencing the computer buying decision in Penang. The remaining of 51.4% still remains unknown.

5.4.2 Moderating factor Apply other moderating factors such as age group and gender as these will further improve on the study to explore the factors for computer buying decision.

5.4.3 Language barrier The questionnaires administered to the respondents are only available in English. It can be more effective if the questionnaire is translated into Bahasa Malaysia, Chinese and Tamil. This will allow the respondents who are not proficient in English to better understand and respond to the questions.

5.4.4 Sample size of respondents For this research, it is only limited to Penang state and it may obtain better results if it is distributed to different states around Malaysia, to cover Malaysia market instead of only Penang state market.

5.4.5 Other needed information This research only focuses on computer buying decision and does not mention : about the company the types of computers such as laptops, desktops, ultrabooks the brand in the pc markets for e. g. HP, Lenovo, Dell, , Acer etc, the choice of the consumers population sample The research is on common basis which computer and does not focus on the type of computers. Desktop, laptops, workstations, ultrabooks are different types of computer available in the market. For this research, the sample population only targets on working adults only. It can be improved by focus on students from colleges and universities.

5.4.6 Pre-testing It is advisable to run a pre-test or soft launch for the set of questionnaire. This is to improve on the effectiveness of the factors influence the computer buying decision. If this step is taken, the results for this research may bring better benefits and advantages for the

marketers as well as the manufacturers of the computer industry. 5.

5 Suggestions for future research There are certainly few areas that can be improved for future research. The researcher may also consider a qualitative analysis can be applied for interviews or observations. It allows the researcher to have interactions and get in touch directly with the respondents. Questionnaires sent mainly to private sector and this can be further improved by sending to more participants in colleges/universities and public and government sectors. Retirees who also can be a group of customers to explore in. Working adults in different fields/industry, company of different sizes. Increase the questionnaire survey distributions to 250 in order to enhance the accuracy and spread of results. The gap of sample size for each category of demographic and profile should be minor such as gender, age group, educational background, working experience, job level, occupation and monthly income. The questionnaire can be improved by published through the internet to enable more responses from as many people globally covering respondents from different walks of life. Find out other factors besides these five factors such as choice attribute, social attribute, strategy attribute and so forth in order to get more effective factors that influence the computer buying decision. To switch the moderating variable i. e. the alternative options to independent variable to test the direct impact on the dependent variable. 5. 6 Conclusion for the research The objective of this research is to examine the factors influencing the computer buying decision in Penang. There are total of six factors (five independent variables and one moderating variable) have been tested in this study. From the results gathered in this research, price has the most

significant factor in influencing computer buying decision in computer industry. It is highly recommended that manufacturers and marketers to decrease the cost in the value claim which can involve the material cost, distribution cost and operational cost in order to offer the products at a lower price and also to cultivate and improve on sales, gain higher revenue and obtain good market share. They also need to offer the feature and allow the flexibility for consumers to customize their specifications, needs and requirements. Thus, they must always feel they are offered value for money products at all times. This is to achieve to offer the right features and products at the right time through this understanding. Last but not least manufacturers and marketers to maintain all good features in product and performance, service and warranty support as well as the ease of purchase to be the availability for the customers. At the same time, the smartphones and tablets are to be taken into considerations so that they can be a successful differentiator in the market. 4, 341Total 19, 318