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DETERMINANTS OF PURCHASE  
BEHAVIOURAL INTENTION ON VITAMIN  
SUPPLEMENT AMONG YOUNG ADULTS IN  
MALAYSIA

BY

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## DECLARATION

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(2) No portion of this research project has been submitted in support of any application for any other degree of qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

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## LIST OF ABBREVIATIONS

A	Agree
CAGR	Compound Annual Growth Rate
CI	Confidence Interval
COO	Country-of-Origin
D	Disagree
DSHEA	Dietary Supplement and Health Education Act
FDA	Food and Drug Administration
FS	Food Supplements
KL	Kuala Lumpur
N	Neutral
NSUM	National Survey on the Use of Vitamin Supplements
PhD	Doctorate
RDA	Recommended Dietary Allowance
RM	Ringgit Malaysia
SA	Strongly Agree
SD	Strongly Disagree
SE	Standard Error
SPM	High School Certificate
SPSS	Statistical Project of Social Science
TRA	Theory of Reason Action

U.S.	United States
VMS	Vitamin Supplements-Mineral Supplements
WOM	Word Of Mouth

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## PREFACE

This research project unit, UKMZ 3016 Research Project is completed by two Bachelor of International Business students as the partial requirement for the academic study. The title of the thesis is “Determinants of Purchase Behaviour Intention on Vitamin Supplement among Young Adults in Malaysia”. The research project aims to cultivate the intellectual interest and critical thinking among undergraduates besides their regular responsibilities. The research project enhances undergraduate in their integration of research capabilities and application of the theoretical elements into discussion, written and oral presentation ability.

This research is conducted to investigate the relationship of determinants that can influence young adults’ purchase behaviour intention in the vitamin supplement industry. The fact that this study is conducted also due to there is only limited number of research study done that related to vitamin supplement market in Malaysia. Besides that, the emerging awareness of importance in consuming vitamin supplement further enhance the attractiveness and relevancy of this study.

The contributors towards purchase behavioural intention in vitamin supplement are identified in this study to be brand image, customer satisfaction, trust, perceived risk and perceived value. It specifically addresses the factors that young adults can engage in certain purchase behaviour intention in vitamin supplement as pharmaceutical industry attempts to fulfil those potential market needs. In this study, young adults are targeted due to their lifestyle and educational level which fundamentally different from their predecessors.

Finally with hope, this result generated will benefit pharmaceutical company to understand better the factors that is important to emphasize in order to obtain better market share.

## ABSTRACT

The research study are developed to investigate the determinants of purchase behavioural intention of vitamin supplement among young adults in Malaysia. The main concern of this study will be around the identified factors includes brand image, customer satisfaction, trust, perceived risk and perceived value in influencing the young adults purchase behavioural intention towards vitamin supplement. There are seven hypotheses constructed in order to study and generate comprehensive results.

The target respondents in the study are Malaysians who are within the age range of 18 to 40 years old. In addition, 200-sets of valid questionnaires were collected and being analysed by using Statistical Package for Social Science (SPSS) version-23. The researchers adopted Simple Linear Regression, Multiple Linear Regression and Causal Test for Mediation Analysis.

Moreover, prior of the inferential analysis, the results of internal reliability test (Cronbach's Alpha) indicated that the measurement scales were consistent and reliable in measuring the proposed constructs. According to results generated from Multiple Linear Regression and Simple Linear Regression, all the variables (brand image, customer satisfaction, perceived risk and perceived value) except for trust indicating a significant positive relationship. Apart from that, the mediating variable (perceived value) showed a partial mediation effect upon the relationship between brand image and purchase behavioural intention.

Lastly, few limitations that hinder the research to be conducted effectively were identified and recommendations are presented to propose beneficial suggestions for further studies to be conducted.

## **CHAPTER 1: RESEARCH OVERVIEW**

### **1.0 Introduction**

The background of the research was first explained to develop a clearer picture of the pharmaceutical industry globally and the impact of consumer purchase behavioural intention towards vitamin supplement consumption in the market in this chapter. Followed by, the problem statements provided will act as a direction of this research. In addition, research objectives address the purpose of the entire research. After that, research questions will be formulated for a scrutinize discussion of this research. The hypotheses will then be established as prior assumptions of the relationships between the variables. Moreover, the importance of this research and reason of conducting the study will be explained by the significance of the research. In addition, chapters' layout of the study was written to provide an overview of each report chapters. Lastly, a conclusion will be present to summarize this chapter.

### **1.1 Research Background**

This section provides a summary of the broad field of the research with the purpose to develop an initial understanding of this research. This research project commences with an introduction to supplement industry, an overview of vitamin supplements market globally, rising of health-conscious consumer worldwide and ended with the supplement consumption among young adults in Malaysia. It will mainly explain the definition, trend and growth on the market size of the industry.

### **1.1.1 Introduction to Supplement Industry**

According to U.S. Food and Drug Administration (2017), the introduction of new dietary supplement products have gradually increased in the marketplace since the United States (U.S.) Congress passed the Dietary Supplement and Health Education Act (DSHEA) of 1994. During the enactment of DSHEA, an approximately of 600 U.S. dietary supplement manufacturers marketed around 4,000 products. Many of the substances that are marketed as dietary supplements categories into vitamin supplements, minerals, herbs, amino acids, animal-derived products, hormones and hormone analogues.

Based on legal definition of dietary supplement by DSHEA (1994), dietary supplements are “product (other than tobacco) intended to supplement the diet that bears or contains one or more of the following dietary ingredients: (A) vitamin supplements; (B) mineral; (C) herb or other botanical; (D) amino acids; (E) dietary substances for use by man to supplement the diet by increasing the total dietary intake; or concentrate, metabolite, constituent, extract, or combination of any ingredient described in clause (A), (B), (C), (D), or (E)”. Dietary supplements definition are further refined by U.S. Food and Drug Administration (FDA) (2015), as products that are unable to “represent for use as a conventional food or as a sole item of a meal or the diet where it can be marketed for ingestion in a variety of dosage forms including capsule, powder, soft gel, gel cap, tablet, liquid or indeed any other form”.

Dietary supplements group is one of the fastest growing industries in the world with the capability to generate \$32 billion in revenue in 2012 and are projected to double the revenue to \$60 billion in 2021 (Lariviere, 2013). According to Grand View Research (2016), the favourable outlook on the supplement industry growth is basically related to the rising application for

treatment of malnutrition and cardiovascular disorders. The growth of this industry is contributed to the growing awareness of consumers relating to lifestyle diseases and the higher intention of consumers to shift towards products that can offer healthy options. In addition, the uprising support from governments in terms of funding research and development has further impacted the growth of this industry (Smith, 2017).

In fact, dietary supplement market in the Asia Pacific region is among other regions which are likely to project to growth at Compound Annual Growth Rate (CAGR) of 11.2% from 2016 to 2024 due to the increasing awareness of consumers towards promotion on the use of nutritional supplements (Grand View Research, 2016). The other lucrative region for this industry is the North America where Canada and U.S. among the countries of the region will account for \$22 billion for the next seven years (Russell Publishing Ltd., 2017).

### **1.1.2 Overview of Vitamin Supplements Ingredients Market Worldwide**

Vitamin supplements have been viewed as an essential component of maintaining a healthy diet. The Recommended Dietary Allowance (RDA) has determined that the requirement for most people to remain healthy are by having sufficient vitamin supplements intake (Johnson, 2017). The nutritional disorder can cause from consuming insufficient vitamin supplements in the daily diet. As compared to other nutrition, the body does not actually store vitamin supplements.

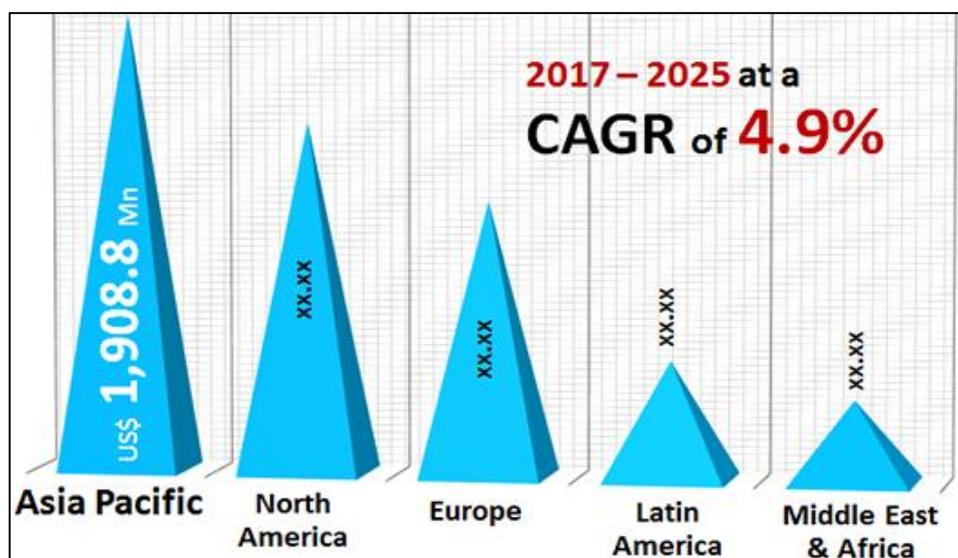
Moreover, people must consume vitamin supplements regularly as deficiencies of vitamin supplements usually require a period of weeks,

months or even years to develop. If there are an insufficient intake of vitamin supplements can increase the risk of certain cancers or other disorders develop in the body (Johnson, 2017).

Over many years, sales of vitamin supplement have surged and currently this market is valued at \$82 billion with the U.S. holds 28-percent and sales increased gradually by approximately \$6 billion between the year of 2007 to 2012 (Teichner & Lesko, 2013). The global market for vitamin supplements ingredients are spread across multiple regions such as Latin America, Asia Pacific, North America, Africa, Middle East and Europe.

Among those regions, Asia Pacific has still been leading a market region that still experiencing growth due to the fact of rising population base, increases awareness and concern on health issues and a high number of a patient suffering from vitamin supplements deficiency. Besides that, the proper development of healthcare facilities and presence of broad distribution network of companies in the Asia Pacific will continue to enhance the vitamin supplements ingredients market (Transparency Market Research, 2017).

Figure 1.1: Global Vitamin Ingredients Market Revenue by Geography, 2016 (US\$ Mn)



Source: Transparency Market Research (2017)

According to Transparency Market Research (2017), the worldwide market for vitamin supplements ingredients is remain highly competitive where companies such as Atlantic Essential Products Inc., Archer Daniels Midlands Co., Amway, Lonza Group, BASF SE and Pfizer are some of the key suppliers of vitamin supplements across the world.

### **1.1.3 Health Conscious Attitude among Consumers Globally**

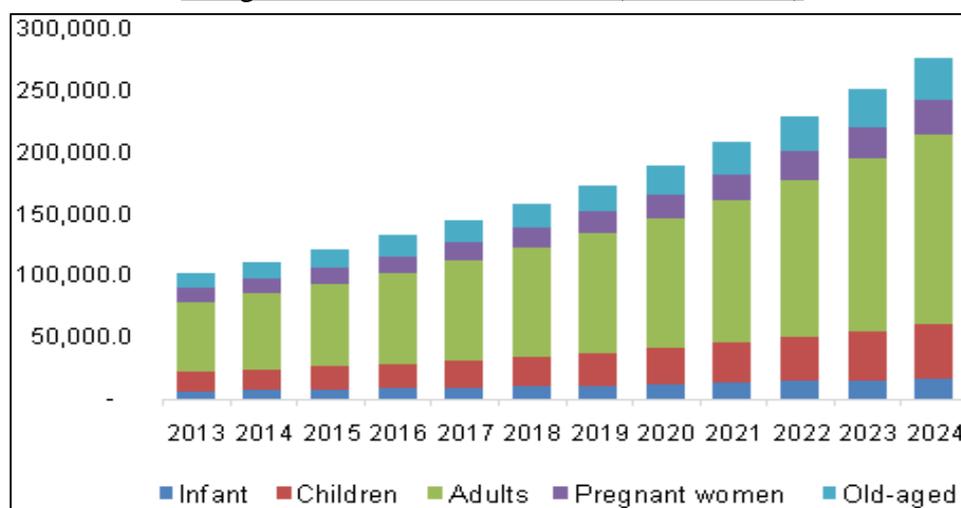
There are factors that drive an increased interest in those supplements that lead to healthy living which directly boosts the market sales. The factors are rising of an aging population, increased consumer awareness on preventative healthcare, the uprising of self-directed consumers and shift from ingredient focused messaging to broader brand positioning (Teichner & Lesko, 2013).

However, consumers' awareness on preventative healthcare and uprising attitude of the consumer to be self-directed has contributed the most. Consumers nowadays increasingly rely on alternative channels such as the internet to self-diagnose apart from just receiving professional advice from physicians. For instance, 70-percent of Americans use the internet to obtain health information in order to aid in decision making toward personal health issue (Teichner & Lesko, 2013). Thus, this trend has benefited supplements manufacturer because consumer purchase decision results from their intention to solve health issue by themselves. In fact, supplement companies also encourage this behaviour by promoting education and marketing efforts to enhance consumers' interest in personalized health solutions.

Among all categories of age group, adults were the largest consumers of dietary supplements which accounting for 55.5% comprise within the total

revenue of market (Grand View Research, 2016). The similar study also reviewed that the categories of adults comprise from young adults (18 to 35 years), middle-aged adults (36 to 55 years) and older adults (more than 55 years). However, in this research, the category of adults taken will be young adults with the age range from 18 years old to 40 years old (Veal, Hartford, & Stewart, 2010). The market growth within adults consumers are basically due to their rising awareness in terms of weight loss and maintaining a healthy lifestyle which directly promoted the application of dietary supplements. In addition, young adults' consumers are far more concerned towards healthy and clean eating as compared to other groups of adults. In fact, they willing to spend more for healthier products and products that can promote healthy lifestyles (Watson, 2015).

**Figure 1.2: Global Dietary Supplements Market Revenue, by Different Categories End-User, 2013-2024 (USD Million)**



Source: Grand View Research, (2016)

Figure 1.2 above showed the distribution of revenue earned from different age group user in dietary supplements market. From the year 2013 to forecasted 2024, adults still holds most of the market revenue while children are the second to contribute towards market revenue. While the rest of revenue distribution are among old-aged, pregnant women and infant respectively.

### 1.1.4 Vitamin supplements Consumption among Young Adults in Malaysia

According to International Trade Administration (2016), the concern of Malaysian government placed into health and well-being of its citizen together with Malaysian citizen awareness on the importance of illness prevention than cure has boosted the dietary supplements industry in the nation. With a market share of 23-percent, Singapore is the largest exporter of dietary supplements to Malaysia while the U.S. is the second largest supplier with 16-percent of market share. In fact, dietary supplement brands from the U.S. are well-trusted and accepted by Malaysian consumers (International Trade Association, 2017).

Table 1.1: Export and Import of Dietary Supplements between Malaysia and U.S.

(US\$ million)	2014	2015	2016
<b>Total Exports</b>	703,967,313	635,360,121	652,787,855
<b>Total Imports</b>	667,067,063	623,012,690	662,835,299
<b>Imports from the US</b>	111,614,257	104,748,784	106,213,332
<b>Malaysian Exports to the US</b>	4,905,198	6,626,759	4,956,850
<b>Exchange Rates</b>	3.30	3.90	4

Source: *Department of Statistics Malaysia*

Table 1.1 shows the trade statistic for dietary supplements between Malaysia and U.S. The charts proven that the rate of imports from the U.S. is much higher as compared to export rate by Malaysia. Although it fluctuates slightly between the three years, the number of imports still recorded higher than the export of dietary supplements. Thus, this indicates that Malaysian consumers are still well-received and accept dietary supplements' brands from the U.S.

According to Mohd Zaki, Tee, Rasidi, Ismail, Awaluddin, Mohamad Nor, Samad, Zainuddin (2015), the intake of vitamin supplements-mineral supplements (VMS) and food supplements (FS) among Malaysian adults were 28.05% and 34.02% respectively. The common VMS consumed among the consumers were vitamin supplements C, multivitamin supplements and calcium. Those consumers consume dietary supplements with the reasons such as to maintain a healthy lifestyle, enhance energy level and also being prescribed by physicians.

Dietary supplements such as vitamin supplements application are relatively widespread in Malaysia, but proper knowledge of supplements consumption in Malaysia is limited especially among young adults. Usually, the knowledge of supplements consumption originates from their older generation especially parents instruction. Besides that, young adults in Malaysia perceived that consuming dietary supplements is for aiding in the progress of losing weight (Yeo, Sahril, Mutalip, Mohd Zaki, & Abdul Ghaffar, 2014).

Furthermore, another prospect vitamin and mineral supplements' consumers are university students. According to a study (Al-Naggar & Chen, 2011), university students in Malaysia that consume VMS holds 43-percent of total market revenue. Majority of them consumed VMS to maintain good health (80%), ensuring adequate nutrition (10.5%), loss weight (4.8%) and finally improvise physical appearance (3.8%). Apart from family influence, friends, doctors and also supplements companies advertising are the essential sources of information that promote the use of supplement among university students.

Hence, young adults in Malaysia seems to contribute a large portion of the dietary supplements market share in the nation while the determinants of supporting these market growths seem to remain unambiguous.

## **1.2 Problem Statement**

### **1.2.1 Brand Image**

Based on Erdil (2015), the similar products in the industry were growing rapidly as a result of internationalisation. As this goes on, firms tend to focus on building a positive brand image in order to attract customers and increase market share, this includes in dietary supplement area. The brand image helps customers to differentiate among the brands of similar products and usage (Erdil, 2015). In addition, young adults are the group of consumers nowadays who are willing to spend more for healthier products and products that can promote healthy lifestyles (Watson, 2015). So, with the high intensity of competition and a numerous number of brands in supplement market, developing a consistent brand image is an essential element for the company in capturing their consumers' mind especially young adults in associate with specific values.

Furthermore, the retail success of health-related products such as dietary supplements will also depend on consumers' knowledge towards the brand characteristic (Jeong, Stoel, & Chung, 2012). The preference of brand that impacts on consumers' decision process is also likely being related from the country-of-origin (COO) of the product's brand. According to Jeong et al. (2012), people around consumers such as family members, friends, and physicians will also develop a sense of favourability towards product brand COO which influences their purchase intention. In their study, family, friends, health professional will influence consumers' intention to use either brand made from China or US dietary supplements. However, research towards the preference of vitamin supplements' brand influenced by brands' COO towards young adults purchase behaviour intention in Malaysia is presently lacking.

According to several past studies, researches were done on various fields such as apparel (Aghekyan-Simonian, Forsythe, Kwon, & Chattaraman, 2012), nostalgic restaurant (Chen, Yeh, & Huan, 2014) and smartphone (Haba, Hassan, & Dastane, 2017) regarding the relationship between brand image and behavioural intention. However, the results of those findings were inconsistent. There is also lack of study of these variables in vitamin supplement industry.

Therefore, these factors drive this research to find out whether there is any significant relationship between brand image and young adults purchase behavioural intention of vitamins supplement.

### **1.2.2 Customer Satisfaction**

According to Oliver (1993) as cited by Sashi (2012) customer satisfaction has been categories into two which are transaction-specific customer satisfaction and cumulative customer satisfaction. Most of the research focuses on cumulative customer satisfaction as it is widely defined as overall evaluation based on the total purchase and consumption experience of good or service over a period of time (Anderson, Fornell, & Lehmann, 1994 as cited by Sashi, 2012). When a high level of satisfaction was achieved, where it surpassed the expectation, it is known as delight instead of just satisfied (Oliver, Rust, & Varki, 1997 as cited by Sashi, 2012).

Some research stated that customer satisfaction is a crucial element for any business entity as it will lead to repurchase behaviour and purchase intention (Chang, Chou, & Chien, 2014). It is also proven when customer felt satisfied through the purchase of product or services, the likelihood of repurchase is high due to the offerings have fulfilled their needs and expectation

(Zeithaml, Gremler, & Bitner, 2012). Satisfied customers will engage more in behavioural intention such as spread a positive Word Of Mouth (WOM), revisit intention and increase willingness to pay based on a study regarding the restaurant's service in Hong Kong (Heung & Gu, 2012).

However, researchers also showed that customer satisfaction has an insignificant impact towards behavioural intention (Chow, Lau, Lo, Sha, & Yun, 2007). Customer satisfaction plays an important role in behavioural intention and directly link to the company's performance, and the relationship of these variables are hard to determine from the past study. Therefore, this research developed to find out that whether young adults' satisfaction has an influence towards purchase behavioural intention on a vitamin supplement.

### **1.2.3 Trust**

Trust, a powerful factor that determines the success of a company (Morgan & Hunt, 1994 as cited in Alan & Kabadayi, 2017). The company that builds a trusting relationship with consumers are a company that develops a sense of belief among consumers toward their brands' safety, honesty, and reliability (Abdul, S.Gaur, & Penaloza, 2012).

Consumers are expecting product able to achieve a minimum standard of quality and with numbers of counterfeit goods in the market make trust a challengeable element for product stay favourable within consumers. Moreover, the product needs to develop strong attributes and brand in order to differentiate with counterfeit goods by fact consumers remember and trusted more easily. When consumers trusted the product due to strong brand

personality, they will perceive less risk than unbranded alternatives (Leonard & Katsanis, 2013).

Furthermore, a certain product such as food, the government will determine the product are trustable by having certified labels (Yin, Chen, Chen, Xu, Zou & Wang, 2016). Those labels seem convincing enough to build trust among consumers, however, recently, consumers have being distrust toward products with government certified label by suspecting that the products can be fraudulent or attained without meeting necessary standard and even distrust the government ability to uphold this standard (Wu, Yin, Xu, & Zhu, 2014).

The rise of counterfeit goods in the market with government credibility being questioning has raised problems on how to develop a rightful trust within consumers toward products (Yin et al., 2016). The level of trust is hard to determine as individuals' have varies belief, needs and wants. Although with multiple researches indicating there are significant relationship between consumer trust and behavioural intention (Tonder, Petzer, & Zyl, 2017; Hsu, Liu, & Lee, 2010) , but with the limited research done on consumer trust in vitamin supplement area make this research a main concern for marketer to further understand consumers' purchase behavioural intention on vitamin supplement. Therefore, this study is conducted to determine whether consumer trust will influence purchase behavioural intention among young adults.

### **1.2.4 Perceived Risk**

According to Rundmo and Nordfjaern (2017), the risk perception research has been dominated by two theories that are a psychometric paradigm and cultural theory by Douglas (1982), but many studies previously done were unable to support sufficiently on research aimed at explaining perceived risk by the cultural theory, which eventually has to forgo. Therefore, the focus is only on the psychometric paradigm. The basic assumptions in the psychometric paradigm is that perceived risk is multidimensional which are able to measure by the unique characteristic of risk sources that includes voluntariness of risk, immediacy of effect, knowledge about risk in science, newness, catastrophic, common the control over the risk exposure and the severity of consequences (Rundmo & Nordfjaern, 2017). However, those assumptions proved the lack of exposure in the concept of consumer-focused risk perception, especially on product-specific factors.

In the study by Solomon, Bamossy, Askegaard, and K.Hogg (2006) on describing varying dimensions of perceived risk used nowadays such as physical, functional, financial, social, psychological and time risk no matter in the product-related or service-related field. Based on Choi, Lee and Ok (2013), those dimensions of perceived risk proposed by Solomon et al. (2006) shall use to measure the overall overview of risk perception on behavioural intention.

There are few studies adopted indicating that perceived risk are able to significantly impact behavioural intention (Thakur & Srivastava, 2014; Shen, 2013; Kim & Lennon, 2013; Chen, 2013; Cameron, Brown-Lannuzzi & Payne, 2012; Aghekyan-Simonian et al., 2012). However, those studies basically measure the risk perception in the service-related field only. The studies on those dimensions of perceived risk towards product-related field especially supplement industry are still limited. By determining

whether those risk perception dimensions (functional, physical, financial, social, psychological and time risk) will able to hinder consumers especially young adults purchase behavioural intention in vitamin supplement will be a concern for the marketer because young adults hold the most market share in the supplement market. This study will able to solve the unambiguous relationship between the perception of risk and purchase behavioural intention in a vitamin supplement. Therefore, the study is conducted to determine whether the perception of risk will influence young adults purchase behaviour intention towards vitamin supplement.

### **1.2.5 Perceived Value**

Perceived value was traditionally been viewed as a trade-off between the price of product or service and quality received from the product or service. This definition may be viewed by an equation, where it states that value perceived by the customer stand for the differences between perceived benefits and sacrifices (Brito & Formoso, 2014).

The past studies of the relationship between perceived value and behavioural intention were done, and the result showed higher customers' perceived value causes more adoption intention to a product (Liu, Zhao, Chau & Tang, 2015), high repurchase intention (Wang & Yu, 2016; Widiанти, Sumaedi, Bakti, Rakhmawati, Astrini and Yarmen (2015) and spread positive WOM (Widiанти et al., 2015). However, Yu, Zo, Choi, and Ciganek (2013) proved an insignificant relationship between these variables.

Benefits bring positive impact to perceived value and cost brings negative impact to perceived value. So, in order to improve particular product perceived value, the company has to develop additional benefits at the same time reduce the cost of purchasing (Bajs, 2015). In addition, customers' perceived value considered as a source of competitive advantage for a business (Lusch & Vargo, 2014). Moreover, the past studies provide a different point of view between these variables as well as insufficient studies had been done on the dietary supplement industry. Therefore, this current study is being conducted to further investigate the relationship perceived value and vitamin supplement purchase behavioural intention among young adults.

### **1.2.6 Behavioural Intention**

The changing lifestyle today along with the increased awareness of personal health has raised the intention to purchase and consume dietary supplements in Malaysia (Mohd Zaki et al., 2015). With the high penetration of supplement companies in the market together with the existence of intense competitive landscape, it is important to determine the right features for fulfilling consumers' wants. With establishing exact features to develop favourable brand image help marketers focus on the products that are positively correlated with consumers' behavioural intention (Tariq, Nawaz, & Nawaz, 2013).

In addition, a study by Mohd Zaki et al. (2015) proven that one of the purpose Malaysians take dietary supplements are due to being prescribed by physicians such as doctors and pharmacists. Customers in the past five years will eventually just trust the prescription by physicians, but now consumers tend to expect more information about the supplements they consumed. Pharmacists in Malaysia appearing to have limited formal training provided

by supplements' manufacturer (Scattergood, 2016), so if these cause health issues to consumer from the wrong prescription, consumer purchase behaviour in that vitamin supplements brand will eventually cause a negative impression.

Despite with acknowledgment that vitamin supplements can provide health benefits that reduces risk of diseases as well as improve nutritional value, a complete understanding of consumers' behavioural intention especially young adults towards vitamin supplement in Malaysia is still presently lacking (Teng, Tey, Lim, Cheng, Nordin, Ng, Wan Zakaria & Wong, 2008 as cited in Mohd Noor, Yap, Liew, & Rajah, 2014). Therefore, this study is conducted to investigate whether consumers' especially young adults' behaviour intentions are the main concern in vitamin supplement area.

## **1.3 Research Objectives**

The purposes of this research are to identify solutions for the problem statements mentioned earlier by developing the general objective and specific objectives.

### **1.3.1 General Objective**

The main objective of this research is to clarify the determinant of purchase behavioural intention on vitamin supplement among young adults in Malaysia. It is to examine whether the proposed factors (brand image, customer satisfaction, trust, perceived risk) were able to contribute to purchase behavioural intention on vitamin supplement among young adults in Malaysia. In addition, the research also meant to find out the mediating effect of perceived value between brand image and purchase behavioural intention on vitamin supplement among young adults in Malaysia.

### **1.3.2 Specific Objectives**

The specific objectives of the research are as follows:

- a) To determine the relationship between brand image and young adults perceived value towards vitamin supplement in Malaysia.
- b) To determine the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention in Malaysia.
- c) To determine the relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention in Malaysia.
- d) To determine the relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention in Malaysia.
- e) To determine the relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention in Malaysia.
- f) To determine the relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention in Malaysia.
- g) To determine the mediator effect of vitamin supplement perceived value towards the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

## 1.4 Research Question

The research questions were formulated as follows:

- a) Is there a relationship between vitamin supplement's brand image and young adults' perceived value to the brand in Malaysia?
- b) Is there a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention in Malaysia?
- c) Is there a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention in Malaysia?
- d) Is there a relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention in Malaysia?
- e) Is there a relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention in Malaysia?
- f) Is there a relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention in Malaysia?
- g) Is there any mediation effect of perceived value towards the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention?

## **1.5 Hypotheses of the Study**

The hypotheses of the study were formulated as follows:

H1: There is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.

H2: There is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

H3: There is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.

H4: There is a relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention.

H5: There is a relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention.

H6: There is a relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention.

H7: Vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

## **1.6 Significance of the Study**

The rise of concern and awareness towards diseases as well as malnutrition has increased the purchasing reason of consumers toward healthcare products, especially vitamin supplements. Consumers nowadays purchase vitamin supplements in order to manage their health, general well-being and appearance.

The manner that consumers purchase vitamin supplements is either through self-experience, recommendation by friends and family members or the higher likelihood is through prescription by physicians. The trust in consumers toward recommendation from others seems to work in purchasing of vitamin supplements.

Subsequently, consumers also tend to recognise vitamin supplements in different aspects such as recognising the brand, physical appearance and manufacturer of the particular vitamin supplement. Furthermore, customers may satisfy due to the brand of vitamin supplements consumed are able to solve their health problem but the same brand might not able to work on others which lead to dissatisfaction. Therefore, the research is essential for marketers to understand which factors have an impact on consumer purchase behaviour intention towards vitamin supplement.

Apart from that, this research anticipates in contributing to both academic and industrial sector. The study of consumers' purchase behavioural intention provides information for marketing literature on the academic field in future. Furthermore, there is also the contribution of the few significance finding of this study: (1) the influences of brand image, customer satisfaction, trust, perceived risk, and perceived value on consumers' purchase behavioural intention and (2) the mediation effect of perceived value between brand image and purchase behavioural intention.

Based on the reviewing of various past researches (Lien, Wen, Huang, & Wu, 2015; Choi et al., 2013; Tonder et al., 2017), there are indeed lack of empirical study with single framework that was similar to the constructed framework proposed in this study. In fact, it is believed that there were areas that have been missed out. So, the gaps of the previous study provide an opportunity for this research to be conducted.

Consequently, industrial sector contribution from this research is crucial in the present market. The in-depth explanation of each variable on consumers' purchase behaviour aids firm in the area that they need to focus either consumer pre-purchase behaviour, post-purchase behaviour or both. This will clearly affect the firms' profitability and market share. In the same time, it plays an important role in customer creation and retention mechanism. Hence, it will prove the interrelationship between all the variables (brand image, customer satisfaction, trust, perceived risk, perceived value, behavioural intention) in the practical point of view.

## **1.7 Chapter Layout**

### **1.7.1 Chapter 1: Research Overview**

This chapter discussed and provided a clear understanding of the whole research project by briefly explaining the research background and problem statement. Furthermore, it explained the research objectives, research questions and the list of hypotheses. It also outlined the general plan of the research.

## **1.7.2 Chapter 2: Literature Review**

This chapter provides a brief overview of the past literature related to the variables relevant to the study. Moreover, a conceptual framework was developed to examine the interrelationship between those variables. Along with the developed framework, hypotheses of the study was established to solve the problems stated and achieve the objectives of these study.

## **1.7.3 Chapter 3: Research Methodology**

Chapter three illustrated the research methodology by including the research design, data collection method, sampling design, research instrument, construct measurement, data processing and data analysis method. It also portrays the implementation of data-gathering exercise for analysis.

## **1.7.4 Chapter 4: Data Analysis**

This chapter shows the results of analyses in relation to the research objectives and hypotheses developed in the study. All the details of respondents and result of various analyses findings included descriptive analysis, scale measurement, inferential analysis and result of mediation test are shown.

### **1.7.5 Chapter 5: Discussion, Conclusion and Implications**

This last chapter will conclude the entire research study. It mainly mentions about the results obtained in the previous chapter, explanation on the implication, limitation and future research. It also discussed the finding based on the result obtained from the data analyses.

## **1.8 Conclusion**

In conclusion, this chapter provided details on global supplement industry, vitamin supplements market, target audience (young adults in Malaysia) and their health consciousness as well as consumers' purchase behavioural on a vitamin supplement. This chapter also brief on the importance of study, the background of research, problem statements, and construct of research objectives, research questions and hypotheses. Moreover, this chapter listed the chapter layout together with their explanations. The following chapter will provide an overview of past relevant studies conducted by other researchers in order to establish a clearer picture of the study.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.0 Introduction**

Consumers nowadays consume vitamin in a manner that either being prescribed by the physicians who have basically ensure the vitamin are suitable to be consumed or being self-consume based on own experience with the availability of a particular vitamin. Unlike many products, while vitamin can bring positive effect on consumers' health, it also can bring adverse effect (Melnikas & Smaliukiene, 2007). Therefore, in order to ensure consumers behave positively toward the vitamin they consumed due to the positive effect it brings, pharmaceutical manufacturers' brand name plays a role ensuring the vitamins produced are quality and safe to consume considering the importance of bringing value to customers; also consumers satisfaction are generated when vitamin effect performed beyond expectation, while at the same time trust towards the vitamin is essential as well as taking consideration on the risk that consumer might encounter while consuming certain vitamin.

## 2.1 Review of Literature

### 2.1.1 Behavioural Intention

According to Ajzen (2002), behavioural intention defined as “an individual’s anticipated or planned future behaviour, which is also an indication of an individual’s readiness to perform a given behaviour” (p. 665). This definition is adapted and supported from Oliver and Swan (1989) as cited by (Endah, Umar, Suharyono, & Andriani, 2017) who firstly defined behavioural intention is consumer’s expected future behavioural.

Later on, the definition by Oliver and Swan (1989) was then referred to as individual expectation of future behaviour towards something (Armitage & Conner, 2001) as cited by (Armitage, Norman, Alganem, & Conner, 2015). Another study indicated that behavioural intention is a perceived relationship between individuals and their behaviour (Jaccard & King, 1977).

Moreover, behavioural intention can also explain as the predictor of consumers to repurchase resulted from satisfactory experience or intention to switch to competitors resulting from unsatisfactory experience (Zeithaml, Berry, & Parasuraman, 1996). Therefore, firms have to understand consumers’ behavioural intention by tailoring product according to specific consumers’ needs and want in order to gain new customers and retain the existing one.

From time to time, behavioural intention was taken in various field of studies including human resource (Allen, Shore, & Griffeth, 2003), hospitality (Jang, Kim, & Bonn, 2011), tourism (Lam & Hsu, 2006) and also

restaurant (Chen et al., 2014; Heung & Gu, 2012; Ryu, Han, & Kim, 2008). Behavioural intention is viewed to be individual's willingness in involving to a certain behaviour (i.e. purchase intention, repurchase intention, loyalty) (Kim & Hunter, 1993).

Behavioural intention basically relates to individual psychological state that motivates them to engage in a course of action such as revisit, repurchase or spread WOM (Wu & Wu, 2008). This is the reason for behavioural intention to be taken as the dependent variable in many different researches (Han & Ryu, 2009; Getty & Thompson, 1994; Hsu et al., 2010).

Behavioural intention have proven previously to have strong influenced by brand image (Aaker, 1996; Rory, 2000; Gensch, 1978), satisfaction (Mahapatra, 2015), trust (Hsu et al., 2010), perceived value (Weng & Run, 2013) and perceived risk (Kim & Lennon, 2013). Fishbein and Ajzen (2005), provide assumption that motivational variables that influence behaviour are ingrained in consumers' intention which eventually lead to individual willingness to put in the effort for performing the relevant behaviour.

According to previous researches, brand image, perceived risk, perceived value and trust play an important role in consumers' pre-purchase behaviour (i.e. purchase intention). While, customers' satisfaction focus more on consumers' post-purchase behaviour (i.e. WOM, repurchase intention).

For the purpose of this research, consumers' purchase behavioural intention in vitamin has acted as the dependent variable and is examined along with those variables (brand image, customer satisfaction, trust, perceived risk and perceived value) as the determinant in consumers' continuous intention

toward a particular vitamin. In fact, in this research, both behavioural intention and purchase intention are used interchangeably.

### **2.1.2 Brand Image**

Based on Erdil (2015), homogenous products emerging in the markets are evolving fast and the number expand rapidly due to the effect of globalization. As this continues, firms tend to focus on building a positive brand image in order to attract customers. Furthermore, it also acts as the customers' retention mechanism. Brand image plays an important role to increase customers' purchase intention. It helps customers to differentiate among the brands of similar products.

In addition, brand image was stated as the core component for purchasing when comparison among brands was made (Kwon, 1990). Another research supported that selection decision will be made base on the stronger brand image (Ataman & Ülengin, 2003).

Brand image was widely defined as a group of attributes and associations which consumers connect to a particular brand (Biel, 1992). It also explained in such that a customers' reaction toward any brand name, impression or sign which perceived the quality of the products (Magid, Cox, & Cox, 2006).

In addition, Keller (1993) provides a definition of brand image as the perception of any brand's associations which held in consumers' mind. The associations may touch on any brand's aspects kept in consumers' memory (Aaker, 1996). Moreover, Robert and Patrick (2009) further explain brand

image as brand's abstract held in customers' memory which customers' perceived the brand image through their logical and sensitivity.

However, Dobni and Zinkhan (1990) provide a different point of view which describe brand image that consist of four important elements included (1) customer's perception and interpretation, (2) perceiver characteristic and aid of marketing activities, (3) customer's understanding and (4) importantness of perception compared to reality.

Brand image can pertinent to the perception of the customer in terms rational basis or emotional context towards a specific brand (Maholtra, 2010). The particular concern of brand depends on both the name selection itself and also the relevancy of the chosen name (Aaker, 1997). Brand image that is positively viewed able to develop a favourable marketing program and generate unique brand association to strongly embed in consumers' mind (Schiffman & Kanuk, 2010).

In addition, a strong brand image can possibly help the firm to create competitive advantage and lead consumers desire to choose a particular brand (DeShields, Kara, & Kaynak , 2005). Through this understanding, brand image has become an impression built in consumers through their past experience with the particular brand of a product that will eventually influence consumers' future intention with it.

Thus, brand image has become an increasingly essential component in measuring consumer behavioural intention.

### **2.1.3 Customer Satisfaction**

Customer satisfaction was initially introduced by Cardozo (1965) as cited in Bei and Chiao (2006), where the authors emphasize on the enhancement of customers' satisfaction will lead to improvement of repurchase behaviour and purchase intention of other products (Chang et al., 2014).

When customer felt satisfied through the purchase of the offerings either product or services, the likelihood of repurchase is high due to the offerings have fulfilling customer needs and expectation (Zeithaml et al., 2012).

Subsequently, this is supported by the relation of customers' expectation towards what they purchase. The different degree of product quality is required to fulfil in order to satisfy customers and motivate them to behave accordingly especially when a certain degree of expectation within customers' mind is set (Liang & Zhang, 2012).

Furthermore, according to Fornell (1992) customer satisfaction was mainly relevant to customer expectation and also perceived performance. In addition, Johnson, Anderson, and Fornell (1995) provide the refined same opinion by adding that customer satisfaction acted as an accumulated construct that is affected by performance perception and market expectation for an individual in the past.

Moreover, a study found out that satisfaction consists elements of perceived performance and disconfirmation of belief (Oliver, 1980). Wirtz and Bateson (1999) further explained customer satisfaction by including uncertain performance expectation. In short, those elements mentioned actually the level of expectation set by consumers toward a product in terms of performance which will result in either satisfaction or dissatisfaction.

However, some studies emphasize that customer satisfaction are also influenced by the effort exerted on marketing activity which will highly result in consumers' post-purchase behaviour (Pakdil & Harwood, 2005; Holbrook, 1994).

Consequently, customer satisfaction has a high possibility to impact business profit (Anderson & Fornell, 1994; Chitty, Ward, & Chua, 2007), shareholder value (Anderson, Mazvancheryl, & Fornell, 2004) and consumers' purchase intention (Yoo & Park, 2007; Riscinto-Kozub, 2008).

In fact, a company that neglects its customers' needs and wants are likely to cause damage to brand and product (Mudzanani, 2008). A consumer that engage in unfavourable action such as complaining or spreading negative WOM actually bring more undesirable consequences to the growth and profitability of the company.

#### **2.1.4 Trust**

Trust can be viewed from the aspect of emotional context where an individual has a sense of security and believe about depending on others (Komiak & Benbasat, 2006 as cited by Idemudia & Raisinghani, 2014). Trust also being concerned with the willingness of an individual to accept susceptible on the ground of positive expectations about behaviour intention of another in a situation characterised by interdependence and risk (Ennew & Sekhon , 2007).

The definition provided is a combination both the aspect of cognitive and emotional that indicating trust dimension. In fact, when various situation associated with the different level of risk, consumers' trust is the utmost

element needed when dealing with the unambiguous situation (Kesharwani & Bisht, 2012).

Trust holds a key role in social interactions where there is mutual interdependence between uncertainties and reliability and tends to affect people in living a great deal. As pharmaceutical manufacturer produces on their vitamins, gaining consumer trust will require a building process which is a time-consuming and continuous process (Stamoulis, 2010).

Trust creates value in products where the customer can see it and encourage to use it (Gu, Lee, & Suh, 2012). Moreover, some researchers associated that different degree of trust will lead to different levels of behavioural intention (Gefen, Karahanna, & Straub, 2003).

Apart from it, trusting and depending on preferred brand favour some positive buying intention as customers' understanding of the product based on past experiences. Once the brand is convincing and able to solve consumers' problem, consumers tend to have a high degree of reliance on that particular brand (Lau & Lee, 1999). When consumers' trust on either the product or service, they assume their trust given and received are expected which eventually reduce the complexity in terms of interaction and transaction.

Trust has been identified in multiple dimension, but there are several researchers classified trust into two major dimensions which are credibility and benevolence trust (Casielles, Alvarez, & Martin, 2005; Kantsperger & Kunz, 2010). The credibility trust relates to the notion that the product is able to perform at a level required by the consumers, while benevolence trust implies that the interest of consumers being taken into consideration.

In fact, trusting to a particular brand will eventually lead to favourable behaviour on engaging to that brand.

Therefore, trust is measured in this study to examine how credibility and benevolence trust will eventually impact consumer purchase behaviour intention towards vitamin supplement.

### **2.1.5 Perceived Risk**

Since the idea of consumer perceived risk has been defined as “consumer’s feeling of uncertainty about the consequences of transactions” (Bauer, 1960) or in short is the consumers’ behaviour of being risk-taker and risk-averse. Based on other researchers, perceived risk has been viewed as “combined effects of probabilities, the uncertainty involved in a purchasing decision, and the consequences of taking an undesirable action” (Arndt, 1968; Cunningham, 1967; Gronhaug, 1975).

However, the concept of perceived risk was then refined to a multidimensional concept that takes into consideration of psychological, financial, physical, performance and social risk (Jacoby & Kaplan, 1972).

Based on the refined version, the risk now evaluated in a manner of understanding the reaction of consumers to a potential hazardous outcome which related to the choices they made (Choi et al., 2013). Vitamins consumption are included in this case. According to this study, the perception of risk will be conceptualized as the possibility of unfavourable, negative and hazardous ramifying resulting from the purchasing and consumption of consumers on vitamins.

In the study by Choi et al. (2013), the researchers explained the effect of these risks towards consumer behaviour intention. The psychological risk is the risk associated with consumer loss of self-concept (Murray & Schlacter, 1990). Consuming wrong vitamins may not effectively solve consumer problem but in fact, it will cause consumers to have negative emotions like regret or disappointment.

In addition, financial risk is a risk where the consumer is highly sensitive as it generates a likelihood that the purchase unable to create value for the amount of money consumer spent (Snoj, Korda, & Mumel, 2004; Roehl & Fesenmaier, 1992). This can be related to consumers on their perception of risk when they acquired a product which does not provide the benefits that outweigh the invested money (Snoj et al., 2004).

Although vitamins can aid in solving consumers' health problem, if the vitamins do not work well, the money value created may unable to fulfil consumers desirable wants. As stated earlier, vitamins can bring both positive and negative effects to consumers' health (Melnikas et al., 2007), vitamins consumption create an increasing alert and concern to physical risk (Fitzgerald, 2009).

Physical risk creates unease that links to illness or injury from a purchase which also likely that the purchased can lead to the hazardous outcome on consumers' life (Fagerli & Wandel, 1999; Lee, 2009). While social risk is a risk where consumers loss of respect and esteem (Murray & Schlacter, 1990). This risk relates to purchasing and consuming a product that associated with a possible loss of status in a social group (Lee, 2009).

Hence, those dimension of risk overviews the relationship between consumers' perceived risk on vitamin supplement and their purchase behaviour intention.

### **2.1.6 Perceived Value**

The perceived value that traditionally been viewed as a trade-off between the price of product or service and quality received from the product or service (Sinha & DeSarbo, 1998) as cited by (Brito & Formoso, 2014). While the definition of perceived value been refined and adapted by few different researchers, perceived value later been defined as an overall assessment of customers toward the utility of product or service according to the trade-off between benefits that customers receive from product or service and all the cost required to pay for obtaining such benefits (Dodds, Monroe, & Grewal, 1991; Hallowell, 1996; Zeithaml, 1988).

Currently, the perceived value found to be more understandable when evaluated on consumer behaviour intention or in other justification that perceived value is a variable that significantly affects behavioural intention (Allameh, Pool, Jaber, Salehzadeh, & Asadi, 2015; Petrick, 2004).

Researchers also indicated that the development of different level of perceived value of the product will have an effect on future customer behaviour (Baker, Parasuraman, Grewal, & Voss, 2002; Grewal, Monroe, & Krishnan, 1998).

Perceived value earlier defined as a trade-off between benefits and cost associated with a consumer behavioural intention on a product (Dodds et al., 1991). Based on that, perceived benefit and perceived cost or sacrifice are

taking into consideration as components of uni-dimensional perceived value measure.

Perceived benefits indicating consumers' feeling on what they received from the product which consists quality, external and internal features (Zeithaml, 1988) while perceived sacrifice include monetary cost and non-monetary cost such as physical effort, cost of time and changing of lifestyle associated with consuming said goods (Snoj et al., 2004).

By understanding to that, benefits bring positive impact to perceived value and cost brings negative impact to perceived value. In order to improve particular product perceived value, the company has to develop additional benefits at the same time reduce the cost of purchasing (Bajs, 2015). However, the application of these variables somehow creates misleading belief as a customer might feel satisfied purchasing a product but it does not overall consider the purchased creates good value (Gill, Byslma, & Ouschan, 2007).

There are number of research have evaluate perceived value by adopting the uni-dimensional measure (Cronin, Joseph, Brady, Hult, & Thomas, 2000; Cronin, Brady, Brand, Hightower Jr, & Shemwell, 1997) when there are limited number of items value being determined that can represent overall measure of perceived value. In addition, the determinants of value are in fact differ across different customer (Sweeney & Soutar, 2001) as well as the measure lacks validity (Bolton & Drew, 1991).

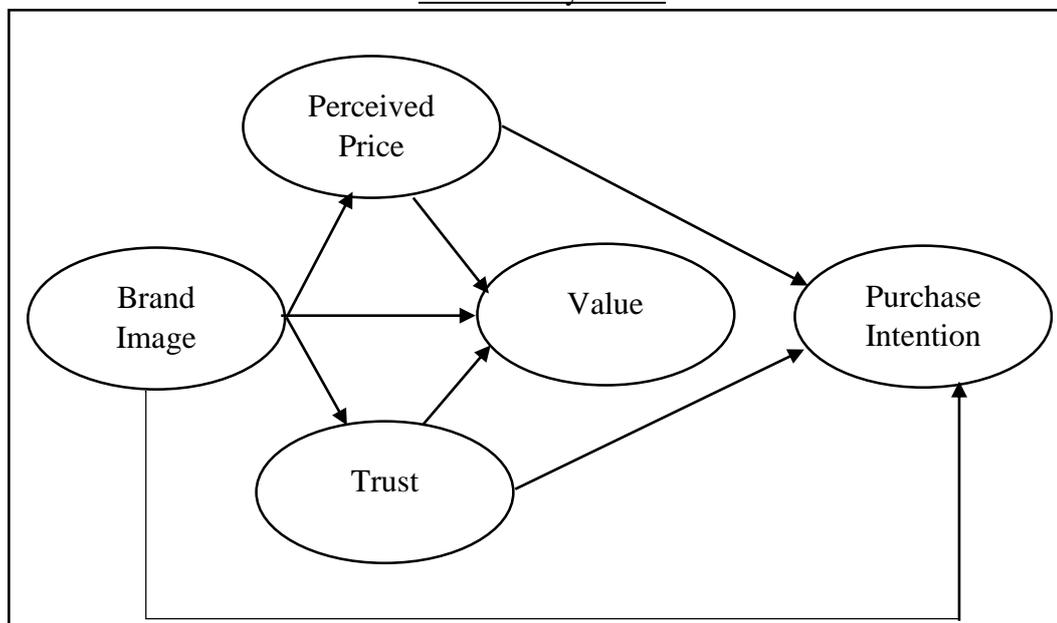
Through these drawbacks recognition of uni-dimensional measure, Sweeney and Soutar (2001) developed the first multi-dimensional perceived value measure or PERVAL that considering four dimensions of value which

are price, quality, social value and emotional value that related to the purchased of products in a retail setting.

This measure explains better on behavioural outcomes regarding consumers' choice than the measure on "overall value for money" context as single-item scale unable to explain thoroughly perceived value concept (Sweeney & Soutar, 2001).

## 2.2 Review of Relevant Theoretical Model

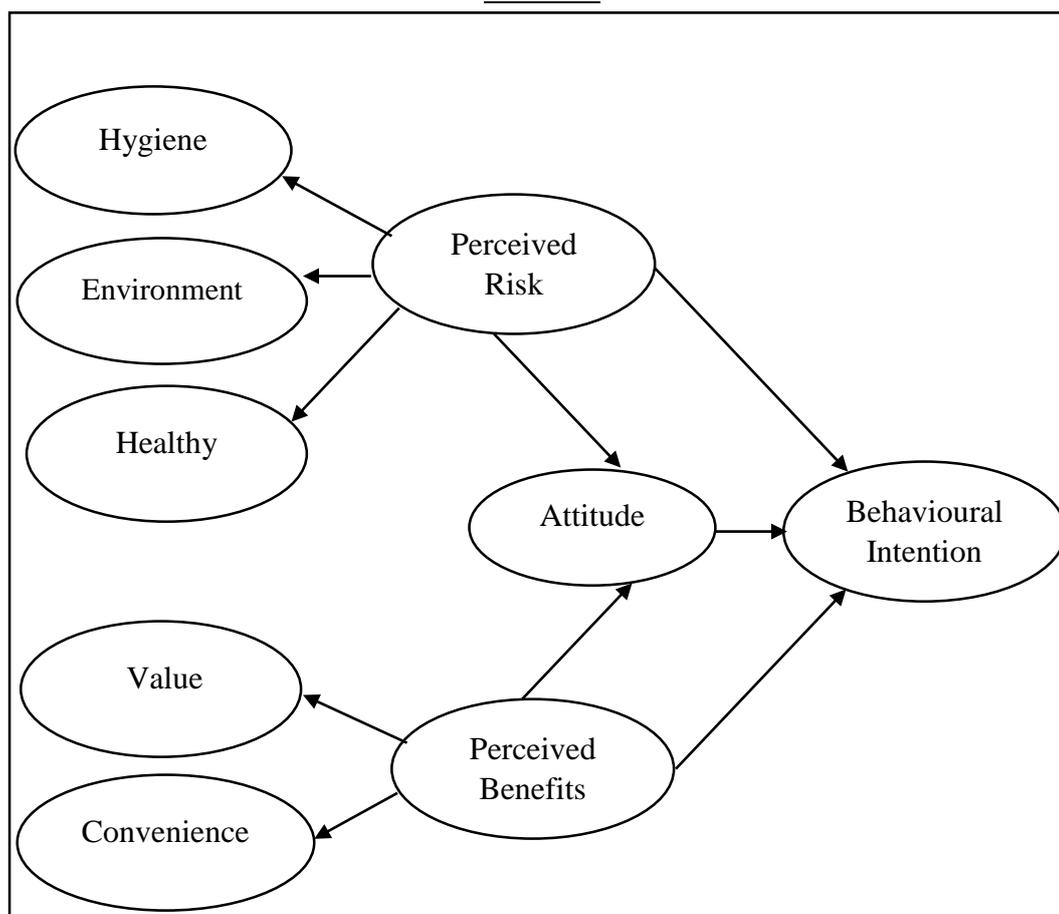
Figure 2.1: Theoretical Model of Brand Image and Trust affect Purchase Intention Mediated by Value



Source: Lien, Wen, Huang, and Wu (2015).

The study by Lien et al. (2015), investigated the effects of brand image, perceived price, trust and value on consumer behaviour intention to purchase. As shown in the framework, the relationship between brand image and purchase intention is intervened by value. Based on the research result, the value is a positive and significant predictor of the purchase intention. In addition, brand image in the study proven to be the main driver to positively impact purchase intention. The effort to enhance brand image will eventually improve consumer behavioural intention. In fact, brand image positively affects value by increasing the value demonstrated by the product. Thus, in short, the study result indicated brand image, value and behavioural intention have a significant relationship with each other.

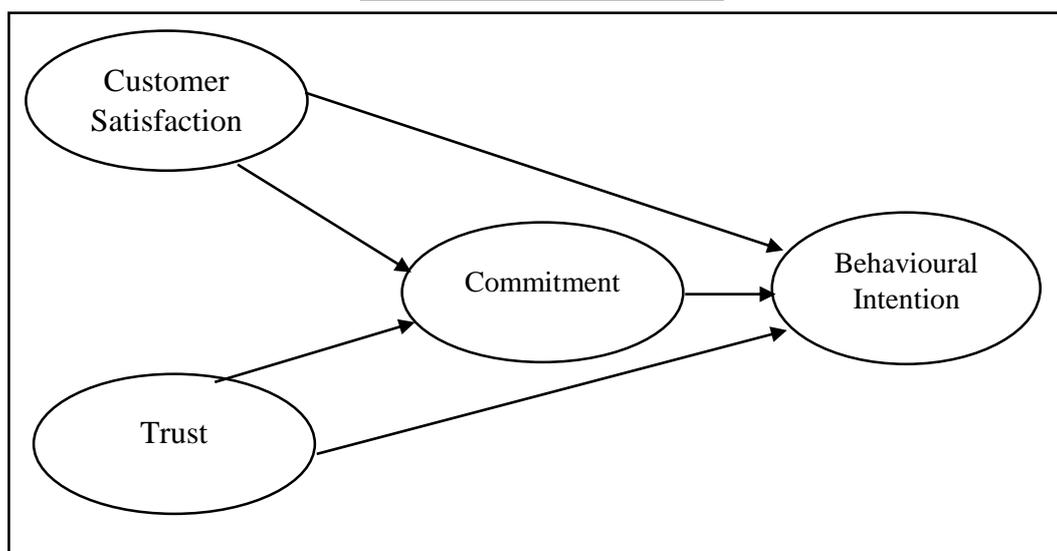
Figure 2.2: Theoretical Model of Indicating Perceived Risk affect Behavioural Intention



Source: Choi, Lee, and Ok (2013).

According to the study conducted by Choi et al. (2013), the framework is developed to examine the interrelationships among the variables (perceived risk, perceived benefits and attitude) and measures variables comparative effect on influencing consumers' behavioural intentions. The proposed model provides additional evaluation and justification on consumers' perceived risk together with benefits as the determinants of consumers' behavioural intention. However, for the proposed model of this research, the only effect of perceived risk on behavioural intention was adopted.

Figure 2.3: Theoretical Model of Indicating Customer Satisfaction and Trust affect Behavioural Intention



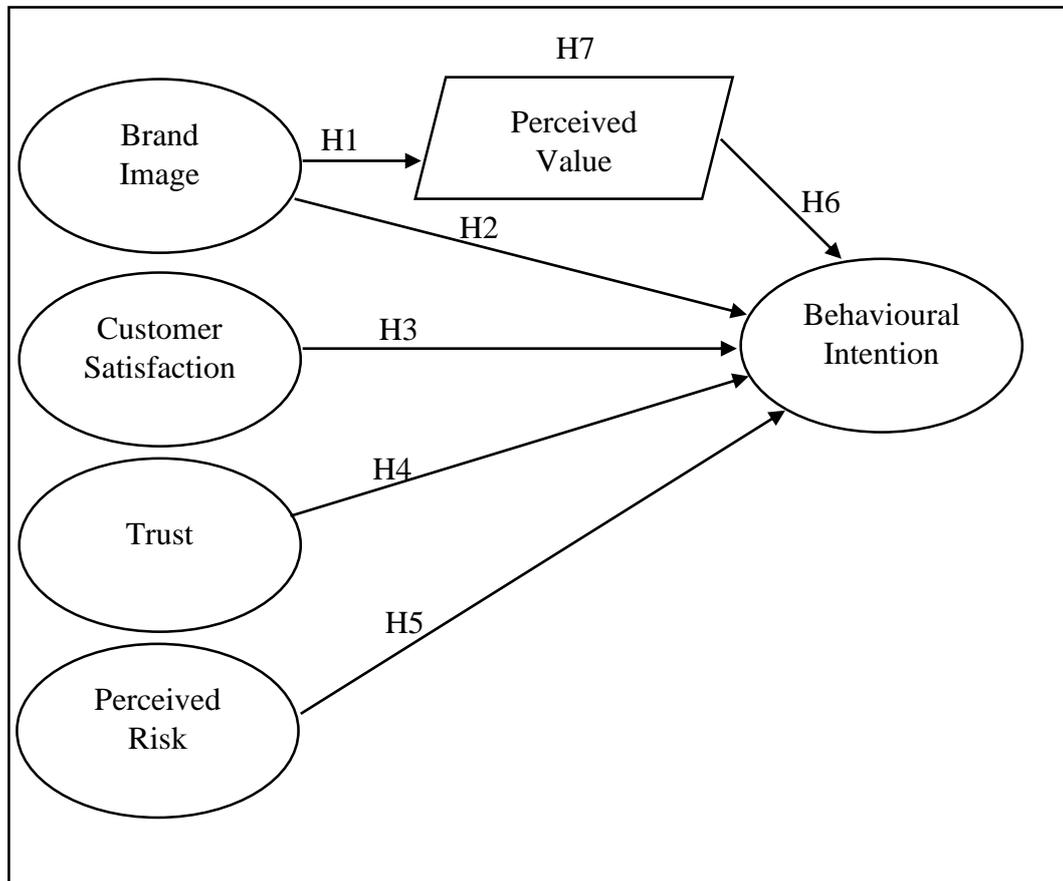
Source: Tonder, Petzer, and Zyl (2017).

The model proposed by Tonder et al. (2017), illustrated the interrelationships between the relationship of quality factors (customer satisfaction, trust and commitment) with consumer behavioural intention. The model was adapted from relationship marketing theory which explained that consumer will be satisfied with an organization when they received expected benefits through the exchanges occur as well as the benefit received will aid in fostering trust between organization and consumers. In this study, it clearly is shown that customer satisfaction and trust are positive predictors for behavioural intention. In addition, the study reinforces past researches claiming that pleasant emotion generated by customers are willing to portrait favourable behavioural intention.

Surprisingly, the result of this study shown trust has an indirect relationship with behavioural intention. The possible explanation by Tonder et al. (2017) is only in the certain market that trust viewed as essential criteria to affect consumer behavioural intention. However, the proposed conceptual framework will be designed partially according to this model in order to retest the significance of the relationship between customer satisfaction, trust and consumers' behaviour intention.

## 2.3 Proposed Conceptual Framework

Figure 2.4: Proposed Conceptual Framework



Source: Developed for the research

## 2.4 Hypotheses Development

### 2.4.1 Relationship between Brand Image and Perceived Value

Brand image stated by the researcher to have a positive influence on customers' perceived value which leads to their purchase intention based on a study of restaurant's consumers (Ryu et al., 2008). Ryu et al. (2008) also added that image is interrelated to perceived value because the study actually proved that it strengthen positive consumers' behavioural intention. The relationship further explained by Haba et al. (2017) in their research on a smartphone that proven brand image have a significant positive relationship with perceived value. To further explain, the attributes of brand image causes consumers to identify the value of the particular brand.

However, there is research taken place in Tehran showed there are oppose result where researchers argued that brand image have a negative impact on perceived value. The statistical test done showed lack of significant support on the relationship between brand image and perceived value (Soltani et al., 2016).

Therefore, this research proposes that:

**H1: There is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.**

## **2.4.2 Relationship between Brand Image and Behavioural Intention**

Brand image according to the previous study shown it has successfully influence customers' intention to purchase which directly impact in firm's profit (Aaker, 1996; Rory, 2000; Gensch, 1978). Aghekyan-Simonian et al. (2012) added in their research on consumers' behavioural intention towards apparel, proven that brand image will impact consumers' intention to purchase by acting as a replacement for clothing attributes.

The relationship of brand image and behavioural intention further explained by the research of nostalgic restaurant, shown that brand image positively influences revisit intention of the restaurant (Chen et al., 2014).

However, Haba et al. (2017) study showed an adverse opinion by arguing that consumer behaviour intention is indirectly affected by the brand image but directly affected by perceived usefulness and value of a smartphone. Consumers will only consider the brand through the perceived value created by brand image. Through that research finding, brand image said to have an indirect impact towards consumers' behavioural intention.

Therefore, this research proposes that:

**H2: There is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.**

### **2.4.3 Relationship between Customer Satisfaction and Behavioural Intention**

Customer satisfaction has an influence on behavioural intention such as repurchase intention and spreading positive WOM. According to Han and Ryu (2009), customer satisfaction has a positive and significant relationship towards behavioural intention. A satisfied customer will spread a positive WOM, revisit intention and increase willingness to pay based on a study regarding the restaurant's service in Hong Kong (Heung & Gu, 2012).

The finding in lodging industry further explained that customer satisfaction act as an important element in building behavioural intention such as repurchase intention (Getty & Thompson, 1994). Based on this understanding, customer satisfaction can be examined on the effect towards consumers' behavioural intention relate to vitamin consumption due to its positive relation shown by past studies.

However, some study (Kivela, Inbakaran, & Reece, 1999; Chow et al., 2007; Looy, Bart, Gemmel, Desmet, Dierdonck, & Serneels, 1998) showed the adverse result on the relationship between customer satisfaction and behavioural intention. The study further justified that satisfied customer has low likelihood they will engage in any action towards the product (Kivela et al., 1999). Moreover, Chow et al. (2007) explained in their study that customer satisfaction in the restaurant has an insignificant impact on their behavioural intention to revisit the restaurant.

These findings are consistent with Looy et al. (1998) stated that the relationship between satisfaction and behavioural intention are not necessarily aligned. Thus, customer satisfaction also indicating a negative relationship with behavioural intention.

Therefore, this research proposes that:

**H3: There is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.**

#### **2.4.4 Relationship between Trust and Behavioural Intention**

Trust has proven positively related to behavioural intention when products are competently in solving consumers' problems. Also, the consumers will tend to commit to the same type of product again when trust is established between product's brands with consumers (Hsu et al., 2010) as cited by (Hikmawati, Sucherly, & Sumawihardja, 2015). High degree of trust creates higher intention to engage in action among satisfied customers which means products offered will be continuously used (Singh & Sirdeshmukh, 2014).

Additionally, through a sense of community, WOM can be created and at the same time strengthen the emotion factor of trust (Hsu et al., 2010). Trust of consumers towards a product will arise when the customers are confident and willing to participate in the process. Therefore, trust is believed to positively influence behavioural intention.

However, trust has affirmed by some researchers that it does not always a mirror-image (Brower, Schoorman, & Tan, 2000). So, market like luxury product segment, behavioural intention is negatively dependent on trust because consumers are persuaded that they can rely on the provider. Rather, consumers' perceived of reliable product offering required to be handled effectively in a manner to convince customers that the worthiness of effort to maintain committed to the provider (Tonder et al., 2017). According to this understanding, trust seems to exhibit significantly negative relationship on behavioural intention.

Therefore, this research proposes that:

**H4: There is a relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention.**

### **2.4.5 Relationship between Perceived Risk and Behavioural Intention**

Risk resulted anxiety actually leads to strong behaviour desire to minimize risk by replacing the high willingness of consumers to maximize utility (Bauer, Barnes, Reichardt, & Neumann, 2005). Based on the study by Bauer et al. (2005), if the uncertainty can be reduced, it will have a significant influence on consumers' intention to utilise a service or product.

According to few researchers study on an online transaction, mobile banking and mobile payment, the study concluded that perceived risk has a significant negative relationship on behavioural intention (Thakur & Srivastava, 2014; Shen, 2013; Kim & Lennon, 2013).

No matter service provider or product manufacturer, it is important to address the concerning risk for ensuring the products or services are safe, workable and quality (Chen, 2013). Based on the studies, reducing perceived risk make the consumer feel comfortable and confident which directly improve their intention to use and purchase. Thus, perceived risk has a negative relationship with behavioural intention as proven in the study.

People living in an environment that practice convenience as the norm will eventually build the character of an individual to accept a different degree of risk in life (Cameron et al., 2012). There is a study that indicated although

there is a high degree of financial risk exist, consumers may still engage in purchasing and using behaviour (Aghekyan-Simonian et al.).

Moreover, consumers viewed there is some degree of risk associated with online shopping, the existence of benefits provided and convenience to shop eventually offset those perceived risk. Thus, this indicated that perceived risk may also positively or has no effect on the relationship with behavioural intention.

Therefore, this research proposes that:

**H5: There is a relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention.**

#### **2.4.6 Relationship between Perceived Value and Behavioural Intention**

Researchers have indicated that perceived value has an impact on behavioural intention. In the study by Liu et al. (2015), the result proved that perceived value is behavioural intention most significant predictor because it actually influences consumers' adoption intention to a product.

According to Wang and Yu (2016), improving product functional, packaging and branding together with content sensory attributes able to enhance consumers' perceived value. The study also proved that company that focuses on developing appropriate appeals on their products can generate perception value in consumers which also able to positively affect consumers' intention to repurchase (Wang & Yu , 2016).

Moreover, a study was done by Widianti et al. (2015), confirmed that increase consumer perceived value positively affect consumer behaviour intention to repurchase as well as spreading positive WOM on product and services. Thus, the perceived value can be viewed as a positive predictor of behavioural intention.

However, perceived value components, utilitarian value and social value in a study by Yu et al. (2013) showed insignificant relation on behavioural intention. The likelihood of the findings are consumer may satisfy with the offering's usefulness but it actually insufficient to develop continuous or future behavioural intention. Hence, the study proved that enhancing perceived value will not affect behavioural intention.

Therefore, this research proposes that:

**H6: There is a relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention.**

#### **2.4.7 Mediating Role of Perceived Value on the Relationship between Brand Image and Behavioural Intention**

Brand image has reported generating positive influences on consumers' perceived value and consumer willingness to purchase (Ryu et al., 2008). In the study by Haba et al. (2017), favourable brand image able to drive the sales of popular smartphone brands due to increase purchase by consumers in market intervened from consumers' acknowledgement on the smartphone innovation (perceived value).

Brand image that is being added value and vice-versa may reflect consumer way to think, feel and act on a particular product. This result is supported

by a study done by Lien et al. (2015), showing that online hotel booking rate increase when brand reputation improved reflecting from the perception of hotel brand are attractive and valuable.

However, there are also study result showed perceived value does not mediates the relationship between brand image and behavioural intention (Soltani et al., 2016).

Therefore, this research proposes that:

**H7: Vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.**

## **2.5 Conclusion**

This chapter presents a thorough overview of the past literature related to independent variables (brand image, customer satisfaction, trust and perceived risk) and the dependent variable (consumers' purchase behavioural intention). In addition, the overview also consists of the past studies on mediation effect of perceived value towards the relationship between brand image and purchase behavioural intention. Moreover, a conceptual framework was developed to examine the interrelationship between those variables that discussed. Along with the developed framework, hypotheses of the study was established to solve the problem stated and achieve the objective of these study. Following chapter will discuss the research methodology applied in the study.

## **CHAPTER 3: METHODOLOGY**

### **3.0 Introduction**

This chapter describes manner on how data is collected and analysed in a systematic way. It provides detailed explanations of research methodology which includes research design, data collection approach, sampling design, research instrument, constructs measurement, data processing and data analysis. The purpose of this chapter is to provide a clear understanding of an appropriate method that will be implemented while conducting this research.

### **3.1 Research Design**

Research design provides necessary technique and procedures to collect and analyse required information (Zikmund, Babin, Carr, & Griffin, 2013). According to that, this research had adopted quantitative research and descriptive research.

#### **3.1.1 Quantitative Research**

Quantitative research is the explanation of phenomena from the collection of numerical data which analysed by mathematical based methods (i.e. statistic) (Aliaga & Gunderson, 2000) as cited by (Almalki, 2016). This research method assists in subdividing the reality into smaller and manageable scope with the intention to further understand the entire reality (Almalki, 2016). Moreover, quantitative research was used in conducting this research to measure the independent variables (brand image, customer

satisfaction, trust and perceived risk) which influencing young adults' purchase behavioural intention in a vitamin supplement. In addition, it also investigates the impact of the mediator (perceived value) in the relationship between brand image and young adults' purchase behavioural intention on a vitamin supplement. In fact, quantitative research used in this study with the purpose to draw from the observation of subdivision to test the formulated hypotheses with regard to the relationship among research's variables (Almalki, 2016). Furthermore, the numerical results of quantitative research provide a clearer view and understanding on identifying the variables with most significant impact on purchase behavioural intention. Hence, quantitative research was applied in this study.

### **3.1.2 Descriptive Research**

Among causal, descriptive and exploratory research, descriptive research had been used in this research. Descriptive analysis was used for describing a population with respect to important variables (Zikmund et al., 2013). Descriptive information is needed to answer question arises from the current status of study as well as used to describe some groups of people or association.

Furthermore, cross-sectional study of descriptive analysis was employed in this research. A cross-sectional study is a descriptive study that included a sample of elements from varieties of segments of the population with similar characteristics but different interest (Kendra, 2013). Cross-sectional are practical as it does not require to interview or observe all Malaysians' behaviour intention within this tight budget and timeline. In short, questionnaires distributed through online and personally will be able to provide prior knowledge about factors influence consumers' purchase behaviour intention in a vitamin supplement.

## **3.2 Data Collection Methods**

Data collection methods section explain the process of preparing and collection of data. This section illustrates the importance of gathering information from various sources that are essential and relevant to the research topic. In this research, both primary and secondary data are gathered to solve the research questions as well as hypotheses formulated in the study.

### **3.2.1 Primary Data**

Primary data are the first-hand sources that collected by researchers especially when doing quantitative research (Lee, Lee, & Lee, 2013). This research adopted survey questionnaire as a research instrument due to its simplicity and reliability. The survey questionnaire aids the finding specific information about the factors (brand image together with intervention from perceived value, customer satisfaction, trust and perceived risk) that influencing consumers' purchase behavioural intention in a vitamin supplement.

The questionnaire will be distributed through the internet (Google Form) and face-to-face survey. The survey through the internet is cheaper in terms of administration (Bhattacharjee, 2012) while face-to-face survey able to provide a significant advantage in terms of quality, and complexity of data collected (Beukenhorst & Kerssemakers, 2012). Those information of responses will be kept private and confidential as mentioned in the survey questionnaire. Thus, internet survey and the face-to-face survey will be adopted when collecting research primary data.

### **3.2.2 Secondary Data**

According to Lee et al. (2013), secondary data is data that gathered for other reason such as enhance the research reliability instead to tackle the specific purpose of the study. In this research, secondary data were obtained from sources such as government sources, annual reports, and review of previous journal literature.

Government sources such as the National Survey on the Use of Vitamin Supplements (NSUM) by Malaysia consumers that published by Ministry of Health Malaysia were used. This source assists in the finding of Malaysia's supplement industry trend throughout many years as well as Malaysian consumers' attitude on vitamin supplements respectively.

Apart from that, the graph relating to the worldwide market for vitamin supplements and global dietary supplements market revenue is adopted from Transparency Market Research and Grand View Research respectively to further explain on the growth of global supplements industry. In addition, this research also reviewed past journal literature to investigate the relationship between the independent variables on dependent variable as well as the intervention by mediating variable.

### **3.3 Sampling Design**

Sampling involves applying a small number of items to make a conclusion about whole population (Zikmund et al., 2013). The reason of it is to avoid wasting too much time and money on a study the entire population (Saunders, Lewis, & Thornhill, 2012). This section consists of five-steps which are defining target population, determining sampling frame and sampling location, deciding appropriate sampling element, selecting appropriate sampling technique and sampling size.

#### **3.3.1 Target Population**

The target population of this research consisted of all gender young adults with age between 18 years old until 40 years old. The age group selected are according to the verification of young adults' age group by Veal et al. (2010). This group of the population included public as well as undergraduates and lecturers who are currently positioned at higher education institution such as public universities, private universities and university colleges. Young adults are selected to research respondents due to reasons such as they have a higher concern on personal health and willingness to spend more for the healthier product as well as products that promote a healthier lifestyle (Watson, 2015).

### **3.3.2 Sampling Frame and Sampling Location**

There is no sampling frame in this research because there is no access to the entire consumer's market details. The limited resources hinder this research to adopt any sampling frame.

While for sampling location, the survey will mainly conduct in Kuala Lumpur (KL) and Klang Valley areas. According to Peng (2012), Klang Valley and Kuala Lumpur are both places in Malaysia that are the popular destination for internal migration. The population of these territories contained a higher proportion of migrant than other states as it proved that residents born outside these two states were as high as 50-percent. Both these two locations recorded to have migrants from all states in Malaysia (Peng, 2012).

Although the research is conducted in the Malaysian context, with sufficient high number of residents from other states in Kuala Lumpur and Klang Valley, therefore, a total of 250-questionnaires will distribute to public and higher education institution young adults age between 18-years old to 40-years old that located around the sampling location.

### **3.3.3 Sampling Elements**

The respondents of survey for this research will be the undergraduates, post-graduates and lecturers with age between 18 years old until 40 years old that have vitamin supplements consumption experience. The sampling elements include gender, age, ethnicity and monthly allowance were also chosen due to the fact that it might influence consumption experience that resulted in their behavioural intention towards vitamin supplement consumption.

### **3.3.4 Sampling Technique**

This research used a non-probability sampling as there is no sampling frame in this research. According to Zikmund et al. (2013), non-probability sampling is the units of the sample where it was being taken into research based on personal judgement or convenience. Based on that, under non-probability sampling, convenience sampling was adopted for this research. Convenience sampling is the method of acquiring data from people who were most conveniently accessible (Zikmund et al., 2013). Through adopting this method, respondents can be taken from anywhere of the target population based on convenience that eventually leads to research conducted in quick and economical manner.

### **3.3.5 Sampling Size**

In this research, a total of 250-questionnaires were distributed to complete the survey and sample of 220-questionnaires were collected. However, 20-questionnaires were found void due to the respondents does not answer according to the requirement. Therefore, only 200-questionnaires were found valid for the research. These respondents are the consumers that have vitamin supplements consumption experiences collected from public and various universities.

The setting of sample size in this research are supported by Roscoe (1975) as cited in Halim and Ishak (2014), as he stated that the range of sample size within 30 to 500 is most appropriate and accurate for the majority of research as to avoid Type II error. Moreover, the sample size range between 30 to 500 are also supported by Sekaran (2000) as cited in Halim and Ishak (2014), by indicating sample size too small (less than 30) or too large (more

than 500) will result in a weak relationship. In addition, with the small sample size of 250 can reduce time and cost used for data collection.

### **3.4 Research Instrument**

The research instrument used in this research is a self-administered questionnaire. According to Lavrakas (2008) as cited in Reis and Judd (2014) self-administered questionnaire is a survey to be done by respondent personally without interference by others. This method was used to obtain data more accurately and precisely. In addition, this method was efficient yet, cost-effective way to obtain a large amount of data (Saunders et al., 2012). Respondents were requested to fill up the designed questionnaire either through online or physically distribution based on their personal opinion. After that, those completed questionnaires will be collected and proceed with analyses.

#### **3.4.1 Questionnaire design**

There were three sections designed in the questionnaire (Section A, Section B, Section C) uses communicable English language. It consists a total of seven pages where one cover page highlighting the purpose of the study, respondent's general information (Section A), construct measurement (Section B) and respondent's demographic profile (Section C).

In Section A, five general questions were prepared. The general questions include "Q1 Which of the following Vitamins' brands that are familiar to you?", "Q2 Based on your answer in Q1, which brand do you consume the most?", "Q3 How often do you consume vitamin?", "Q4 On average, how

much do you spend on purchasing vitamin per month?”, “Q5 What is the main source you use to obtain vitamins’ information?”. In this section, multiple choice questions were set and respondents only can choose one answer for each question except for Q1.

Moreover, in section B, there is a construct measurement of six variables included brand image, customer satisfaction, trust, perceived risk, perceived value, and behavioural intention. In addition, the questions in this section are designed in the five-point Likert Scale to measure respondents’ degree of agreement.

In Section C, six demographic questions were prepared including questions regarding respondents’ gender, age, ethnicity, education level, monthly income and originate state. In this section, multiple choice questions were set and respondents can choose only one answer for each question.

### **3.4.2 Pilot Test**

The pilot test is a scaled-down version of the total survey for the purpose of pre-testing the strength of survey instrument (Saunders et al., 2012). Saunders et al. (2012) added that the reason for having the pilot test is to revise the questionnaire and ensure the respondents will not have problems or difficulties in answering those questions. Moreover, Cronbach’s Alpha was chosen to investigate the reliability and validity of those questions in the questionnaire. Figure 3.1 shows strength associated with the Cronbach’s Alpha coefficient range.

**Figure 3.1: Rules of Thumb about Cronbach's Alpha Coefficient Size**

<b>Alpha Coefficient Range</b>	<b>Strength of Association</b>
Less than 0.6	Poor
0.6 to 0.7	Moderate
0.7 to 0.8	Good
0.8 to 0.9	Very good
0.9	Excellent
More than 0.95	Items should be inspected to ensure they measure different aspects of the concept.

Source: Hair, Babin, Money, and Samouel (2003)

According to Sudman (1983) as cited in Chaudhary and Israel (2014), a pre-test range between 20-respondents to 50-respondents is an appropriate number as the concern arise when more than 50-respondents take part in the pilot test resulting the cost (financial and time) outraged the benefits. Hence, a total of 40-respondents' submitted questionnaires was taken for the pilot test. The reliability test was run using Statistical Project of Social Science (SPSS) version 23. All of the variables in this study is reliable as all of them have a Cronbach's Alpha value more than 0.6. The result of the pilot test was shown in Table 3.1 below.

**Table 3.1: Reliability Statistic of the Measurement Constructs**

<b>Measurement Construct</b>	<b>Cronbach's Alpha</b>	<b>No. of Items</b>
Brand Image	0.825	4
Customer Satisfaction	0.929	4
Trust	0.874	4
Perceived Value	0.732	4
Perceived Risk	0.828	4
Behavioural Intention	0.855	4

Source: Developed for the research

## **3.5 Construct Measurement**

In this section, it explained the types of measurement scales that are being applied in this research. The measurement scales are differentiated on the relationship existed between variables that have different scale values. The types of measurement scales that are being applied in this research are nominal, ordinal and interval scale.

### **3.5.1 Origin of Constructs**

The relationship between dependent variable and independent variables are determined by the original sources of constructs which applied in the questionnaire. The sources of the construct measurement used in this research are adopted from various journals where the details of the sources for each variable are listed as in Table 3.2.

**Table 3.2: Origins of Construct**

<b>Constructs/ Variables</b>	<b>Item</b>	<b>References</b>
Brand Image	<ul style="list-style-type: none"> <li>• Good reputation.</li> <li>• Better image.</li> <li>• Perform as I expected.</li> <li>• Perform better than other brand.</li> </ul>	<ul style="list-style-type: none"> <li>• Lien et al. (2015)</li> <li>• Sumaedi et al. (2014)</li> <li>• Lau et al. (1999)</li> </ul>
Customer Satisfaction	<ul style="list-style-type: none"> <li>• Delighted with effect.</li> <li>• Did the right thing when I decided to use.</li> <li>• Feel good using.</li> <li>• Been a good experience.</li> </ul>	<ul style="list-style-type: none"> <li>• Tonder et al. (2017)</li> <li>• Park, Lee, Kwon, and Pobil (2015)</li> </ul>
Trust	<ul style="list-style-type: none"> <li>• Trustable.</li> <li>• Feel secure.</li> <li>• Trust completely without being prescribed by professional.</li> <li>• Trust it above certain standard.</li> </ul>	<ul style="list-style-type: none"> <li>• Lau et al. (1999)</li> <li>• Hsu et al. (2010)</li> </ul>
Perceived Risk	<ul style="list-style-type: none"> <li>• Easy to judge quality.</li> <li>• Confident that is as good as it advertised.</li> <li>• Confident that are able to reach my expectation.</li> <li>• Risk of consuming is relatively low.</li> </ul>	<ul style="list-style-type: none"> <li>• Kim et al. (2013)</li> <li>• Liu et al. (2013)</li> <li>• Cheng et al. (2012)</li> </ul>
Perceived Value	<ul style="list-style-type: none"> <li>• As compare with time and money given, believed is valuable.</li> <li>• At price paid, is acceptable.</li> <li>• As compare to the effort put in, believe the use is beneficial.</li> <li>• Make a good impression on other people.</li> </ul>	<ul style="list-style-type: none"> <li>• Sumaedi et al. (2014)</li> <li>• Liu et al. (2015)</li> <li>• Yu et al. (2013)</li> </ul>
Behavioural Intention	<ul style="list-style-type: none"> <li>• Willingness to purchase is high.</li> <li>• Highly recommend others to use.</li> <li>• Willing to pay more than competitor brand.</li> <li>• Encourage other people to use if they do face same problem.</li> </ul>	<ul style="list-style-type: none"> <li>• Lien et al. (2015)</li> <li>• Tonder et al. (2013)</li> <li>• Yu et al. (2013)</li> <li>• Park et al. (2015)</li> <li>• Li et al. (2013)</li> </ul>

Source: Developed for the research

### 3.5.2 Scale Measurement

The self-administered questionnaire is designed in this research to gather empirical and reliable data from the research respondents. The design of questionnaire is based on various past journals. The questionnaire consists

of three sections which are Section A (General Information), Section B (Constructs Measurement) and Section C (Demographic Profile). Moreover, the types of measurement scales applied are nominal scale, ordinal scale and interval scale.

Nominal measurement scale merely applied when variables can be classified into categories (Zikmund et al., 2013). The nominal measurement scale is applied in both Section A and Section C. The example of variables in Section A examined by this scale are the type of vitamin supplements consumed and frequency of consuming vitamin. While in Section C, the examples that are being measured by this scale are gender and ethnicity.

Moreover, ordinal measurement scales used to not only categorizes the variables in a manner that denoting differences among various categories but also rank the orders of categories in a more significant way (Zikmund, et al., 2013). The ordinal measurement scale is also applied in both Section A and Section C. The example of variables in Section A examined by this scale is average spending of the consumer on purchasing vitamin per month. While in Section C, the examples that are being measured by this scale are income level.

Interval scale is another scale applied in the research questionnaire. It is a measurement scale that consists both nominal and ordinal properties, but with an additional strength of demonstrating information about differences in quantities of concept (Zikmund et al., 2013). Likert scale that applied in this research can be associated with interval measurement scale (Harrell & Bradley, 2009). In Section B, five-point Likert Scales are used where all independent variables, mediator and dependent variable are examined by using a symmetric agree-disagree scale to measure the degree of agreements.

## **3.6 Data Processing**

The main purpose of data processing is to transform the obtained raw data into a computer-readable format that would ease on the generation of useful information for the research (Hair, Bush, & Ortinau, 2002) as cited in (Tutar, Nart, & Bingol, 2015). The obtained raw data have to be consistent and precise in order to draw a reliable conclusion (Kalla, 2009). Data processing consists five-steps which begin with questionnaire checking, editing, coding, transcribing, data cleaning (Malhotra, 2010).

### **3.6.1 Questionnaire Checking**

Firstly, the questionnaire will distribute to the first 40-respondents. Later on, the 40-questionnaires will be collected and tested using pilot testing for ensuring the questions are appropriate, reliable and have quality. Amendment will be carried out if there are mistakes or misunderstanding of the question existed. Thus, through pilot testing, errors can be immediately discovered and corrected to ensure the quality of research able to maintain.

### **3.6.2 Editing**

According to Zikmund et al. (2013), editing is essential to ensure error detected in the questionnaire are omitted in order for the questionnaire to become more precise and accurate. The editing process revises problems such as interviewer errors. Moreover, the edited raw data will ensure the data collected able to create value for the research.

### **3.6.3 Coding**

Coding involves the process of interpreting, categorizing, recording and transferring data into data storage media (Zikmund et al., 2013). This coding process is basically conducted either through a computer or hand tabulation. This process needed because the data analysis software, SPSS version 23 requires numerical data as input to assist the analyzing of information. Therefore, each response will differentiate according to different numbers.

### **3.6.4 Transcribing**

Transcribing merely refers to transferring the data that have been coded in questionnaire into the computer (Malhotra, 2010). Once the data has been collected, the data will then be transcribed to SPSS version 23 for running data analyses accordingly.

### **3.6.5 Data Cleaning**

It is the process where data and input accuracy are being verified from questionnaire to SPSS software. This process is essential and requires to be considered carefully as it will affect overall statistical results (Malhotra, 2010). The process involves consistent checking and detecting of any absence responses which are managed by using SPSS version 23. By using the software, any unreliable data such as logically inconsistent or have extreme values can be detected in order to ensure the consistency of data collected maintain.

## **3.7 Data Analysis**

Data analysis is part of a research application for reasoning on the understanding of the data that have been collected. The process, in other words, means to assist in generating valuable information for decision making through evaluation and interpretation of data. The 200 copies of valid questionnaires in this study will be taken for analyses.

### **3.7.1 Descriptive Analysis**

Descriptive analysis merely referring on transforming information of raw data into a form that is easier to understand and interpret. It supported by Hair et al. (2002) as cited in Tutar et al. (2015), by indicating that this analysis helps to simplify huge amount of data in simpler summary or converting raw data into the compound structure for easier interpretation.

#### **3.7.1.1 Frequency Distribution**

Frequency distribution purpose is to summarize the number of times that a particular value of variable occurs in the study of organizing a set of data (Zikmund et al., 2013). It is to display a number of responses associated with each value of a variable. Moreover, the level of measurement only involve nominal and ordinal (Saunders et al., 2012).

According to this research, the frequencies are obtained from nominal variables and ordinal variables as suggested by Saunder et

al. (2012). Nominal variables include vitamins' brands that are familiar to the consumer, vitamin supplements brand that consumed the most, the frequency of consuming vitamin, gender, ethnicity, education level and more. While ordinal variables consist of average spending of vitamin supplements, age and monthly income. The data of those variables later will exhibit using pie charts, bar charts and histogram that contain both frequency and percentage figures.

### **3.7.1.2 Descriptive Statistic**

Descriptive statistic summarizes and demonstrates the data in a more meaningful manner by using numerical measurement, tables and graphs (Zikmund et al., 2013). According to Saunders et al. (2012), mean measure the data in a more accurate manner than median due to median only measure by considering two data and the average score of it. Moreover, standard deviation is used as it represents the amount of spread of the mean score. Thus, as suggested, the mean and standard deviation are a more applicable descriptive statistic for interpretation data. The descriptive statistic will apply to measure on independent variables, mediator and dependent variable.

### **3.7.2 Scale Measurement**

The purpose of this measurement is to ensure the data used in the research are valid and reliable. The example of scale measurement applied in the research is reliability test.

### **3.7.2.1 Reliability Test**

Reliability is the extent to which a measure is error-free and able to generate a consistent result (Zikmund et al., 2013). It is essential to discover mistakes at the initial stage and ensure the research able to achieve specified reliability requirements. Moreover, the test is also to ensure every item in each variable in the questionnaire are both reliable and highly related.

According to Saunders et al. (2012), reliability test can measure the internal consistency. It is concerning on the homogeneity of the measure. Based on Zikmund et al. (2013), coefficient alpha is used by previous researchers to estimate multiple-item scale's reliability and is also supported by Malhotra (2010), by indicating that internal consistency of multiple item scales is measured through Cronbach's Alpha.

According to Hair et al. (2003), the reliability coefficient varies from 0 to 1. If the value of Cronbach's Alpha is less than 0.6, the internal consistency reliability for the variable is considered poor and vice versa.

### **3.7.3 Inferential Analysis**

In the inferential analysis, the data are analysed from a sample to make a generalization about the population where samples are drawn (Ali & Bhaskar, 2016). The purpose is to test or answer the hypotheses which it also assists in making rational decisions about the reality of observed effects.

### 3.7.3.1 Simple Linear Regression Analysis

Simple linear regression analysis is a statistical measurement that examines the relationship between a single independent variable and a single dependent variable (Hair et al., 2002) as cited in (Tutar et al., 2015). In this research, simple linear regression analysis is used to examine the significant relationship between brand image and perceived value.

The simple linear regression equation is formulated as followed:

$$Y = a + b_1X$$

Where Y = dependent variable

X = independent variable

a = constant value/ Y-intercept

b = unstandardized coefficient

The result generated from simple linear regression analysis will prove the relationship between a single independent variable and the dependent variable is either significant or insignificant. In this research, the confidence level of 95-percent is set. Thus, if the p-value is less than 0.05, the hypothesis will be accepted which merely proven there is a relationship between independent variable and dependent variable.

### 3.7.3.2 Multiple Linear Regression Analysis

Multiple linear regression analysis is a statistical measurement applied to establish a relationship between two or more independent variables on a single dependent variable simultaneously (Saunders et al., 2012). Furthermore, multiple regression can identify which independent variable will have the most influence on the dependent variable.

The multiple regression equation are formulated as followed:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots$$

Where Y = dependent variable

X = independent variables

a = constant value/ Y-intercept

b = unstandardized coefficient

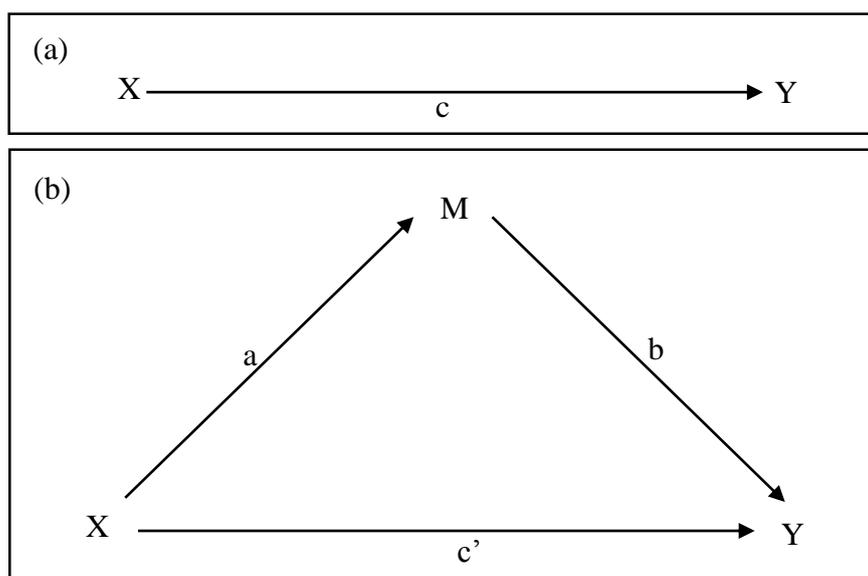
The result of multiple linear regression analysis will decide whether the relationship between independent variables and dependent variable are either significant or insignificant. In this research, the confidence level of 95-percent is set. Thus, if the p-value is less than 0.05, the hypothesis will be accepted which merely proven there is a relationship between independent variable and dependent variable.

### 3.7.3.3 Mediation Test

For testing the mediating effect of perceived value on the relationship between brand image and purchase behavioural intention as stated in H7, causal test approach suggested by Baron and Kenny (1986) is adopted as supported by Wood, Goodman, Beckman, and Cook (2008) in (Memon, Cheah, Ramayah, & Ting, 2018).

According to Memon et al. (2018), Baron and Kenny's causal-steps approach is widely recognized and cited as a good reference to understand the mediation theory. As shown in Figure 3.2 (a), the independent variable (X) has a direct influence on the dependent variable (Y) where Path c indicate the total effect. As shown in Figure 3.2 (b), Path a and Path b between the independent variable (X) and the dependent variable (Y) that is mediated by a mediator (M) indicate as an indirect effect, while Path c' indicate as direct effect.

Figure 3.2: A Three-Variable Nonrecursive Causal Model



Source: Developed for the research.

There are criteria that are required to be fulfilled in order to address the existence of a mediation effect (Baron & Kenny, 1986) as cited by (Zhao, John, & Chen, 2010). The functions of variable as a mediator are recognized when the following conditions are achieved: (1) the independent variables (X) is significantly relating to the dependent variable (Y), (i.e., Path c); (2) the independent variables (X) level of variations are significantly relating to the variations in the presumed mediator, (i.e., Path a); (3) Mediator (M) level of variations are significantly relating to variations in the dependent variable, (i.e. Path b); (4) When Path a and b remained controlled, the level of significance in the relationship between independent variables (X) and dependent variable will indicate the degree of strength demonstrated by the mediator occurring when Path c' is zero.

A study further supported that the mediator showed a partial effect if the regression coefficient shown in the relationship between independent variables and dependent variable are reduced but remain significant when including the mediator variable. On the other side, the mediator will demonstrate full effect if the mediator is included in the relationship between independent variables and a dependent variable that resulted in an insignificant relationship (Cham, Lim, & Aik, 2015). Thus, the causal test is applied due to its simplicity and popularity in testing mediation effect.

### **3.8 Conclusion**

In this particular chapter, the involved research methodologies such as research design, data collection methods, sampling design, research instruments, constructs measurement, data processing and data analysis are being discussed in detailed.

For the following chapter, the collected data will be analysed and interpreted by using SPSS version 23. A detailed analysis and interpretation will be conducted according to the results generated.

## **CHAPTER 4: DATA ANALYSIS**

### **4.0 Introduction**

This chapter presents the results patterns of 200 surveyed respondents followed by the analysis of data from the questionnaires collected by using SPSS version 23. Moreover, this chapter consists details explanation of descriptive analysis of respondents' general information, demographic profile and the construct measurements together with scale measurement as well as inferential analyses used for analysing the data collected. Results of the descriptive analysis will be visually displayed in charts and tables.

### **4.1 Descriptive Analysis**

In this research, 250-sets of questionnaires were distributed to potential respondents through online. However, only 220-sets of questionnaires were successfully collected, while 30-sets of questionnaires remain unknown. Among these 220-sets of questionnaires, there are only 200- respondents who answered accordingly to the requirements, whereby the other 20-sets of questionnaires are considered void due to 12-respondents do not consume vitamin and 8-respondents did not answer according to the questionnaire instructions. Hence, there are only 200-complete sets of questionnaires remained that show usable and valid for this research.

## 4.1.1 Respondent Demographic Profile

In this research, there are six demographic questions were prepared including questions regarding respondents' gender, age, ethnicity, education level, monthly income and originate state. In this section, multiple-choice questions were set and respondents can choose only one answer for each question.

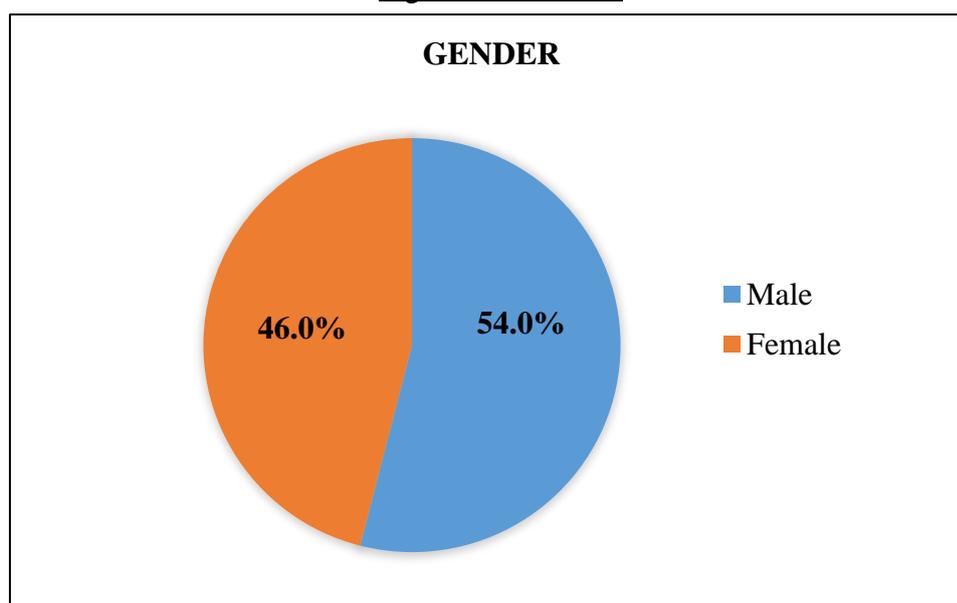
### 4.1.1.1 Gender

Table 4.1: Gender

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Male</b>	108	54	108
	<b>Female</b>	92	46	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.1: Gender



Source: Developed for the research

Based on Table 4.1 and Figure 4.1, the gender distribution in the research is categorised into male and female. The majority are male respondents that consist of 54% or 108-respondents while the minority respondents are female which consists of 46% or 92-respondents.

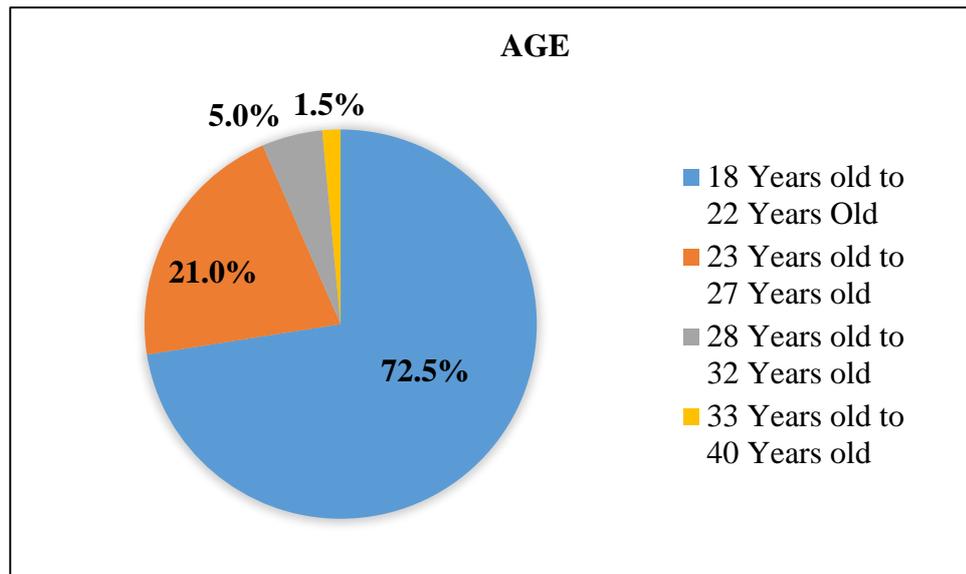
#### 4.1.1.2 Age Group

Table 4.2: Age

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>18 Years old to 22 Years Old</b>	145	72.5	145
	<b>23 Years old to 27 Years old</b>	42	21	187
	<b>28 Years old to 32 Years old</b>	10	5	197
	<b>33 Years old to 40 Years old</b>	3	1.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.2: Age



Source: Developed for the research

Based on Table 4.2 and Figure 4.2, the majority of respondents' age between 18 years old to 22 years old, which consist of 145-respondents or 72.5%. Moreover, 42-respondents or 21% of them aged between 23 years old to 27 years old. Furthermore, 10-respondents or 5% of them aged between 28 years old to 32 years old. Lastly, the least number of respondents participated in this survey are from age group between 33 years old to 40 years old, which consists of only 3-respondents or 1.5%.

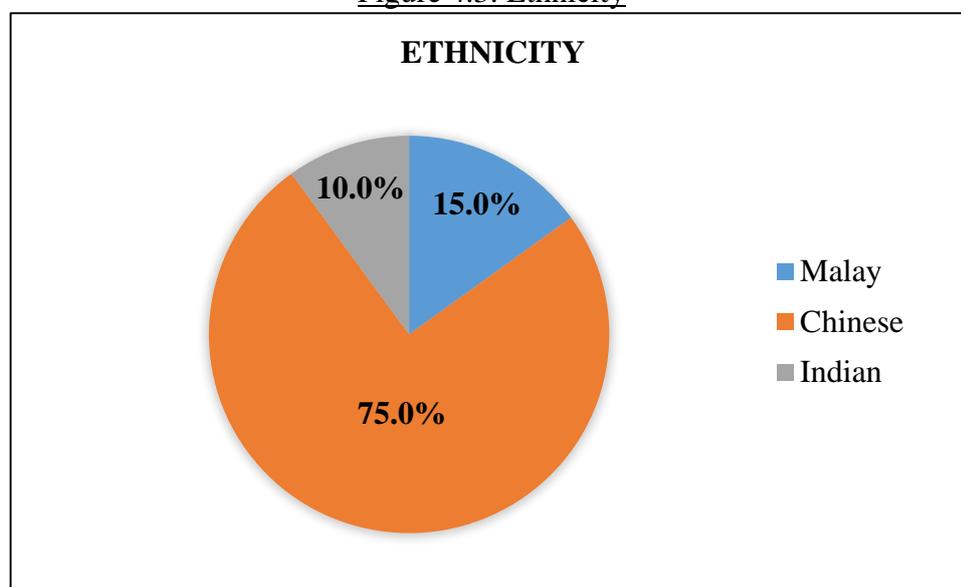
### 4.1.1.3 Ethnicity

Table 4.3: Ethnicity

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Malay</b>	30	15	30
	<b>Chinese</b>	150	75	180
	<b>Indian</b>	20	10	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.3: Ethnicity



Source: Developed for the research

Based on Table 4.3 and Figure 4.3, the majority respondents' ethnicity is Chinese, which consist of 150 respondents, also equivalent to 75%. Moreover, Malay and Indian respondents that participated in this survey consists of 30-respondents or 15% and 20-respondents or 10% respectively.

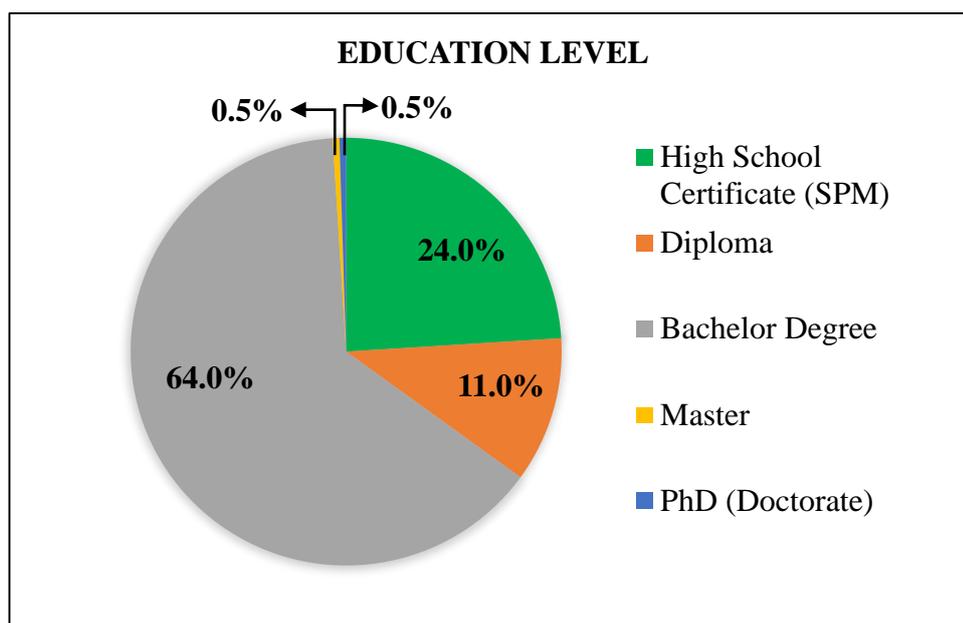
#### 4.1.1.4 Education Level

Table 4.4: Education Level

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>High School Certificate (SPM)</b>	48	24	48
	<b>Diploma</b>	22	11	70
	<b>Bachelor Degree</b>	128	64	198
	<b>Master</b>	1	0.5	199
	<b>PhD (Doctorate)</b>	1	0.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.4: Educational Level



Source: Developed for the research

Based on Table 4.4 and Figure 4.4, the majority respondents participated in the survey are those with Bachelor Degree that consists of 128-respondents or 64%. Moreover, 48-respondents or 24% that participated with only High School Certificate (SPM) as their education level, while 22-respondents or 11% held Diploma as

their education level. Apart from that, the least number of respondents participated are with the education level of Master and PhD (Doctorate), which consists of 1-respondent or 0.5% each.

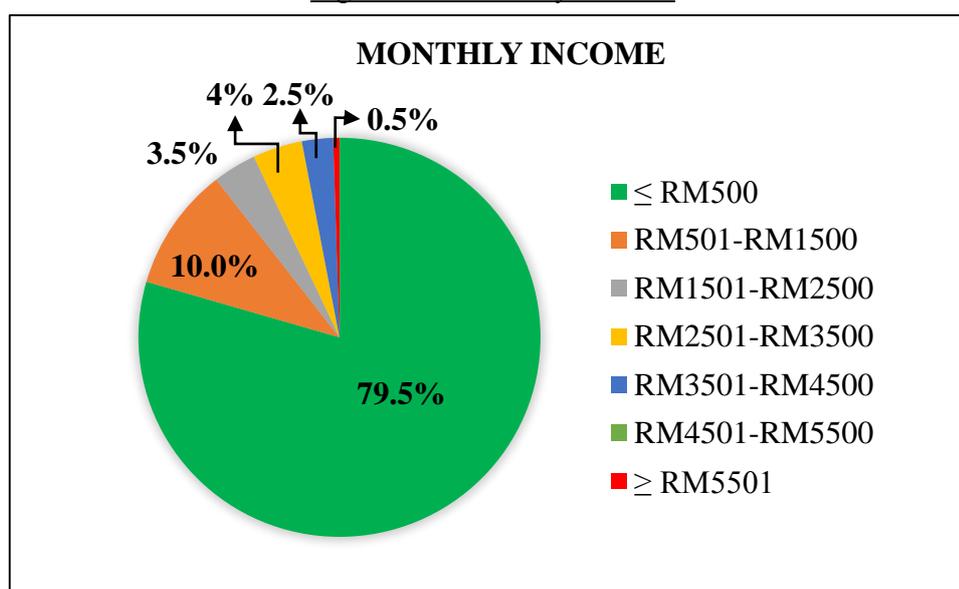
#### 4.1.1.5 Monthly Income

Table 4.5: Monthly Income

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>≤ RM500</b>	159	79.5	159
	<b>RM501-RM1500</b>	20	10	179
	<b>RM1501-RM2500</b>	7	3.5	186
	<b>RM2501-RM3500</b>	8	4	194
	<b>RM3501-RM4500</b>	5	2.5	199
	<b>RM4501-RM5500</b>	0	0	199
	<b>≥ RM5501</b>	1	0.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.5: Monthly Income



Source: Developed for the research

Based on Table 4.5 and Figure 4.5, most of the respondent have a monthly income equal or less than RM500 that consists of 159-respondents or 79.5% followed by monthly income range between RM501 to RM1500, which consist of 20- respondents or 10%. Moreover, monthly income range between RM2501 to RM3500, RM1501 to RM2500 and RM3501 to RM4500 consist of 8-respondents (4%), 7-respondents (3.5%) and 5-respondents (2.5%) respectively. Lastly, the respondent with monthly income equal or more than RM5501 is the income group with least respondent, which consist only 1-respondent or 0.5%.

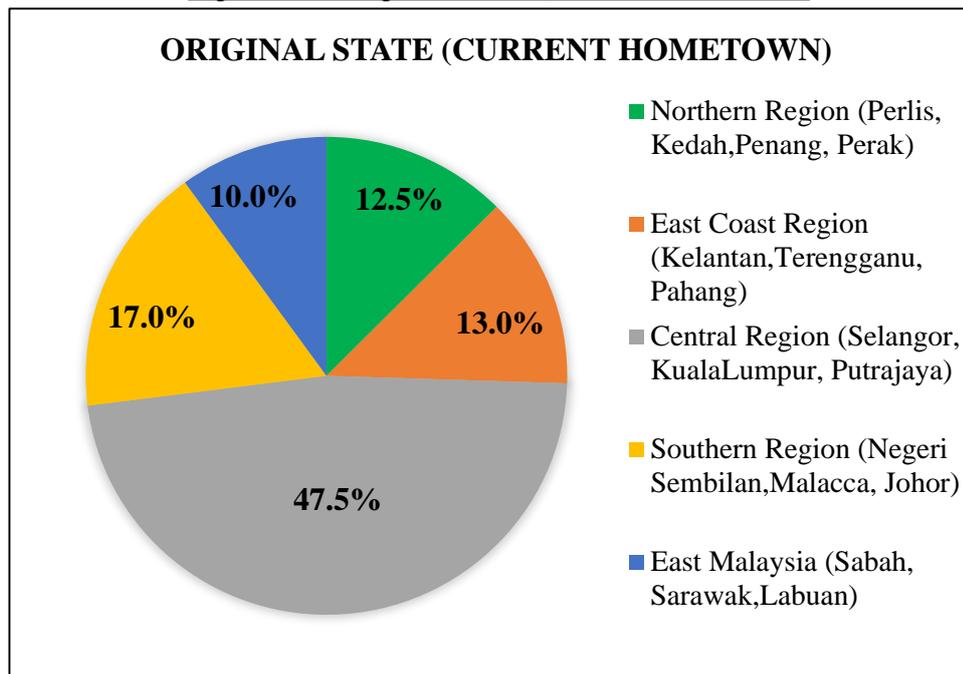
#### 4.1.1.6 Originate State

Table 4.6: Originate State (Current Hometown)

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Northern Region (Perlis, Kedah, Penang, Perak)</b>	25	12.5	25
	<b>East Coast Region (Kelantan, Terengganu, Pahang)</b>	26	13	51
	<b>Central Region (Selangor, Kuala Lumpur, Putrajaya)</b>	95	47.5	146
	<b>Southern Region (Negeri Sembilan, Malacca, Johor)</b>	34	17	180
	<b>East Malaysia (Sabah, Sarawak, Labuan)</b>	20	10	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.6: Originate State (Current Hometown)



Source: Developed for the research

Based on Table 4.6 and Figure 4.6, the majority of respondents participated in this survey originate from Central Region of Malaysia like Selangor, Kuala Lumpur and Putrajaya that consists of 95-respondents or 47.5%. Moreover, respondents originate from the Southern Region of Malaysia such as Negeri Sembilan, Melaka and Johor consist of 34-respondents or 17%. In fact, there is a close number between the three groups of respondents which originate from East Coast Region (Kelantan, Terengganu, Pahang), Northern Region (Perlis, Kedah, Penang, Perak), and East Malaysia (Sabah, Sarawak, Labuan). These three group of respondents consists of 26-respondents or 13%, 25-respondents or 12.5% and 20-respondents or 10% respectively.

## 4.1.2 General Information

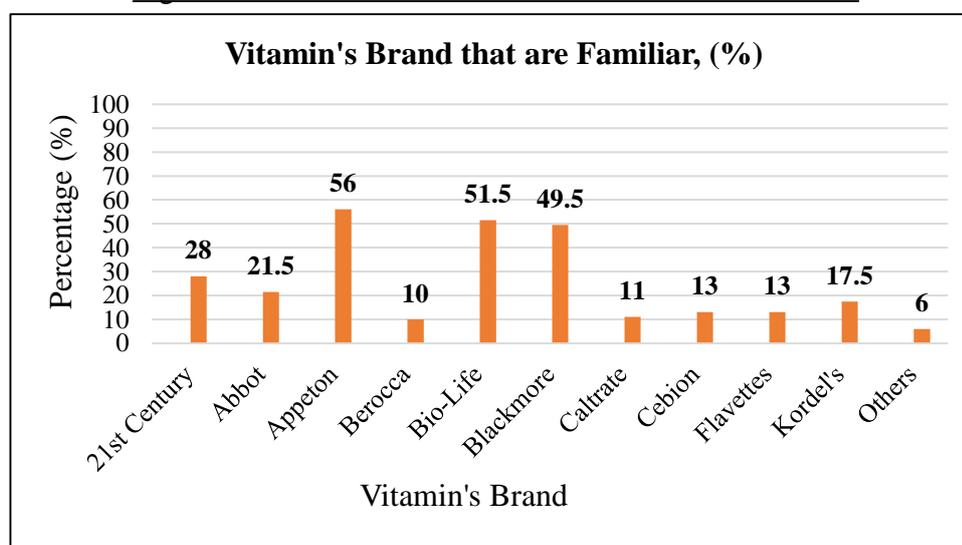
### 4.1.2.1 Vitamin's Brand that are Familiar

Table 4.7: Vitamin's Brand that Consumer are Familiar with

Vitamin's Brand	Frequency	Percentage (%)	Cumulative Frequency
<b>21<sup>st</sup> Century</b>	56	28	56
<b>Abbot</b>	43	21.5	99
<b>Appeton</b>	112	56	211
<b>Berocca</b>	20	10	231
<b>Bio-Life</b>	103	51.5	334
<b>Blackmore</b>	99	49.5	433
<b>Caltrate</b>	22	11	455
<b>Cebion</b>	26	13	481
<b>Flavettes</b>	26	13	507
<b>Kordel's</b>	35	17.5	542
<b>Others</b>	12	6	554

Source: Developed for the research

Figure 4.7: Vitamin's Brand that Consumer are Familiar



Source: Developed for the research

Based on Table 4.7 and Figure 4.7, approximately half of the respondents familiar with Appeton, Bio-life and Blackmore with 56%, 51.5% and 49.5% respectively. Next, 56-respondent or 28% of them familiar with 21<sup>st</sup> Century vitamin brand followed by Abbot with 43 of them familiar with it or 21.5%. Then, Kordel's was familiar with 35-respondents or 17.5% of them. Flavettes, Cebion, Caltrate, and Berocca have a close number of brand familiarity with 13%, 13%, 11% and 10% respectively. Lastly, there are also 12-respondents or 6% of them are familiar with other vitamin's brand that is not stated in the questionnaires.

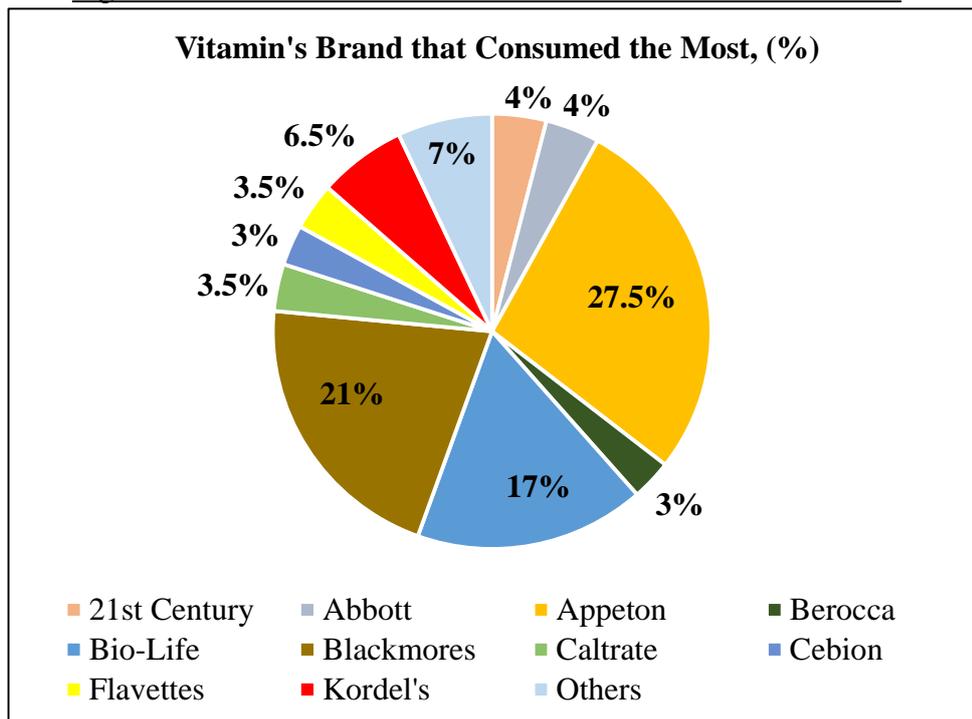
#### 4.1.2.2 Most Consumed Vitamin's Brand

Table 4.8: Vitamin's Brand that Consumer Consumed the Most

Vitamin's Brand	Frequency	Percentage, (%)	Cumulative Frequency
<b>21<sup>st</sup> Century</b>	8	4	8
<b>Abbot</b>	8	4	16
<b>Appeton</b>	55	27.5	71
<b>Berocca</b>	6	3	77
<b>Bio-Life</b>	34	17	111
<b>Blackmore</b>	42	21	153
<b>Caltrate</b>	7	3.5	160
<b>Cebion</b>	6	3	166
<b>Flavettes</b>	7	3.5	173
<b>Kordel's</b>	13	6.5	186
<b>Others</b>	14	7	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.8: Vitamin's Brand that Consumer Consumed the Most



Source: Developed for the research

Based on Table 4.8 and Figure 4.8, the majority of respondents that participated in this survey has consumed the most on Appeton that consists of 55-respondents or 27.5%. The second highest vitamin's brand that consumer consumed are Blackmores that consists of 42-respondents or 21% while Bio-Life holds the third highest consumed brand with 34-respondents or 17%. Furthermore, a consumer that consumed the most for the rest of the brands used in this survey has stood a percentage less than 10% each. Those brands such as Abbott, Kordel's, Flavettes, Berocca, Cebion, and 21<sup>st</sup> Century consists of 8, 13, 7, 6, 6, and 8-respondents or 4%, 6.5%, 3.5%, 3%, 3% and 4% respectively. However, there are also other brands where consumers consumed the most that are not listed in the questionnaire such as Amway, Usana, Nutrilite, Melaleuca, Elken and Atomy. Those other brands that not listed consists of 14-respondents or stand around 7% of the survey result.

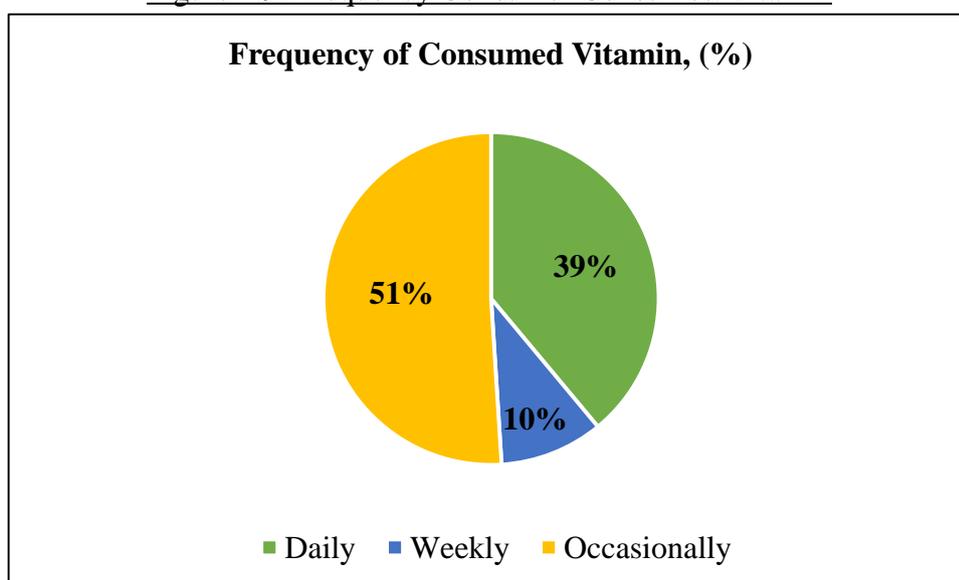
### 4.1.2.3 Frequency of Consuming Vitamin

Table 4.9: Frequency Consumer Consumed Vitamin

	Frequency	Percentage, (%)	Cumulative Frequency
<b>Daily</b>	78	39	78
<b>Weekly</b>	20	10	98
<b>Occasionally</b>	102	51	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.9: Frequency Consumer Consumed Vitamin



Source: Developed for the research

According to Table 4.9 and Figure 4.9, most of the respondents consume vitamin occasionally that consist of 102-respondents or holds 51% of the survey result. Moreover, a consumer that consumes their vitamin daily consists of 78-respondents or 39% of the survey result. Lastly, respondents that consume vitamin weekly seems to be the least with only 20-respondents or 10% of the survey result.

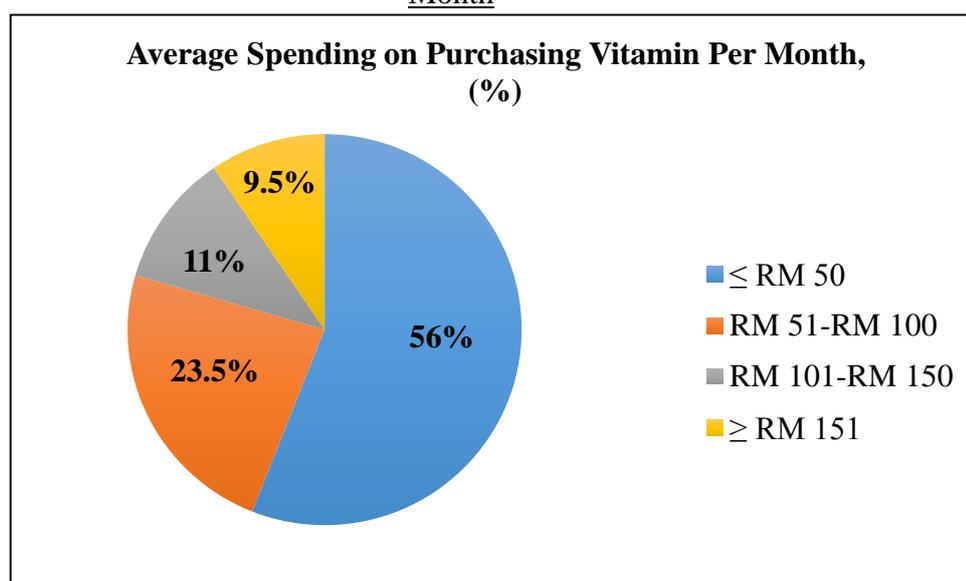
#### 4.1.2.4 Average Spending on Purchasing Vitamin

Table 4.10: Average Spending of Consumer on Purchasing Vitamin per Month

Spending (RM)	Frequency	Percentage, (%)	Cumulative Frequency
≤ RM 50	112	56	112
RM 51- RM 100	47	23.5	159
RM 101- RM 150	22	11	181
≥ RM 151	19	9.5	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.10: Average Spending of Consumer on Purchasing Vitamin per Month



Source: Developed for the research

According to Table 4.10 and Figure 4.10, the majority of respondents average spend less than or equal to RM50 on purchasing their vitamin per month. The statistic shown around 112-respondents or 56% of the entire respondents spends on the stated expenses. Moreover, a consumer that spend on the range between RM51 to RM100 consists of 47-respondents or 23.5% of the entire result. Furthermore, respondents that spend around RM101 to RM150

consists around 22-respondents or 11% of entire results. Lastly, respondents spend more than or equal to RM151 are the least with only 19-respondents or hold only 9.5% of the entire survey result.

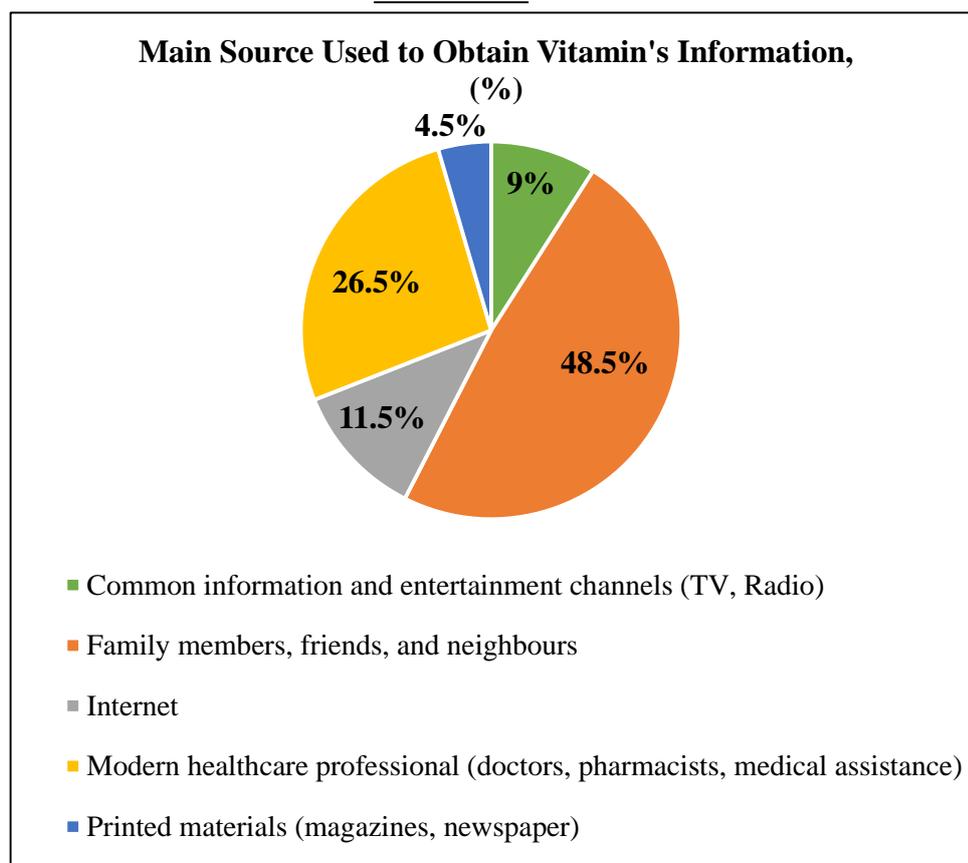
#### 4.1.2.5 Main Source Used to Obtain Vitamin's Information

Table 4.11: Main Source Consumer Used to Obtain Vitamin's Information

Information Sources	Frequency	Percentage, (%)	Cumulative Frequency
<b>Printed Materials (Magazines, Newspaper, etc)</b>	9	4.5	9
<b>Internet</b>	23	11.5	32
<b>Common Information and Entertainment Channels (TV, Radio, etc)</b>	18	9	50
<b>Modern Healthcare Professional (Doctors, Pharmacists, Medical Assistance)</b>	53	26.5	103
<b>Family Members, Friends and Neighbours</b>	97	48.5	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

Source: Developed for the research

Figure 4.11: Main Source Consumer Used to Obtain Vitamin's Information



Source: Developed for the research

Based on Table 4.11 and Figure 4.11, most of the respondents participated in this survey shown that the main sources used by them to obtain vitamin's information are from family members, friends and neighbours. The statistic shown for this group are 97-respondents or stands 48.5% of the entire survey result. Moreover, the second most common sources used are from modern healthcare professional such as doctors, pharmacists and medical assistance that consists around 53-respondents or stands 26.5% of the result.

Furthermore, the internet seems to be the third highest source used to obtain vitamin's information that consists of 23-respondents or 11.5% weightage on the entire result. Apart from that, both common information and entertainment channels such as television

advertisement and radio as well as printed materials such as magazines and newspaper stand a percentage of 9% and 4.5% on the entire survey result or with a number of 18-respondents and 9-respondents respectively.

### 4.1.3 Central Tendencies Measurement of Constructs

#### 4.1.3.1 Purchase Behavioural Intention

Table 4.12: Central Tendencies Measurement of Purchase Behavioural Intention

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 The willingness to purchase the vitamin is high.	2.0	10.0	31.5	48.0	8.5	3.51	0.862	3
Q.2 I will highly recommend others to make use of this vitamin.	1.5	6.0	35.5	45.5	11.5	3.60	0.827	2
Q.3 I am willing to pay more for this vitamin than competitor brand	2.0	12.0	33.0	44.0	9.0	3.46	0.890	4
Q.4 I will encourage other people to use the vitamin if they do face same problem like me.	0	4.5	24.5	57.5	13.5	3.80	0.723	1

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.12 shows the description analysis, including mean score, standard deviation and percentage score of purchase behavioural intention. “I will encourage other people to use the vitamin if they do face same problem like Me.” ranked the first as it has the highest mean score that is 3.80. However, the lowest rank in term of the mean score is “I am willing to pay more for this vitamin than competitor brand” with mean score 3.46.

From the analysis table, there are 48.0% of respondents agree with the statement “The willingness to purchase the vitamin is high”. However, only 2% of them strongly disagree with it. While there are 45.5% respondents agree with the statement “I will highly recommend others to make use of this vitamin” but only 1.5% strongly disagree with it. There are 44.0% of respondent agree with the statement “I am willing to pay more for this vitamin than competitor brand”. Yet, only 2.0% of them strongly disagree with this statement. Lastly, 57.5% of respondents agree with the statement, “I will encourage other people to use the vitamin if they do face same problem like me”. Nevertheless, none of the respondents strongly disagrees with it and only 4.5% of them disagree with it.

### 4.1.3.2 Brand Image

Table 4.13: Central Tendencies Measurement of Brand Image

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 I always believe the preferred vitamin because it has good reputation.	0.5	4.5	15.0	62.5	17.5	3.92	0.739	1
Q.2 I believe that the preferred vitamin has better image than its competitors.	0	1.5	17.0	56.0	15.0	3.86	0.683	2
Q.3 I believe that the preferred vitamin brand is going to perform as I expected.	1.0	1.5	22.5	63.0	12.0	3.84	0.686	3
Q.4 I believe that the preferred vitamin brand performs better than other brands.	0	4.0	30.0	52.5	13.5	3.76	0.733	4

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.13 shows the description analysis, including mean score, standard deviation and percentage score of brand image. “I always believe the preferred vitamin because it has good reputation.” ranked the first as it has the highest mean score that is 3.92. However, the lowest rank in term of the mean score is “I believe that the preferred vitamin brand performs better than other brands.” with mean score 3.76.

From the analysis table, there are 62.5% of respondents agree with the statement “I always believe the preferred vitamin because it has good reputation”. However, only 0.5% strongly disagree with this statement. On the other hand, there are 56.0% respondents agree on the statement “I believe that the preferred vitamin has better image than its competitors” but none of them strongly disagree while 1.5% disagree of them on this statement. There are 63.0% of respondent agree with the statement “I believe that the preferred vitamin brand is going to perform as I expected”. Yet, only 1.0% strongly disagree with this statement. Lastly, 52.5% of respondents agree with the statement, “I believe that the preferred vitamin brand performs better than other brands”. Nevertheless, only 4.0% of them disagree with the statement while none of them is strongly disagreed with it.

### 4.1.3.3 Customer Satisfaction

Table 4.14: Central Tendencies Measurement of Customer Satisfaction

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 I am delighted with the preferred vitamin effect.	0	2.0	32.5	51.0	14.5	3.78	0.710	2
Q.2 I think I did the right thing when I decided to use this vitamin.	0	2.5	29.5	55.5	12.5	3.78	0.688	3
Q.3 I feel good using this vitamin.	0.5	3.0	24.5	57.5	14.5	3.83	0.726	1
Q.4 I feel that using this vitamin has been a good experience.	0.5	2.5	29.0	56.5	11.5	3.76	0.703	4

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.14 shows the description analysis, including mean score, standard deviation and percentage score of customer satisfaction. The statement “I feel good using this vitamin.” ranked the first as it has the highest mean score that is 3.83. However, the lowest rank in

term of the mean score is “I feel that using this vitamin has been a good experience.” with mean score 3.76.

From the analysis table, there is 51.0% of respondents agree with the statement, “I am delighted with the preferred vitamin effect”. However, 2% of them disagree with this statement while none of the respondents strongly disagree on it. Meanwhile, there are 55.5% respondents agree on the statement “I think I did the right thing when I decided to use this vitamin” but there are 2.5% of the respondents disagree on the statement while none of them strongly disagree. There are 57.5% of respondent agree with the statement “I feel good using this vitamin”. Yet, only 0.5% strongly disagree with this statement. Lastly, 56.5% of respondents agree with the statement, “I feel that using this vitamin has been a good experience”. Nevertheless, only 0.5% strongly disagree with it.

#### 4.1.3.4 Trust

Table 4.15: Central Tendencies Measurement of Trust

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 I believe the preferred vitamin is trustable.	0	1.5	24.5	56.5	17.5	3.90	0.687	2
Q.2 I feel secure when physician prescribe the vitamin.	0	3.5	21.5	56.0	19.0	3.91	0.734	1
Q3. I can trust this vitamin completely without being prescribe by professionals.	1.5	17.5	27.5	41.0	12.5	3.46	0.971	4
Q4. I trust the vitamin are above certain standard.	0.5	3.5	29.5	54.0	12.5	3.75	0.737	3

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.15 shows the description analysis, including mean score, standard deviation and percentage score of trust. "I feel secure when physician prescribe the vitamin." ranked the first as it has the highest

mean score that is 3.91. However, the lowest rank in term of the mean score is “I can trust this vitamin completely without being prescribe by professionals.” with a mean score of 3.46.

From the analysis table, there is 56.5% of respondents agree with the statement, “I believe the preferred vitamin is trustable”. However, only 1.5% disagree with this statement while none of them strongly disagrees. On the other hand, there are 56.0% respondents agree on the statement, “I feel secure when physician prescribe the vitamin” but there are 3.5% disagree on this statement while none of them strongly disagree on it. There are 41.0% of respondent agree with the statement, “I can trust this vitamin completely without being prescribe by professionals”. Yet, only 1.5% strongly disagree with this statement. Lastly, 54.0% of respondents agree with the statement “I trust the vitamin are above certain standard”. Nevertheless, only 0.5% strongly disagree with it.

### 4.1.3.5 Perceived Risk

Table 4.16: Central Tendencies Measurement of Perceived Risk

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 It is easy to judge the quality of the vitamin.	4.0	19.5	39.0	32.0	5.5	3.16	0.936	4
Q.2 I am confident that the vitamin is as good as being advertised.	2.5	18.5	38.5	34.0	6.5	3.24	0.913	3
Q.3 I am confident that the vitamin are able to reach my expectation	0.5	6.0	42.5	46.0	5.0	3.49	0.709	2
Q.4 The risk of consuming a particular vitamin is relatively low	1.5	9.0	36.0	39.5	14.0	3.56	0.895	1

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.16 shows the description analysis, including mean score, standard deviation and percentage score of perceived risk. The statement, “The risk of consuming a particular vitamin is relatively low.” ranked the first as it has the highest mean score that is 3.56. However, the lowest rank in term of the mean score is “It is easy to judge the quality of the vitamin.” with a mean score of 3.16.

From the analysis table, there is 39.0% of respondents who were neutral on the statement, “It is easy to judge the quality of the vitamin”. However, 4.0% of them strongly disagree with this statement. On the other hand, there are 38.5% respondents who were neutral on the statement, “I am confident that the vitamin is as good as being advertised.”, but 2.5% of them strongly disagree with this statement. There are 46.0% of respondent agree with the statement “I am confident that the vitamin are able to reach my expectation”. Yet, only 0.5% strongly disagree with this statement. Lastly, 39.5% of respondents agree with the statement “The risk of consuming a particular vitamin is relatively low”. Nevertheless, only 1.5% strongly disagree of on this statement.

#### 4.1.3.6 Perceived Value

Table 4.17: Central Tendencies Measurement of Perceived Value

Statement	SD	D	N	A	SA	Mean	Standard Deviation	Ranking
Q.1 As compare with the time and money has been given, I believed that the vitamin is valuable.	1.5	3.0	26.5	58.5	10.5	3.74	0.747	2
Q.2 At the price has been paid, the vitamin is acceptable.	0	5.5	28.5	55.5	10.5	3.71	0.727	3
Q.3 As compare to the effort I put in, I believe that the use of vitamin is beneficial to me.	0.5	4.0	22.0	65.0	8.5	3.77	0.678	1
Q.4 The fact I use the vitamin makes a good impression on other people.	2.5	11.5	33.5	42.0	10.5	3.47	0.918	4

Source: Developed for the research

SD = Strongly Disagree

D = Disagree

N = Neutral

A = Agree

SA = Strongly Agree

Table 4.17 shows the description analysis, including mean score, standard deviation and percentage score of perceived value. The statement, “As compare to the effort I put in, I believe that the use of vitamin is beneficial to me” ranked the first as it has the highest mean score which is 3.77. However, the lowest rank in term of the mean score is “The fact I use the vitamin makes a good impression on other people” with mean score 3.47.

From the analysis table, there is 58.5% of respondents agree on the statement, “As compare with the time and money has been given, I believed that the vitamin is valuable”. However, only 1.5% of them strongly disagree with this statement. On the other hand, there are 55.5% respondents agree on the statement “At the price has been paid, the vitamin is acceptable” but there are 5.5% disagree on this statement while none of them strongly disagree on it. There are 65.0% of respondent agree with the statement “As compare to the effort I put in, I believe that the use of vitamin is beneficial to me”. Yet, only 0.5% strongly disagree. Lastly, 42.0% of respondents agree with the statement “The fact I use the vitamin makes a good impression on other people”. Nevertheless, only 2.5% of them strongly disagree with it.

## 4.2 Scale Measurement

### 4.2.1 Internal Reliability Test

Table 4.18: Summary of Reliability Test

No	Construct	Cronbach's Alpha	No. Of Items
1.	Purchase Behavioural Intention	0.782	4
2.	Brand Image	0.724	4
3.	Customer Satisfaction	0.828	4
4.	Trust	0.732	4
5.	Perceived Risk	0.739	4
6.	Perceived Value	0.735	4

Source: Developed by the research

From Table 4.18, all the constructs involving dependent variable (purchase behavioural intention), independent variables (brand image, customer satisfaction, trust, perceived risk) and mediating variable (perceived value) with regard to the rule of thumb by Hair et al. (2003), shows the test of this research are in the range of good to very good. All of the constructs scored above 0.6 which indicates that the test is sufficiently consistent and reliable. As referred to the rule of thumb proposed by Hair et al. (2003), customer satisfaction with the score of 0.828 has been ranked the highest in term of strength associated to the test.

Moreover, purchase behavioural intention, perceived risk, perceived value and trust with the Cronbach Alpha's value of 0.782, 0.739, 0.735 and 0.732 respectively has been categorised with good strength associated with the test. Lastly, the perceived risk with the score of 0.724, although showing the lowest alpha coefficient as compared to the other constructs used in the test but it still categorised as good in term of strength associated to the test.

To sum up, every construct used in this study have different Cronbach Alpha's value that indicating a different degree of associated strength between the independent variables, mediating variable and dependent variable. However, all of the constructs used to represent a satisfactory result of consistency and reliability when the Cronbach's Alpha's value is above 0.6 (Hair et al., 2003).

## 4.3 Inferential Analyses

### 4.3.1 Simple Regression Analysis

Table 4.19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.468 <sup>a</sup>	.219	.215	.51095

Source: Developed for the research

- a. Predictors: (Constant), Brand Image
- b. Dependent Variable: Perceived Value

As shown in Table 4.19, the coefficient of the determinant (R Square) is equal to 0.219 which means that 21.9% of vitamin perceived value can be explained by brand image and the remaining 79.1% is explained by other factors. Moreover, the correlation coefficient (R) has the value of 0.468 indicating that brand image has a weak positive relationship towards perceived value.

Table 4.20: ANOVA

	<b>Model</b>	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	14.527	1	14.527	55.645	.000 <sup>a</sup>
	Residual	51.693	198	0.261		
	Total	66.220	199			

Source: Developed for the research

a. Predictors: (Constant), Brand Image

b. Dependent Variable: Perceived Value

As shown in Table 4.20, the F-test value of 55.645 is significant at  $P=0.000$  ( $P<0.05$ ). Thus, the fitness of the model is confirmed. The overall regression model with the brand image worked well in explaining the variation of young adults' perceived value on a vitamin supplement.

Table 4.21: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.696	0.267		6.352	.000
	Brand Image	0.514	0.069	0.468	7.460	.000

Source: Developed for the research

a. Dependent Variable: Perceived Value

Based on Table 4.21, the following linear equation is formed:

$$\text{Vitamin Perceived Value} = 1.696 + 0.514 (\text{Brand Image})$$

There is a significant positive relationship between brand image and perceived value as the p-value is 0.000 which is less than 0.05. The regression coefficient of brand image is 0.514 which indicating when brand image increase by 1-unit, vitamin perceived value would increase by 0.514 while other factors remain.

### 4.3.2 Multiple Regression Analysis

Table 4.22: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.753 <sup>a</sup>	.567	.556	.42925

Source: Developed for the research

- a. Predictors: (Constant), Brand Image, Customer Satisfaction, Trust, Perceived Risk, Perceived Value
- b. Dependent Variable: Purchase Behavioural Intention

As shown in Table 4.22, the coefficient of the determinant (R Square) is 0.567 for regression of purchase behavioural intention of 0.753. In other words, 56.7% of the variation in the young adults' purchase behavioural intention toward vitamin supplement is influenced by the four independent variables (brand image, customer satisfaction, trust and perceived risk) and the mediating variable (perceived value) impact on the relationship between brand image and purchase behavioural intention. However, another 43.3% of variation remain uninfluenced by these variables. Moreover, the correlation coefficient (R) has the value of 0.753 indicating that there is a strong positive linear relationship between independent variables (brand image, customer satisfaction, trust and perceived risk), mediating variable (perceived value) and the dependent variable (purchase behavioural intention).

Table 4.23: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	46.776	5	9.355	50.772	.000 <sup>a</sup>
	Residual	35.746	194	0.184		
	Total	82.522	199			

Source: Developed for the research

a. Predictors: (Constant), Brand Image, Customer Satisfaction, Trust, Perceived Risk, Perceived Value

b. Dependent Variable: Purchase Behavioural Intention

As shown in Table 4.23, the F-test value of 50.772 is significant at  $P=0.000$  ( $P<0.05$ ). Thus, the fitness of the model is confirmed. The overall regression model with the four independent variables (brand image, customer satisfaction, trust and perceived risk) as well as the relationship of mediating variable (perceived value) on the influence between brand image and purchase behavioural intention worked well in explaining the variation of young adults' purchase behavioural intention towards vitamin supplement.

Table 4.24: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.190	.260		-.732	.465
	Brand Image	.260	.075	.212	3.457	.001
	Customer Satisfaction	.173	.077	.154	2.245	.026
	Trust	-.045	.066	-.041	-.674	.501
	Perceived Risk	.185	.060	.186	3.100	.002
	Perceived Value	.457	.073	.409	6.262	.000

Source: Developed for the research

a. Dependent Variable: Purchase Behavioural Intention

Based on Table 4.24, the following linear equation is formed:

**Purchase Behavioural Intention**

$$= (-0.732) + 0.260 (\text{Brand Image}) + 0.173 (\text{Customer Satisfaction}) + (-0.045) \text{Trust} + 0.185 (\text{Perceived Risk}) + 0.457 (\text{Perceived Value})$$

There is a significant relationship between brand image (0.001), customer satisfaction (0.026), perceived risk (0.002) and perceived value (0.000) towards purchase behavioural intention as these four variables have the significant value lower than 0.05. However, trust has an insignificant relationship towards purchase behavioural intention as the significant value of trust showed 0.501 that is more than 0.05.

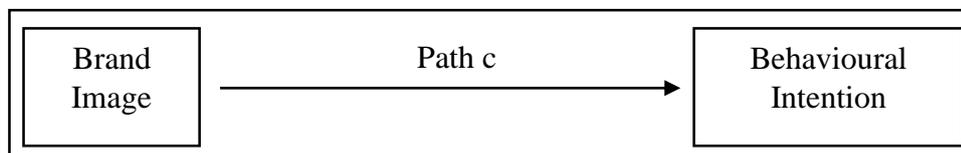
From Table 4.24, the regression coefficient of brand image is 0.260, which means when brand image increase by 1-unit, purchase behavioural intention will increase by 0.260 while other factors remain. Moreover, the regression coefficient of customer satisfaction is 0.173 that when customer satisfaction increase by 1-unit, purchased behavioural intention will increase by 0.173

while other factors remain. Other than that, the regression coefficient of trust is -0.045 that means when trust increase by 1-unit, purchase behavioural intention will decrease by 0.045 while other factors remain. Besides, the regression coefficient of perceived risk is 0.185 that means when perceived risk increase by 1-unit, purchase behavioural intention will increase by 0.185 while other factors remain. Lastly, the regression coefficient of perceived value is 0.457 which indicating when perceived value increase by 1-unit, purchase behavioural intention will increase by 0.457 while other factors remain.

In conjunction, as shown in Table 4.24, perceived value has the strongest influence toward purchase behavioural intention with a standardized beta of 0.409 following by brand image, perceived risk and customer satisfaction with a standardized beta of 0.212, 0.186 and 0.154 respectively. However, trust shown to have no significant relationship or influence towards purchase behavioural intention.

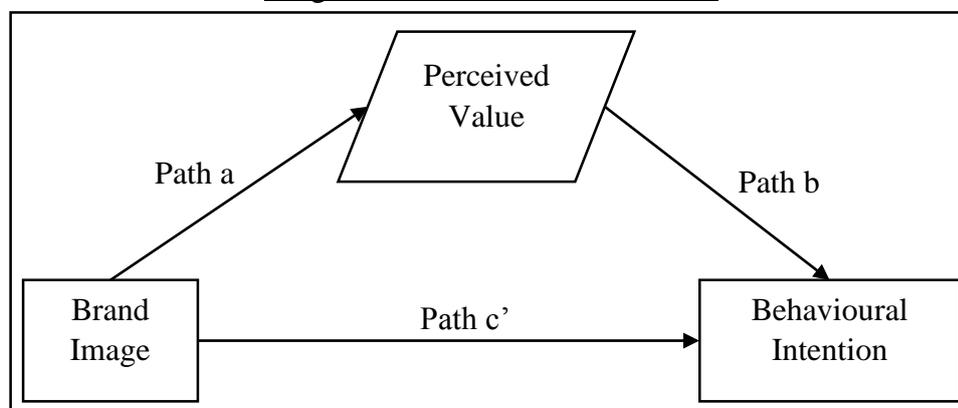
### 4.3.3 Mediating Test (Causal Test)

Diagram 4.1: Model without Mediator



Source: Developed for the Research

Diagram 4.2: Model with Mediator



Source: Developed for the Research

Table 4.25: Coefficients for the Mediating Effects

Testing Path	B	SE(B)	95% CI	$\beta$
<b>Path c: DV = Purchase Behavioural Intention</b>				
<b><math>R^2 = 0.265</math>, <math>F(1,198) = 71.510</math>, <math>p = 0.000</math></b>				
IV = Brand Image	0.631	0.075	0.484, 0.778	0.515
<b>Path a: DV= Perceived Value</b>				
<b><math>R^2 = 0.219</math>, <math>F(1,198) = 55.645</math>, <math>p = 0.000</math></b>				
IV = Brand Image	0.514	0.069	0.378, 0.650	0.468
<b>Path b &amp; c': DV = Purchase Behavioural Intention</b>				
<b><math>R^2 = 0.522</math>, <math>F(2,197) = 107.389</math>, <math>p = 0.000</math></b>				
IV = Brand Image (c')	0.302	0.068	0.167, 0.437	0.247
IV = Perceived Value (b)	0.640	0.062	0.517, 0.762	0.573
<b>Total (a)*(b)</b>				<b>0.268</b>

Source: Developed for the research

Based on Diagram 4.1 and Table 4.25 where brand image act as the independent variable and purchase behavioural intention as the dependent variable, it showed a significant relationship as P-value equal to 0.000 that is less than 0.05. Therefore, the first condition of causal test where independent variable (brand image) is significantly relating to the dependent variable (purchase behavioural intention) is clearly proven.

Based on Diagram 4.2 and Table 4.25, Path (a) that linked between brand image and perceived value has proven that the variables have a significant relationship as P-value equal to 0.000 that is less than 0.05. Therefore, the second condition of the causal test has fulfilled as the independent variable (brand image) are significantly relating to the mediator (perceived value).

According to the same diagram and table, Path (b) that linked between perceived value and purchase behavioural intention has proven that the variables have a significant relationship as P-value equal to 0.000 that is less than 0.05. Therefore, the third condition of the causal test has fulfilled as the mediating variable (perceived value) are significantly relating to the dependent variable (purchase behavioural intention).

Based on Table 4.25, the strength associated by brand image to purchase behavioural intention has decreased from 0.515 to 0.247 when the mediating variable (perceived value) is added. Although the strength associated has decreased, but brand image still has a significant positive relationship towards purchase behavioural intention. Therefore, this has proved the fourth condition of causal test. The value of 0.268 showed in Table 4.25 proved the indirect strength of brand image on purchase behavioural intention. Thus, the mediating variable (perceived value) showed a partial mediation effect on the relationship between brand image and purchase behavioural intention as supported by Cham et al. (2015).

### **4.3.4 Hypothesis Testing**

#### **Hypotheses 1**

H<sub>0</sub>: There is no relationship between vitamin supplement's brand image and young adults' perceived value to the brand.

H<sub>1</sub>: There is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.

Reject H<sub>0</sub>, if p-value < 0.05

Based on Table 4.21, the significant value for brand image is 0.000. The significant value is less than P-value 0.05. Therefore, H<sub>0</sub> is rejected and H<sub>1</sub> is accepted. Thus, it indicates that there is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.

#### **Hypotheses 2**

H<sub>0</sub>: There is no relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

H<sub>2</sub>: There is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

Reject H<sub>0</sub>, if p-value < 0.05

Based on Table 4.24, the significant value for brand image is 0.001. The significant value is less than P-value 0.05. Therefore,  $H_0$  is rejected and  $H_2$  is accepted. Thus, it indicates that there is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

### **Hypotheses 3**

$H_0$ : There is no relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.

$H_3$ : There is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.

Reject  $H_0$ , if  $p\text{-value} < 0.05$

Based on Table 4.24, the significant value for customer satisfaction is 0.026. The significant value is less than P-value 0.05. Therefore,  $H_0$  is rejected and  $H_3$  is accepted. Thus, it indicates that there is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.

#### **Hypotheses 4**

H<sub>0</sub>: There is no relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention.

H<sub>4</sub>: There is a relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention.

Reject H<sub>0</sub>, if p-value < 0.05

Based on Table 4.24, the significant value for trust is 0.501. The significant value is more than P-value 0.05. Therefore, H<sub>4</sub> is rejected and H<sub>0</sub> is accepted. Therefore, it indicates that there is no relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention.

#### **Hypotheses 5**

H<sub>0</sub>: There is no relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention.

H<sub>5</sub>: There is a relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention.

Reject H<sub>0</sub>, if p-value < 0.05

Based on Table 4.24, the significant value for perceived risk is 0.002. The significant value is less than P-value 0.05. Therefore,  $H_0$  is rejected and  $H_5$  is accepted. Thus, it indicates that there is a relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention.

### **Hypotheses 6**

$H_0$ : There is no relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention.

$H_6$ : There is a relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention.

Reject  $H_0$ , if  $p\text{-value} < 0.05$

Based on Table 4.24, the significant value for perceived value is 0.000. The significant value is less than P-value 0.05. Therefore,  $H_0$  is rejected and  $H_6$  is accepted. Thus, it indicates that there is a relationship between young adults' perceived value on vitamin supplement and their purchase behavioural intention.

### **Hypotheses 7**

H<sub>0</sub>: Vitamin supplement perceived value did not mediate the relationship between vitamin supplement's brand image and consumers' purchase behavioural intention.

H<sub>7</sub>: Vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.

Reject H<sub>7</sub>, if  $\beta$  of Path c and Path c' is the same

Based on Table 4.25,  $\beta$  of Path c and Path c' showed different values. The strength associated with vitamin supplement's brand image towards purchase behavioural intention decreased from 0.515 to 0.247. Therefore, H<sub>0</sub> is rejected and H<sub>7</sub> is accepted. Thus, it indicates that vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and consumers' purchase behavioural intention.

## **4.4 Conclusion**

In nutshell, this chapter has summarized respondents' general information and demographic profile through analysing using descriptive statistics. Moreover, an internal reliability test was conducted to examine the reliability of all the constructs. Furthermore, inferential analysis has been measured by adopting simple linear regression and multiple regression analysis to examine the degree of significant impact between independent variables and dependent variable.

## **CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS**

### **5.0 Introduction**

This chapter will provide the overall findings of the research and results of the independent variables, moderating variable and dependent variable. This chapter commences with the summary of statistical analyses, discussions of major finding, implications of the study followed by limitations of the study and recommendations for future research. Lastly, the conclusion of the entire research is included at the end of the chapter.

### **5.1 Summary of Statistical Analyses**

The summary details of the whole descriptive and inferential analyses that were generated and discussed in chapter four will be provided in this section.

#### **5.1.1 Descriptive Analysis**

In this study, researchers have categorized the respondents' data into demographic information and general information. A total of valid 200-respondents have been used to analyse in this study.

#### **5.1.1.1 Demographic Information**

The majority respondents are male which consists of 54% and another 46% are female. Moreover, the highest contribution of respondents for this study are from age group between 18 years old to 22 years old which is 72.5%. In addition, most of the respondents are Chinese (75%), followed by Malay (15%) and Indian (10%). For academic qualification, most of the respondents held Bachelor's Degree (64%) while Master and PhD (Doctorate) qualifications are the lowest held by the respondents with each only stands about 0.5%.

For the part of monthly income, most of the respondents or 79.5% of them receive monthly income lesser than RM500 while 10% having monthly income range between RM501 to RM1500. Another 4%, 3.5% and 2.5% of respondents have monthly income range between RM2501 to RM3500, RM1501 to RM2500 and RM3501 to RM4500 respectively. In fact, the least respondents or 0.5% of them having monthly income equal or more than RM5501. Among the 200-respondents, most of the respondents originate from Central Region (47.5%), followed by Southern Region (17%). There are about 13%, 12.5%, 10% came from East Coast Region, Northern Region and East Malaysia respectively.

#### **5.1.1.2 General Information**

Regard to the familiarity of vitamin's brand in consumers' mind, 56% of the respondents are familiar with Appeton, while only 6% of respondents familiar with vitamin's brand that is stated other from the list. Based on the vitamin's brand consumed the most, there are 27.5% of respondents consumed Appeton the most, while only 3%

of respondents consumed Cebion and Berocca which is the least vitamin consumed among all the vitamins listed.

Moreover, there are 51% of the respondents, which is a majority that consumed vitamin occasionally, while 10% of respondent, which is the minority consumed vitamin weekly. In terms of average spending on purchasing vitamin, 56% of respondents spend equal or lesser than RM50 on vitamin per month, while 9.5% of them spend equal or more than RM151 in vitamin per month.

Lastly, the main sources consumers used the most to obtain vitamin's information is by family members, friends and neighbours, with the percentage of 48.5% followed by a modern healthcare professional with the percentage of 26.5%. Both internet and common information and entertainment channels only hold around 11.5% and 9% respectively while the main source least used by consumers are printed materials with only 4.5%.

### **5.1.2 Central Tendencies Measurement of Construct**

The results for central tendencies measurement show that the statement "I will encourage other people to use the vitamin if they do face the same problem like me" has the highest mean score of 3.80 under purchase behavioural intention. Besides, the highest mean score for brand image goes to the statement "I always believe the preferred vitamin because it has good reputation" which is 3.92. In addition, 3.83 is the mean score for the statement "I feel good using this vitamin" stand the highest score under customer satisfaction. Meanwhile, "I feel secure when physician prescribe the vitamin" have the highest mean score of 3.91 under the trust. For

perceived risk, the statement “The risk of consuming a particular vitamin is relatively low” stand the highest mean score of 3.56. Furthermore, the highest mean score in perceived value goes to the statement of “As compare to the effort I put in, I believe that the use of vitamin is beneficial to me” with a score of 3.77.

### **5.1.3 Scale Measurement**

The results for scale measurement showed that customer satisfaction has the highest Cronbach’s Alpha, which is 0.828. However, brand image scores the lowest Cronbach’s Alpha value that is 0.724. In fact, all variables including purchase behavioural intention, brand image, customer satisfaction, trust, perceived risk and perceived value appeared to achieve good results in terms of reliability and internal consistency corresponding to Alpha Coefficients that exceed 0.6 as according to the Rules of Thumb developed by Hair et al. (2003).

### **5.1.4 Inferential Statistic**

#### **5.1.4.1 Summary of Simple Regression Analysis**

A linear equation has been formed as shown in below:

$$\text{Vitamin Perceived Value} = 1.696 + 0.514 (\text{Brand Image})$$

Based on Table 4.21, there is a significant positive relationship between brand image and perceived value as shown by the strength

associated on standardized beta with 0.468 as well as the significant level of 0.000 that is lesser than 0.05.

#### **5.1.4.2 Summary of Multiple Regression Analysis**

In the regression analysis, a regression equation was established for this study to affirm the relationship between independent variables (brand image, customer satisfaction, trust, perceived risk), moderating variables (perceived value) and the dependent variable (purchase behavioural intention).

The regression equation has been formed as shown in below:

#### **Purchase Behavioural Intention**

$$= (-0.732) + 0.260 (\text{Brand Image}) + 0.173 (\text{Customer Satisfaction}) + (-0.045) \text{Trust} + 0.185 (\text{Perceived Risk}) + 0.457 (\text{Perceived Value})$$

According to Table 4.24 and the above equation, the results showed that there is a significant relationship between brand image, customer satisfaction, perceived risk, and perceived value toward purchase behavioural intention as all was supported with a significant level less than 0.05. However, trust showed an insignificant relationship towards purchase behavioural intention with significant level more than 0.05.

The result of multiple regression analysis showed perceived value have the strongest influence on vitamin supplement purchase behavioural intention with the standardized beta of 0.409 at a significant level of 0.000 ( $P < 0.05$ ) followed by brand image with a standardized beta of 0.212 at a significant level of 0.01 ( $P < 0.05$ ).

In addition, the strength is followed by perceived risk and customer satisfaction associated on consumers' purchase behavioural intention towards vitamin supplement with a standardized beta of 0.186 at a significant level of 0.002 ( $P < 0.05$ ) and 0.154 at a significant level of 0.026 ( $P < 0.05$ ) respectively. The weakest influence on consumers' purchase behavioural intention on vitamin supplement is trust with standardized beta -0.041 at the significant level 0.501 ( $P > 0.05$ ).

It can be concluded that all the variables have a significant positive relationship except for trust towards purchase behavioural intention. In sum, H1, H2, H3, H5 and H6 were supported while H4 was not supported.

#### **5.1.4.3 Summary of Mediating Test (Causal Test)**

The proposed research model as shown in Figure 2.4 indicates that the mediation effects exist in perceived value mediates the relationship between brand image and purchase behavioural intention. As noted in research methodology, this study adopted causal test suggested by Wood et al. (2008) as cited in Memom et al. (2018). The finding of mediation effect is discussed in detail in the following section.

As discussed in Chapter 4, the causal steps suggested by Baron and Kenny (1986) indicating four conditions to address mediation effect. The first condition is the independent variable (X) is significantly relating to the dependent variable (Y). Based on data analysis and

results, brand image (X) was significantly and positively related to purchase behavioural intention (Y) as P-value equal to 0.000 that is less than 0.05. Thus, the first condition is fulfilled.

The second condition is the independent variable (X) is a significant predictor of the mediating variable (M). According to the results, brand image (X) was significantly and positively related to perceived value as the P-value equal to 0.000 that is less than 0.05. Therefore, this fulfils the second condition.

The third condition is the mediating variable (M) is a significant predictor of the dependent variable (Y). The research found that perceived value (M) was significantly and positively related to purchase behavioural intention as the P-value equal to 0.000 that is less than 0.05. Therefore, the third condition is fulfilled.

The last condition is the effect of the independent variable (brand image) is enhance or reduce to the dependent variable (purchase behavioural intention) when the mediating variable (perceived value) was included to the regression equation. The research finding indicated that the unstandardized coefficient was reduced from 0.515 to 0.247, but still remained significantly at 95-percent level. Thus, the fourth condition was also fulfilled as well as the result proved that perceived value partially mediated on the relationship between brand image and purchase behavioural intention.

## 5.2 Discussions of Major Finding

Table 5.1: Summary of the Results of Hypotheses Testing

Hypotheses	Result	Supported
<b>H1: There is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.</b>	P = 0.000 (P<0.05)	Yes
<b>H2: There is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.</b>	P = 0.001 (P<0.05)	Yes
<b>H3: There is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.</b>	P = 0.026 (P<0.05)	Yes
<b>H4: There is a relationship between young adults' trust on the vitamin supplements and their purchase behavioural intention.</b>	P = 0.501 (P>0.05)	No
<b>H5: There is a relationship between young adults' perceived risk on vitamin supplements and their purchase behavioural intention.</b>	P = 0.002 (P<0.05)	Yes
<b>H6: There is a relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention.</b>	P = 0.000 (P<0.05)	Yes
<b>H7: Vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.</b>	P = 0.000 (P<0.05)	Yes

Source: Developed for the research.

**Research Objective 1: To examine the relationship between brand image and young adults perceived value on vitamin supplement in Malaysia.**

**Research Question 1: Is there a relationship between vitamin supplement's brand image and young adults' perceived value to the brand in Malaysia?**

**H1: There is a relationship between vitamin supplement's brand image and young adults' perceived value to the brand.**

According to Table 4.24, it shows that brand image has a significant value of 0.000, which is less than 0.05. Therefore, it indicates that there is a significant relationship between vitamin supplement's brand image and young adults' perceived value to the brand. Thus, H1 is accepted in this case.

According to Habu et al. (2017), brand image will have a significant positive relationship with brand image as consumers will identify the value of particular brand due to the attributes of brand image. They further justify that brand image is an added value equipped with a product and it may influence consumers to believe, feel and behavioural intention based on the perceived value of the particular brand.

In addition, Ryu et al. (2008) explained the contribution of brand image to the value in terms of assisting consumers' evaluation on what is received and what is forgone including money. The assessment included a wide range of elements into consideration that builds brand image in relation to value. The researchers also emphasized that brand value have both direct and indirect effect on perceived value. Brand image interrelated to perceived value as it will directly strengthen the positive consumers' behavioural intention.

From the result above, it shows that the relationship between vitamin supplement's brand image and young adults' perceived value to the brand has a significant relationship. Hence, the research objective was achieved and the research question was answered in this study.

**Research Objective 2: To determine the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention in Malaysia**

**Research Question 2: Is there a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention in Malaysia?**

**H2: There is a relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.**

According to Table 4.24, it shows that brand image has a significant value of 0.000, which is less than 0.05. Therefore, it shows a significant relationship between vitamin supplement's brand image and young adults' purchase behavioural intention. Thus, H2 is accepted in this case.

Based on Aghekyan-Simonian et al. (2012) finding, consumers usually recognise the brand before they act toward the product. This is because brand image successfully replaced product attributes. When a product brand image well-established, more likely consumers will proceed with buying behaviour. Thus, the more popular the brand, the better attributes it will bring to the product which lead to purchase behavioural intention. It further supported by another research stressed brand image successfully influence behavioural intention of consumers as a brand is one of the important element to determine how to behave toward the product (Chen et al., 2014).

From the result above, it shows that the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention have a significant relationship. Hence, the research objective was achieved and the research question was answered in this study.

**Research Objective 3: To determine young adults' satisfaction relationship on vitamin supplement and their purchase behavioural intention in Malaysia.**

**Research Question 3: Is there a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention in Malaysia?**

**H3: There is a relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention.**

According to Table 4.24, it shows that customer satisfaction has a significant value of 0.026, which is lesser than 0.05. Therefore, it shows a significant relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention. Thus, H3 is accepted in this case.

Based on Han and Ryu (2009), their research finding showed customer satisfaction act as a function of consumers' behavioural intention. A satisfied customer will possess repurchase intention, spread positive word of mouth and increase willingness to pay (Heung & Gu, 2012). The researchers continue their statement by stating the increment of sales, profit and customers' loyalty when consumers have a positive behavioural intention.

Moreover, Getty and Thomson (1994) further explain the relationship of customer satisfaction and behavioural intention and proven to have a significant relationship of those variables in the lodging industry. This is because consumers are not willing to take risk on trying new services or products and thus, they preferred the satisfied one from past experience.

From the result above, it shows that the relationship between young adults' satisfaction on vitamin supplement and their purchase behavioural intention have a significant relationship. Hence, the research objective was achieved and the research question was answered in this study.

**Research Objective 4: To determine the relationship between young adults' trust on the vitamin supplement and their purchase behavioural intention in Malaysia.**

**Research Question 4: Is there a relationship between young adults' trust on the vitamin supplements and their purchase behavioural intention in Malaysia?**

**H4: There is a relationship between young adults' trust on the vitamin supplements and their purchase behavioural intention.**

According to Table 4.24, it shows that trust has a significant value of 0.501 that is more than 0.05. Therefore, it shows an insignificant relationship between young adults' trust on the vitamin supplements and their purchase behavioural intention. Thus, H4 is rejected in this case.

Based on Brower et al. (2000), trust has an insignificant relationship towards purchase behavioural intention. This is because market like luxury product segment, behavioural intention is negatively dependent on trust. They further justified by stating the full reliability of consumers has toward the provider. Moreover, Tonder et al. (2017) added that consumers perceived of reliable product offering required to be handled effectively in a manner to convince customers that the worthiness of effort to maintain committed to the provider.

From the result above, it shows that the relationship between young adults' trust on the vitamin supplements and their purchase behavioural intention has an insignificant relationship. Hence, the research objective was unable to achieve and the research question was unable to answer in this study due to insignificant result gain from the respondents' feedbacks.

**Research Objective 5: To determine the relationship between young adults' perceived risk on vitamin supplement and their purchase behavioural intention in Malaysia.**

**Research Question 5: Is there a relationship between young adults' perceived risk on vitamin supplements and their purchase behavioural intention in Malaysia?**

**H5: There is a relationship between young adults' perceived risk on vitamin supplements and their purchase behavioural intention.**

According to Table 4.24, it shows that perceived risk has a significant value of 0.002 that is less than 0.05. Therefore, it shows a significant relationship between young adults' perceived risk on vitamin supplements and their purchase behavioural intention. Thus, H5 is accepted in this case.

According to Bauer et al., (2005) stated that risk will result in anxiety and strongly influence on behavioural desired. Moreover, a study by Cameron et al. (2012), proven that consumer living in environment that favour convenience will accept different degree of risk in life. This finding also supported by Aghekyan-Simonian et al. (2012), as certain type of risk influence positively on consumer purchasing decision as long as there are convenience in obtaining the product. Furthermore, it is the fact that the presence of online shopping benefits and convenience has offset the weightage of consumers' perceived risk especially financial risk towards purchase behavioural intention. However, according to same study by Aghekyan-Simonian et al. (2012), the other elements of risk such as physical risk and social risk are in the position to impact consumers' purchase decision.

From the result above, it shows that the relationship between young adults' perceived risk on vitamin supplements and their purchase behavioural intention have a significant relationship. Hence, the research objective was achieved and the research question was answered in this study.

**Research Objective 6: To determine the relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention in Malaysia.**

**Research Question 6: Is there a relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention in Malaysia?**

**H6: There is a relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention.**

According to Table 4.24, it exhibits that perceived value has a significant value of 0.000, which is lesser than 0.05. Therefore, it shows a significant relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention. Thus, H6 is accepted in this case.

Based on a study done by Liu et al. (2015), perceived value has a significant impact on purchase behavioural intention. They explained that consumers adoption intention to a product was predicted by consumers' perceived value such as perceived money saving and perceived convenience. Wang and Yu (2016) stated that company focus on developing appropriate appeals on the product could generate perception value in consumers to affect positively on consumers intention to repurchase.

From the result above, it proven that the relationship between young adults' perceived value on vitamin supplements and their purchase behavioural intention have a significant relationship. Hence, the research objective was achieved and the research question was answered in this study.

**Research Objective 7: To determine the mediator effect of vitamin supplement perceived value towards the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.**

**Research Question 7: Is there any mediation effect of perceived value on the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention?**

**H7: Vitamin supplement perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention.**

According to causal mediating test, it shows that perceived value mediates on the relationship between brand image and purchase behavioural intention where unstandardized beta dropped from 0.515 to 0.247. Therefore, it shows a partial effect of perceived value in mediating the relationship between vitamin supplement's brand image and consumers' purchase behavioural intention. Thus, H7 is accepted in this case.

The result of this research is similar to the past study by Ryu et al. (2008). It indicated that perceived value have a partial mediating effect between brand image and purchase behavioural intention. Partial effect of mediating variable is an effect which did not change the significant between the dependent variable and independent variable but the influence on the strength associated between those variables (Baron & Kenny, 1986 as cited in Memon et al., 2018).

Furthermore, Haba et al. (2017) added to their research that perceived value mediate the role of brand image towards purchase behavioural intention. They justified by stating that consumers need to perceive the usefulness of the products before purchasing it. Brand image became the added value of a particular product in consumers' mind and thus, it influences the way they think, feels and act.

From the result above, it shows that perceived value mediates the relationship between vitamin supplement's brand image and young adults' purchase behavioural intention. Hence, the research objective was achieved and the research question was answered in this study.

## **5.3 Implications of the Study**

### **5.3.1 Managerial Implications**

#### **5.3.1.1 Brand Image**

Based on the research finding, the result shows that brand image and consumers' purchase behavioural intention on vitamin supplement have a significant relationship. It indicated that brand image plays an important role for young adults in Malaysia on their decision of behavioural intention towards vitamin supplement. This may due to the brand image develop consumers' confidence on engaging certain positive behaviour towards the vitamin supplement.

Brand image also one of the strongest element in deciding consumers' purchasing behaviour. The challenge takes place as consumers' perceived brand image according to the personality of brands. In addition, the recognition will come from different aspects that build brand image. Brand is not about the slogan or logo only but it comprises both visual elements and brand association. These create a challenge for a firm to build a positive brand image as forgone the importance of maintaining consistent brand image will eventually similar to lose a business.

Apart from that, brand image is paramount in building loyalty and credibility among potential customers (Thimothy, 2016). The more often the vitamin brand able to deliver the promise with their strong brand image, it will actually more reliable for consumers to

remember what actually the brand stands for. The pharmaceutical company that putting the effort in every of their action will indicate to consumers that the company are serious about serving their business.

Therefore, company proper brand building and sustaining effort have to be the main concern in order to develop a positive brand image in consumers' mind. Consumers are not keen on buying the product or service but they are buying what actually the brand means to them. Thus, strong brand image can enhance sales and profit of the company as well as company's overall performance, market share and bargaining power in the industry.

#### **5.3.1.2 Perceived Value**

Based on the research finding, the result shows that perceived value and young adults' purchase behavioural intention on vitamin supplement have a significant relationship. It indicated that perceived value has an impact for young adults in Malaysia on their decision of behavioural intention towards vitamin supplement.

The value was judged in different aspects like monetary value, social value and many more in consumers' mind but in overall, those values play a role in determining purchase behavioural intention of young adults in Malaysia towards vitamin supplement. In this case, consumers might judge the importantness of vitamin supplement in comparison of what they have forgone to what will they received in before engaging in certain behaviour.

The pharmaceutical company need to leverage the value provided or being perceived by consumers to match with what the consumers forwent and what they have received in reality. A value-added towards vitamin are applicable and sell at a premium, as long as consumers' perceived the value of the vitamin matched or exceeded their requirements. This will enhance their purchase behavioural intention towards the product, in this case, vitamin.

Thus, the company have to build a strong perceived value in order to gain purchase behavioural intention of the vitamin for young adults in Malaysia.

#### **5.3.1.3 Customer Satisfaction**

Based on the research finding, the result shows that customer satisfaction and consumers' purchase behavioural intention on vitamin supplement have a significant relationship. It indicated that customer satisfaction has an impact for young adults in Malaysia on their decision of behavioural intention towards vitamin supplement.

Customer satisfaction categorises into three categories which are unsatisfied, satisfied and delight (above satisfaction level). Consumers need to be satisfied with the vitamin supplement offered by the pharmaceutical company upon acting towards it. Usually, customer satisfaction is closely related to the expectation they establish on the vitamin supplement.

Moreover, expectation can build from various aspects such as brand, favourability, preferences, packaging and many more. When consumers expecting a favourable outcome upon receiving the vitamin supplement, the marketer has to make sure what consumers received align with their expectations or perform exceed their expectations.

In fact, vitamin supplement itself should not just be good looking but also to improvise consumers' health to ensure satisfaction. Hence, customer satisfaction is an important element that marketer have to achieve to gain positive behavioural intention such as spreading positive word-of-mouth and purchase intention.

#### **5.3.1.4 Trust**

Based on the research finding, the result shows that trust and consumers' purchase behavioural intention on vitamin supplement have an insignificant relationship. It indicated that trust does not have a direct impact on young adults in Malaysia on their decision of behavioural intention towards vitamin supplement.

This might happen due to the degree of importance of trust element on vitamin supplement for consumers is relatively low. In purchasing vitamin supplement, a consumers' trust may not fit on the brand first before purchasing it. However, the trust on vitamin supplement are lies on the authorised provider of the product. As long as the vitamin supplement provider represents by an appropriate authority such as specific vitamin brand shop and vitamin that prescribed by professional physicians, the level of

reliability on that particular vitamin supplement will eventually increase. This indicates that brand trust is not the main element that able to convince consumers on engaging certain behaviour towards vitamin supplement.

Thus, the pharmaceutical company does not need to emphasise the most on building brand trust as a continuance of enhancing other variables such as customer satisfaction and perceived value will eventually improve the extent of consumer's trust towards the vitamin supplement.

#### **5.3.1.5 Perceived Risk**

Based on the research finding, the result shows that perceived risk and consumers' purchase behavioural intention on vitamin supplement have a significant relationship. It indicated that perceived risk have an impact for young adults in Malaysia on their decision of behavioural intention towards vitamin supplement.

The perceived risk that associated with vitamin supplement viewed in different aspects such as financial risk, social risk and health risk. Consumers might worry that consuming vitamin supplement that was highly priced were unable to provide desired benefits. Vitamin supplement might have caused allergies to certain consumers without their acknowledgement and those negative side effects arise can even eventually badly affect their social life.

In addition, consumers also fear the risk of vitamin consumption in terms of long-term health-related issue. The worst-case scenario arises if the vitamin consumed is defective and might worsen the user's health or even cause death. Consumers can proceed to legal suit towards responsible pharmaceutical company if those issues arise but health-related issue have an absolute value that no compensation can be accepted.

Therefore, pharmaceutical companies have to develop reliable approaches to reduce all these issues in order to lower consumers' perceived risk on vitamin supplement and thus improve their purchase behavioural intention.

## **5.4 Limitations of the Study**

Throughout the study being conducted, there are few limitations have been discovered that has been an obstruction for the study to be conducted effectively. Firstly, the distribution of survey questionnaires among the respondents is an imbalance in terms of demographic profile. Most of the respondents are from the age group of 18 years old to 22 years old (72.5%) where the research supposed to be conducted on young adults' with age range from 18 years old to 40 years old. Other than that, Chinese respondents took part in this study excessively (75%) as compared to other races such as Malay (15%) and Indian (10%). The imbalance of respondents in terms of demographic aspect leads to the findings are unable to generalize all young adults with age range from 18 years old to 40 years old in Malaysia.

In addition, the distribution of survey throughout entire Malaysia is also restricted due to time and budget constraints. This lead to imbalance distribution of respondents according to originate state as the majority of respondents is originated from the central region of Malaysia. Therefore, the study may be inadequate to generalize the total population of young adults in Malaysia on purchase behavioural intention towards vitamin supplements.

Besides that, there is also sampling prejudice happens when respondents were chosen based on convenient sampling method. The sample size chosen was decided by the researchers which are not based on any reason or actual experience. In facts, the respondents taking part in this research are mainly the friends or relatives of the researchers as they are chosen based on their availability and proximity. Thus, the adoption of convenience sampling method in this study might not able to generate a more valid research finding.

Apart from that, the sources of information or journal database available for the study on medical field in terms of consumers' behaviour context still remain limited. In other words, there is limited latest journal are being published on purchase behaviour intention towards vitamin supplement. Thus, researchers encounter difficulty in conducting information search on valid and updated resources to support the research study especially in the section of the literature review.

Lastly, by acknowledging the limitations that existed in the research will help to improve the quality of research as well as serve as better guidelines for future research.

## 5.5 Recommendations for Future Research

Upon the limitation discovered in the study, the first propose recommendation for future research is the implementation of cluster sampling instead of convenience sampling. In facts, cluster sampling could reduce the sample bias and prejudice of the research. The researcher will split the population into separate groups and applied a simple random sampling method to choose which cluster to be used in conducting the research. Cluster sampling is considered efficient in terms of time and cost for research designs for large geographical areas. Thus, this method can improve the demographic drawback of the research and at the same time are easier to be applied practically.

Apart from that, researchers should consider conducting the research using a larger scale of the sample (more than 200) in order to boost the accuracy and reliability of the findings. The larger the sample size collected, the more the information obtained then the uncertainty is able to reduce. However, it is still recommended that the sample size is within range of 30 to 500 as proposed by Roscoe (1975) to avoid Type II error.

Moreover, the researcher also has to ensure that the respondents used for the study are balanced in terms of demographic perspective. It is highly recommended that the researchers establish a list of respondents that later being categorized into desire demographic group. Researchers have to ensure that the number of respondents according to age, race, education level, originate state are equally distributed. Hence, by developing equally balanced respondents list according to demographic aspects, the validity and reliability of research finding can be improved.

Lastly, in the future, if any researchers interest to seek for more determinants of purchase behavioural intention on a vitamin supplement, the recommended variables can be used for the study are customers' loyalty, discounted price and product premium price. This can also broaden the understanding on the field of

behavioural intention and Theory of Reason Action (TRA) as well as provide novel findings toward this segment. Thus, with the increasing awareness of importance on consuming vitamin supplement, this study is highly recommended to review and refine for generating a comprehensive generalization of consumers' behaviour towards vitamin supplement in the market.

## **5.6 Conclusion**

In conclusion, this research has successfully achieved the research objectives and solved the research questions. This research aims to clarify the relationship between brand image, customer satisfaction, trust and perceived risk toward purchase behavioural intention on vitamin supplement among young adults in Malaysia. It also consists the finding of mediation effect of perceived value between brand image and purchase behavioural intention.

The test used such as Cronbach's Alpha Reliability Test, Simple Linear Regression Analysis, Multiple Linear Regression Analysis and Causal Mediation Test were adopted to investigate the relationship between the independent variables, mediating effect and dependent variable. It portrayed that brand image, customer satisfaction, perceived risk and perceived value are the factors influencing purchase behavioural intention. Besides, the result also showed that perceived value mediates the relationship between brand image and young adults' purchase behavioural intention. In addition, perceived value has the strongest influence on purchase behavioural intention of vitamin supplement among young adults in Malaysia. This showed that young adults in Malaysia are more value conscious when they purchase vitamin supplement.

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APPENDICES

**Appendix 1: Questionnaire**



**UNIVERSITI TUNKU ABDUL RAHMAN  
FACULTY OF ACCOUNTANCY AND MANAGEMENT  
BACHELOR OF INTERNATIONAL BUSINESS (HONS)**

**Determinants of Purchase Behavioural Intention on Vitamin  
Supplement among Young Adults in Malaysia  
Survey Questionnaire**

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The purpose of this survey is to conduct a research to investigate the “Determinants of Purchase Behavioural Intention on Vitamin among Young Adults in Malaysia”.

All information provided will be assured to keep it private and confidential.

The information gathered used solely for academic purpose.

Instruction:

1. There are THREE (3) sections in this questionnaire. Please answer ALL questions in ALL sections.
2. Completion of this form will take up your 10 to 15 minutes.
3. The contents and response of this questionnaire will be kept strictly confidential.

Your kind participation and cooperation is greatly appreciated.

**Group Members:**

No	Name	Student Id
1	Siew Jun Yaw	14UKB05532
2	Teoh Zhi Ming	14UKB03554

### **Section A: General Information**

In this section, please read each question attentively. Please *tick* (✓) your answer accordingly or fill in the blanks provided for each question given below. Each question can choose **ONLY ONE** answer.

Q1. Which of the following Vitamins' brands that are familiar to you? (\*choose more than one answer)

- 21<sup>st</sup> century
- Abbott
- Appeton
- Berocca
- Bio-life
- Blackmores
- Caltrate
- Cebion
- Flavettes
- Kordel's
- Others: \_\_\_\_\_

Q2. Based on your answer in Q1, which brand do you consume the most?

- 21<sup>st</sup> century
- Abbott
- Appeton
- Berocca
- Bio-life
- Blackmores
- Caltrate
- Cebion
- Flavettes
- Kordel's
- Others: \_\_\_\_\_

Q3. How often do you consume vitamin?

- Daily
- Weekly
- Occasionally
- Others: \_\_\_\_\_

Q4. On average, how much do you spend on purchasing vitamin per month?

- ≤ RM 50
- RM 51-RM 100
- RM 101-RM 150
- ≥ RM 151

Q5. What is the main source you use to obtain vitamins' information?

- Printed materials (magazines, newspaper)
- Internet
- Common information and entertainment channels (TV, Radio)
- Modern healthcare professional (doctors, pharmacists, medical assistance)
- Family members, friends, and neighbours

## **Section B: Construct Measurement**

This section is seeking your opinion regarding determinants of purchase behavioural intention on vitamin among young adults. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using Likert scale.

<b>Strongly Disagree (SD)</b>	<b>Disagree (D)</b>	<b>Neutral (N)</b>	<b>Agree (A)</b>	<b>Strongly Agree (SA)</b>
1	2	3	4	5

For each of the following statements, kindly circle **ONLY ONE** number that represent your opinion the most.

<b>No.</b>	<b>Question</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>
<b>Brand Image</b>						
1.	I always believe the preferred vitamin because it has good reputation.	1	2	3	4	5
2.	I believe that the preferred vitamin has better image than its competitors.	1	2	3	4	5
3.	I believe that the preferred vitamin brand is going to perform as I expected.	1	2	3	4	5
4.	I believe that the preferred vitamin brand performs better than other brands.	1	2	3	4	5
<b>Customer Satisfaction</b>						
1.	I am delighted with the preferred vitamin effect.	1	2	3	4	5
2.	I think I did the right thing when I decided to use this vitamin.	1	2	3	4	5
3.	I feel good using this vitamin.	1	2	3	4	5
4.	I feel that using this vitamin has been a good experience.	1	2	3	4	5
<b>Trust</b>						
1.	I believe the preferred vitamin is trustable.	1	2	3	4	5
2.	I feel secure when physician prescribe the vitamin.	1	2	3	4	5
3.	I can trust this vitamin completely without being prescribe by professionals.	1	2	3	4	5
4.	I trust the vitamin are above certain standard.	1	2	3	4	5

No.	Question	SD	D	N	A	SA
<b>Perceived Risk</b>						
1.	It is easy to judge the quality of the vitamin.	1	2	3	4	5
2.	I am confident that the vitamin is as good as it advertised.	1	2	3	4	5
3.	I am confident that the vitamin are able to reach my expectation	1	2	3	4	5
4.	The risk of consuming a particular vitamin is relatively low	1	2	3	4	5
<b>Perceived Value</b>						
1.	As compare with the time and money has been given, I believed that the vitamin is valuable.	1	2	3	4	5
2.	At the price has been paid, the vitamin is acceptable.	1	2	3	4	5
3.	As compare to the effort I put in, I believe that the use of vitamin is beneficial to me.	1	2	3	4	5
4.	The fact I use the vitamin makes a good impression on other people.	1	2	3	4	5
<b>Behavioural Intention</b>						
1.	The willingness to purchase the vitamin is high.	1	2	3	4	5
2.	I will highly recommend others to make use of this vitamin.	1	2	3	4	5
3.	I am willing to pay more for this vitamin than competitor brand.	1	2	3	4	5
4.	I will encourage other people to use the vitamin if they do face same problem like me.	1	2	3	4	5

### **Section C: Demographic Profile**

In this section, we would like you to fill up some of your personal details. Please *tick (✓)* your answer accordingly or fill in the blanks provided for each question given below. *Your details will be kept privately and confidentially.*

Q1. Gender:

- Male
- Female

Q2. Age:

- 18 years old to 22 years old
- 23 years old to 27 years old
- 28 years old to 32 years old
- 33 years old to 40 years old

Q3. Ethnicity:

- Malay
- Chinese
- Indian
- Others: \_\_\_\_\_

Q4. Education Level:

- High School Certificate (SPM)
- Diploma
- Bachelor Degree
- Master
- PhD (Doctorate)
- Others: \_\_\_\_\_

Q5. Monthly Income

- $\leq$  RM500
- RM 501- RM 1500
- RM 1501-RM 2500
- RM 2501-RM 3500
- RM 3501-RM 4500
- RM 4501-RM 5000
- $\geq$  RM 5000

Q6. Originate state (Current Hometown)

- Northern Region (Perlis, Kedah, Penang, Perak)
- East Coast Region (Kelantan, Terengganu, Pahang)
- Central Region (Selangor, Kuala Lumpur, Putrajaya)
- Southern Region (Negeri Sembilan, Malacca, Johor)
- East Malaysia (Sabah, Sarawak, Labuan)

**Thank you for your kind participation and cooperation  
in completing this questionnaire.**

**All responses will assured to be kept private and confidential.**

## **Appendix 2: Descriptive Analysis**

### **Demographic Profile**

#### **Gender**

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Male</b>	108	54	108
	<b>Female</b>	92	46	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

#### **Age**

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>18 Years old to 22 Years Old</b>	145	72.5	145
	<b>23 Years old to 27 Years old</b>	42	21	187
	<b>28 Years old to 32 Years old</b>	10	5	197
	<b>33 Years old to 40 Years old</b>	3	1.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

#### **Ethnicity**

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Malay</b>	30	15	30
	<b>Chinese</b>	150	75	180
	<b>Indian</b>	20	10	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

### Education Level

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>High School Certificate (SPM)</b>	48	24	48
	<b>Diploma</b>	22	11	70
	<b>Bachelor Degree</b>	128	64	198
	<b>Master</b>	1	0.5	199
	<b>PhD (Doctorate)</b>	1	0.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

### Monthly Income

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>≤ RM500</b>	159	79.5	159
	<b>RM501-RM1500</b>	20	10	179
	<b>RM1501-RM2500</b>	7	3.5	186
	<b>RM2501-RM3500</b>	8	4	194
	<b>RM3501-RM4500</b>	5	2.5	199
	<b>RM4501-RM5500</b>	0	0	199
	<b>≥ RM5501</b>	1	0.5	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

**Original State (Current Hometown)**

		Frequency	Percent (%)	Cumulative Frequency
Valid	<b>Northern Region (Perlis, Kedah, Penang, Perak)</b>	25	12.5	25
	<b>East Coast Region (Kelantan, Terengganu, Pahang)</b>	26	13	51
	<b>Central Region (Selangor, Kuala Lumpur, Putrajaya)</b>	95	47.5	146
	<b>Southern Region (Negeri Sembilan, Malacca, Johor)</b>	34	17	180
	<b>East Malaysia (Sabah, Sarawak, Labuan)</b>	20	10	200
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

General Information

**Vitamin's Brand that Consumer are Familiar with**

Vitamin's Brand	Frequency	Percentage (%)	Cumulative Frequency
<b>21<sup>st</sup> Century</b>	56	28	56
<b>Abbot</b>	43	21.5	99
<b>Appeton</b>	112	56	211
<b>Berocca</b>	20	10	231
<b>Bio-Life</b>	103	51.5	334
<b>Blackmore</b>	99	49.5	433
<b>Caltrate</b>	22	11	455
<b>Cebion</b>	26	13	481
<b>Flavettes</b>	26	13	507
<b>Kordel's</b>	35	17.5	542
<b>Others</b>	12	6	554

**Vitamin's Brand that Consumer Consumed the Most**

Vitamin's Brand	Frequency	Percentage, (%)	Cumulative Frequency
<b>21<sup>st</sup> Century</b>	8	4	8
<b>Abbot</b>	8	4	16
<b>Appeton</b>	55	27.5	71
<b>Berocca</b>	6	3	77
<b>Bio-Life</b>	34	17	111
<b>Blackmore</b>	42	21	153
<b>Caltrate</b>	7	3.5	160
<b>Cebion</b>	6	3	166
<b>Flavettes</b>	7	3.5	173
<b>Kordel's</b>	13	6.5	186
<b>Others</b>	14	7	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

### Frequency Consumer Consumed Vitamin

	Frequency	Percentage, (%)	Cumulative Frequency
<b>Daily</b>	78	39	78
<b>Weekly</b>	20	10	98
<b>Occasionally</b>	102	51	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

### Average Spending of Consumer on Purchasing Vitamin per Month

Spending (RM)	Frequency	Percentage, (%)	Cumulative Frequency
<b>≤ RM 50</b>	112	56	112
<b>RM 51- RM 100</b>	47	23.5	159
<b>RM 101- RM 150</b>	22	11	181
<b>≥ RM 151</b>	19	9.5	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

### Main Source Consumer Used to Obtain Vitamin's Information

Information Sources	Frequency	Percentage, (%)	Cumulative Frequency
<b>Printed Materials (Magazines, Newspaper, etc)</b>	9	4.5	9
<b>Internet</b>	23	11.5	32
<b>Common Information and Entertainment Channels (TV, Radio, etc)</b>	18	9	50
<b>Modern Healthcare Professional (Doctors, Pharmacists, Medical Assistance)</b>	53	26.5	103
<b>Family Members, Friends and Neighbours</b>	97	48.5	200
<b>Total</b>	<b>200</b>	<b>100</b>	<b>200</b>

---

**Appendix 3: SPSS Output**

Questions' Mean and Standard Deviation of 200 valid respondents

**Case Processing Summary**

	N	%
Cases Valid	200	100.0
Excluded <sup>a</sup>	0	.0
Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.916	.918	24

**Item Statistics**

	Mean	Std. Deviation	N
Q.1 I always believe the preferred vitamin because it has good reputation.	3.92	.739	200
Q.2 I believe that the preferred vitamin has better image than its competitors.	3.86	.683	200
Q.3 I believe that the preferred vitamin brand is going to perform as I expected.	3.84	.686	200
Q.4 I believe that the preferred vitamin brand performs better than other brands.	3.76	.733	200
Q.1 I am delighted with the preferred vitamin effect.	3.78	.710	200
Q.2 I think I did the right thing when I decided to use this vitamin.	3.78	.688	200
Q.3 I feel good using this vitamin.	3.83	.726	200
Q.4 I feel that using this vitamin has been a good experience.	3.76	.703	200
Q.1 I believe the preferred vitamin is trustable.	3.90	.687	200
Q.2 I feel secure when physician prescribe the vitamin.	3.91	.734	200
Q3. I can trust this vitamin completely without being prescribe by professionals.	3.46	.971	200
Q4. I trust the vitamin are above certain standard.	3.75	.737	200
Q.1 It is easy to judge the quality of the vitamin.	3.16	.936	200
Q.2 I am confident that the vitamin is as good as being advertised.	3.24	.913	200
Q.3 I am confident that the vitamin are able to reach my expectation	3.49	.709	200
Q.4 The risk of consuming a particular vitamin is relatively low	3.56	.895	200
Q.1 As compare with the time and money has been given, I believed that the vitamin is valuable.	3.74	.747	200
Q.2 At the price has been paid, the vitamin is acceptable.	3.71	.727	200
Q.3 As compare to the effort I put in, I believe that the use of vitamin is beneficial to me.	3.77	.678	200
Q.4 The fact I use the vitamin makes a good impression on other people.	3.47	.918	200
Q.1 The willingness to purchase the vitamin is high.	3.51	.862	200
Q.2 I will highly recommend others to make use of this vitamin.	3.60	.827	200
Q.3 I am willing to pay more for this vitamin than competitor brand	3.46	.890	200
Q.4 I will encourage other people to use the vitamin if they do face same problem like me.	3.80	.723	200

Pilot Test (n=40)

**Brand Image**

**Case Processing Summary**

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.828	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BR1	10.70	3.395	.615	.804
BR2	11.02	3.512	.563	.829
BR3	11.05	3.485	.710	.759
BR4	11.02	3.615	.772	.742

**Customer Satisfaction**

**Case Processing Summary**

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.929	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CS1	10.7500	5.115	.792	.921
CS2	10.6750	4.789	.865	.897
CS3	10.6000	5.118	.805	.916
CS4	10.6500	4.644	.875	.893

**Trust**

**Case Processing Summary**

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.462	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
T1	10.6250	2.599	.409	.280
T2	10.7750	2.128	.407	.230
T3	11.3500	3.105	-.013	.672
T4	10.9000	2.503	.366	.299

## Perceived Risk

### Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

### Reliability Statistics

Cronbach's Alpha	N of Items
.732	4

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PR1	9.6250	3.369	.491	.692
PR2	9.5000	3.128	.621	.610
PR3	9.1250	3.497	.649	.612
PR4	9.0250	3.820	.366	.759

**Perceived Value**

**Case Processing Summary**

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.824	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PV1	10.1500	5.003	.793	.713
PV2	10.1250	4.984	.759	.727
PV3	10.0750	4.738	.734	.736
PV4	10.3750	6.394	.356	.900

## Behavioural Intention

### Case Processing Summary

		N	%
Cases	Valid	40	100.0
	Excluded <sup>a</sup>	0	.0
	Total	40	100.0

a. Listwise deletion based on all variables in the procedure.

### Reliability Statistics

Cronbach's Alpha	N of Items
.855	4

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
BI1	10.0500	5.638	.718	.806
BI2	9.9000	5.887	.729	.803
BI3	10.1250	6.010	.619	.848
BI4	9.6000	5.631	.726	.802

Scale Measurement (reliability test, n=200)

**Brand Image**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.724	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 I always believe the preferred vitamin because it has good reputation.	11.44	2.721	.475	.687
Q.2 I believe that the preferred vitamin has better image than its competitors.	11.51	2.663	.581	.625
Q.3 I believe that the preferred vitamin brand is going to perform as I expected.	11.53	2.873	.465	.691
Q.4 I believe that the preferred vitamin brand performs better than other brands.	11.61	2.611	.538	.648

**Customer Satisfaction**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.828	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 I am delighted with the preferred vitamin effect.	11.37	3.328	.559	.826
Q.2 I think I did the right thing when I decided to use this vitamin.	11.37	3.168	.669	.777
Q.3 I feel good using this vitamin.	11.32	2.942	.727	.749
Q.4 I feel that using this vitamin has been a good experience.	11.39	3.122	.669	.777

**Trust**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.732	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 I believe the preferred vitamin is trustable.	11.10	3.612	.554	.659
Q.2 I feel secure when physician prescribe the vitamin.	11.10	3.648	.480	.695
Q3. I can trust this vitamin completely without being prescribe by professionals.	11.55	3.053	.453	.737
Q4. I trust the vitamin are above certain standard.	11.26	3.249	.656	.598

**Perceived Risk**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.739	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 It is easy to judge the quality of the vitamin.	10.28	3.901	.537	.678
Q.2 I am confident that the vitamin is as good as being advertised.	10.20	3.648	.653	.604
Q.3 I am confident that the vitamin are able to reach my expectation	9.94	4.525	.575	.668
Q.4 The risk of consuming a particular vitamin is relatively low	9.88	4.458	.397	.756

**Perceived Value**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.735	4

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 As compare with the time and money has been given, I believed that the vitamin is valuable.	10.95	3.298	.541	.667
Q.2 At the price has been paid, the vitamin is acceptable.	10.97	3.235	.597	.638
Q.3 As compare to the effort I put in, I believe that the use of vitamin is beneficial to me.	10.91	3.489	.543	.671
Q.4 The fact I use the vitamin makes a good impression on other people.	11.22	3.014	.460	.731

## Behavioural Intention

### Case Processing Summary

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

### Reliability Statistics

Cronbach's Alpha	N of Items
.782	4

### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q.1 The willingness to purchase the vitamin is high.	10.86	3.783	.629	.707
Q.2 I will highly recommend others to make use of this vitamin.	10.77	3.826	.656	.693
Q.3 I am willing to pay more for this vitamin than competitor brand	10.91	3.845	.572	.739
Q.4 I will encourage other people to use the vitamin if they do face same problem like me.	10.57	4.559	.503	.769

Central Tendencies Measurement

**Simple Linear Regression Analysis**

**Descriptive Statistics**

	Mean	Std. Deviation	N
Perceived Value	3.6700	.57686	200
Brand Image	3.8413	.52583	200

**Correlations**

		Perceived Value	Brand Image
Pearson Correlation	Perceived Value	1.000	.468
	Brand Image	.468	1.000
Sig. (1-tailed)	Perceived Value	.	.000
	Brand Image	.000	.
N	Perceived Value	200	200
	Brand Image	200	200

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.468 <sup>a</sup>	.219	.215	.51095

a. Predictors: (Constant), Brand Image

b. Dependent Variable: Perceived Value

**Model Summary<sup>b</sup>**

Model	Change Statistics					Durbin-Watson
	R Square Change	F Change	df1	df2	Sig. F Change	
1	.219	55.645	1	198	.000	1.864

b. Dependent Variable: Perceived Value

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.527	1	14.527	55.645	.000 <sup>a</sup>
	Residual	51.693	198	.261		
	Total	66.220	199			

a. Predictors: (Constant), Brand Image

b. Dependent Variable: Perceived Value

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.696	.267		6.352	.000
	Brand Image	.514	.069	.468	7.460	.000

a. Dependent Variable: Perceived Value

**Coefficients<sup>a</sup>**

Model	95.0% Confidence Interval for B		Correlations		
	Lower Bound	Upper Bound	Zero-order	Partial	Part
1 (Constant)	1.170	2.223			
Brand Image	.378	.650	.468	.468	.468

a. Dependent Variable: Perceived Value

## Multiple Linear Regression Analysis

### Descriptive Statistics

	Mean	Std. Deviation	N
Behavioural Intention	3.5913	.64396	200
Brand Image	3.8413	.52583	200
Customer Satisfaction	3.7863	.57448	200
Trust	3.7513	.58804	200
Perceived Risk	3.3588	.64998	200
Perceived Value	3.6700	.57686	200

**Correlations**

		Behavioural Intention	Brand Image	Customer Satisfaction
Pearson Correlation	Behavioural Intention	1.000	.515	.595
	Brand Image	.515	1.000	.533
	Customer Satisfaction	.595	.533	1.000
	Trust	.404	.546	.532
	Perceived Risk	.539	.276	.534
	Perceived Value	.689	.468	.612
Sig. (1-tailed)	Behavioural Intention	.	.000	.000
	Brand Image	.000	.	.000
	Customer Satisfaction	.000	.000	.
	Trust	.000	.000	.000
	Perceived Risk	.000	.000	.000
	Perceived Value	.000	.000	.000
N	Behavioural Intention	200	200	200
	Brand Image	200	200	200
	Customer Satisfaction	200	200	200
	Trust	200	200	200
	Perceived Risk	200	200	200
	Perceived Value	200	200	200

**Correlations**

		Trust	Perceived Risk	Perceived Value
Pearson Correlation	Behavioural Intention	.404	.539	.689
	Brand Image	.546	.276	.468
	Customer Satisfaction	.532	.534	.612
	Trust	1.000	.374	.435
	Perceived Risk	.374	1.000	.554
	Perceived Value	.435	.554	1.000
Sig. (1-tailed)	Behavioural Intention	.000	.000	.000
	Brand Image	.000	.000	.000
	Customer Satisfaction	.000	.000	.000
	Trust	.	.000	.000
	Perceived Risk	.000	.	.000
	Perceived Value	.000	.000	.
N	Behavioural Intention	200	200	200
	Brand Image	200	200	200
	Customer Satisfaction	200	200	200
	Trust	200	200	200
	Perceived Risk	200	200	200
	Perceived Value	200	200	200

**Model Summary<sup>b</sup>**

Model	Change Statistics			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.753 <sup>a</sup>	.567	.556	.42925

a. Predictors: (Constant), Perceived Value, Trust, Perceived Risk, Brand Image, Customer Satisfaction

b. Dependent Variable: Behavioural Intention

**Model Summary<sup>b</sup>**

Model	Change Statistics					Durbin-Watson
	R Square Change	F Change	df1	df2	Sig. F Change	
1	.567	50.772	5	194	.000	1.914

b. Dependent Variable: Behavioural Intention

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.776	5	9.355	50.772	.000 <sup>a</sup>
	Residual	35.746	194	.184		
	Total	82.522	199			

a. Predictors: (Constant), Perceived Value, Trust, Perceived Risk, Brand Image, Customer Satisfaction

b. Dependent Variable: Behavioural Intention

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-.190	.260		-.732	.465
Brand Image	.260	.075	.212	3.457	.001
Customer Satisfaction	.173	.077	.154	2.245	.026
Trust	-.045	.066	-.041	-.674	.501
Perceived Risk	.185	.060	.186	3.100	.002
Perceived Value	.457	.073	.409	6.262	.000

a. Dependent Variable: Behavioural Intention

**Coefficients<sup>a</sup>**

Model	95.0% Confidence Interval for B		Correlations		
	Lower Bound	Upper Bound	Zero-order	Partial	Part
1 (Constant)	-.703	.322			
Brand Image	.112	.408	.515	.241	.163
Customer Satisfaction	.021	.325	.595	.159	.106
Trust	-.176	.086	.404	-.048	-.032
Perceived Risk	.067	.302	.539	.217	.146
Perceived Value	.313	.601	.689	.410	.296

a. Dependent Variable: Behavioural Intention

Causal Mediation Test

**Path C**

**Descriptive Statistics**

	Mean	Std. Deviation	N
Behavioural Intention	3.5913	.64396	200
Brand Image	3.8413	.52583	200

**Correlations**

		Behavioural Intention	Brand Image
Pearson Correlation	Behavioural Intention	1.000	.515
	Brand Image	.515	1.000
Sig. (1-tailed)	Behavioural Intention	.	.000
	Brand Image	.000	.
N	Behavioural Intention	200	200
	Brand Image	200	200

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.515 <sup>a</sup>	.265	.262	.55335

a. Predictors: (Constant), Brand Image

b. Dependent Variable: Behavioural Intention

**Model Summary<sup>b</sup>**

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.265	71.510	1	198	.000

b. Dependent Variable: Behavioural Intention

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.896	1	21.896	71.510	.000 <sup>a</sup>
	Residual	60.626	198	.306		
	Total	82.522	199			

a. Predictors: (Constant), Brand Image

b. Dependent Variable: Behavioural Intention

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.168	.289		4.039	.000
	Brand Image	.631	.075	.515	8.456	.000

a. Dependent Variable: Behavioural Intention

**Coefficients<sup>a</sup>**

Model	Correlations			Collinearity Statistics	
	Zero-order	Partial	Part	Tolerance	VIF
1 Brand Image	.515	.515	.515	1.000	1.000

a. Dependent Variable: Behavioural Intention

**Path A, B and C'**

**Correlations**

		Brand Image	Perceived Value	Behavioural Intention
Brand Image	Pearson Correlation	1	.468**	.515**
	Sig. (2-tailed)		.000	.000
	N	200	200	200
Perceived Value	Pearson Correlation	.468**	1	.689**
	Sig. (2-tailed)	.000		.000
	N	200	200	200
Behavioural Intention	Pearson Correlation	.515**	.689**	1
	Sig. (2-tailed)	.000	.000	
	N	200	200	200

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 <sup>a</sup>	.522	.517	.44767

a. Predictors: (Constant), Perceived Value, Brand Image

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.042	2	21.521	107.389	.000 <sup>a</sup>
	Residual	39.480	197	.200		
	Total	82.522	199			

a. Predictors: (Constant), Perceived Value, Brand Image

b. Dependent Variable: Behavioural Intention

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.083	.257		.324	.746
	Brand Image	.302	.068	.247	4.424	.000
	Perceived Value	.640	.062	.573	10.272	.000

a. Dependent Variable: Behavioural Intention