CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter will begin with an overview on the background of the study. It will continue with objectives and significance of the study. The objectives assist researchers to achieve the goals of the study. This is finally end up with an elaboration on the scope of the study and organization of report.

1.1 Background of Study

Activities concerning environmental issues have started many years ago with the launch of Earth Day on 1970 in U.S. According to the United States Environment Protection Agency, the aim of the Earth Day is to encourage people pay attention to the environment and to consider how different activities performed by human have degraded the environment and also think of the necessary steps to prevent such environmental issues.

As mentioned by Ramlogan (1997), environmental problems includes ozone layer depletion, global warming, pollution of river and sea, as well as noise and light. As a result, the growth concerning environmental issues can be noticed as many studies indicated that in the U.S. and European countries consumers are getting more environmentally conscious within the past decade (Curlo, 1999). This is also true about the Asian countries (Harris, 2006).

According to Tobler, Visschers & Siegrist (2011), consumption of food has been identified as a behavior which has significant environmental impact, since production of food, consumption and transport would affect the environment through contributing to the problems including, greenhouse gas production, soil erosion, and excess wastage. Therefore, understanding consumers' beliefs and behaviors have gained importance due to environmental impacts of these decisions.

Generally, according to (Carlsson- Kanyama, 1998; Jungbluth, 2000; Tukker & Jansen, 2006) the estimates showed that food consumption has been caused about 20% to 30% of the entire impact on the environment in the West which is considered as a significant impact. As a result, consumers' decision makings regarding the food choice would be considered as environmentally significant decision.

Similarly, as mentioned by (Laroche et al., 2001), purchasing behaviors of consumers have a significant relation with environmental problems and studies have revealed the fact about increasing number of consumers' who are willing to buy and to pay more for products which are environmentally friendly.

1.2 Food Industry in Malaysia

Throughout the past decades, Malaysia's food industry has gone through important changes. Malaysia is a multicultural country consisting three races namely Malays, Chinese and Indians. This has led to an extensive variety of processed foods that produced to meet the needs and preferences of diverse ethnic groups. Therefore, differences in demographic

and economic status have also influenced directly and indirectly the food industry in Malaysia in response to wide range of production and different market segments.

On the other hand, the gradual changes in consumers' lifestyles, needs, life standards, additionally higher buying power and also technological improvement in marketing and agriculture have resulted in expansion of demand for healthy and convenience food products. And also increasing of consumers' awareness about quality and healthiness of food has resulted in growing demand for more organic and green food. (Teng, Rezai, Mohamed, & Shamsudin, 2011).

The current study's focus is to recognize the conditions that need to be presented to motivate changes in routine and often established consumption habits of consumers by emphasizing on the importance of the individual's overall attitudes, perceptions and willingness towards these changes.

As there are very limited studies on green food consumption especially in the context of developing countries like Malaysia, the aim of this study is to investigate consumers' beliefs about environmental friendly behaviors and their willingness to adopt ecological food consumption behaviors within the context of Malaysia and Singapore.

In addition, the role of different motives influencing consumers' choice of green food will be also investigated. The effect of green marketing strategies on consumers' willingness for adoption of green food consumption will be examined which could contribute green marketers to use the findings of the study to better target their customers.

Finally, the differences between Malaysian and Singaporean consumers in terms of their choices and decisions regarding green consumption will be investigated by shedding light on consumers' demographic differences within the two countries.

This study is a comparative one between Malaysia and Singapore, as Malaysia is considered as a developing country while according to International Monetary Fund (IMF), Singapore is among 35 advanced economies in the world. Thus, the aim is to understand about the effect of demographic differences between Malaysian and Singaporean consumers on their choice of ecological food consumption.

1.3 Statement of the Problem

Although many studies have been done on the use of functional and organic food consumption, to the best knowledge of the researcher a few studies have been done considering consumers beliefs on consumption of ecological food, their impact on the environment and consumers' willingness to adopt such behaviors.

There are two studies in similar area which were done in two developed countries namely Australia and Switzerland. The former study was done on Australian consumers' food-related environmental beliefs and behaviors (2005) and the later one was done on Consumers' willingness to adopt ecological food consumption behaviors in Switzerland (2011). In Malaysia one study has been done on Consumers' intention to purchase green foods in 2011, in which the objective was only to determine the effect of demographic on consumer green food purchase.

Consequently, this study is different from other studies as the aim is to investigate the impact of consumers' beliefs and perception about environmental friendly behaviors on their willingness to consume food in a manner which is ecologically friendly. The study also examines how diverse motives for eating green and attitudes relating to food consumption influence willingness of consumers to reduce consuming of meat and to increase using seasonal and regional fruits and vegetables.

The study will also investigate on the effects of green marketing strategies including eco-branding, eco labels and advertisement on consumers' intention and willingness to consume green food.

And finally, it should be pointed out that the current study will be a comparative study between Malaysian and Singaporean consumers. Accordingly, the impact of demographic issues will be investigated to find out about the differences between Malaysian and Singaporean consumers regarding their concern about environmental problems and their willingness to change their conventional food consumption behaviors towards more eco-friendly manner.

Marketing strategies will be also examined to understand about their impact on encouraging and motivating people to initiate more consumption of green food. This would be also important for the marketers to know how they would be able to target this segment as it is a growing and promising segment in the market. Further comparison between Malaysian and Singaporean consumers will be also an important issue for those companies or marketers who wish to market their products outside of Malaysia to other more developed and advanced economies in the region like Singapore.

Thus, one of the objectives of the study is to find out about the differences between Malaysian and Singaporean consumers in terms of green food consumption, although Nam, Jo and Lee (2010), believed that similar consumption cultures can be seen in the countries locating in Southeast Asia including Thailand, Cambodia, Indonesia, Malaysia, India, Bangladesh, Burma, Laos, Vietnam, and Philippines, as all having tropical weather.

1.4 Significance of the Study

Most of the studies regarding environmental issues, green consumers and green marketing have been done in the context of developed countries, especially in western countries. Thus, studies on environmentalism in developing countries lack information necessary for the marketers. Such studies are conspicuously lack in Malaysian context especially in its comparison with Singapore. It seems that there is no continuous effort taken by Malaysians and Singaporean to monitor such trend in these countries. Consequently, a survey on Malaysian and Singaporean consumers will be carried out to ascertain the level of their willingness to behave in an ecofriendly manner through their green food purchase decisions.

It is foreseeable that the results of the study could provide useful insight to the marketers who are willing to exploit these environmental issues in their marketing strategies to tap this growing segment of environmental concern consumers within developing countries especially in Malaysia and Singapore which is a more advanced economy. Unfortunately, green marketing has not been really initiated in these countries although a profitable niche market for green products especially in food industry is readily available.

Local marketers can be also benefit from the results through gaining information about this untouched niche market since through understanding of the needs and preferences of green consumers, these marketers would be assured of a competitive advantage. Furthermore; the study will provide necessary insights and recommendations on how to formulate green marketing strategies in targeting different ethnic groups namely Malays, Chinese and Indians, within both countries considering the demographic differences which will be examined throughout this research.

In addition to what mentioned about the marketers, the result of the study would be also beneficial to the environmental and non-environmental organizations within these countries. Since the results of the study will provide useful information for these organizations regarding consumers' level of environmental concerns, their willingness to behave in ecofriendly manner and their green purchase decisions within food industry.

It would be to the benefit of environmental organizations as they seek to analyze and protect environment against degradation from human actions. Therefore, as food consumption is considered as a significant issue and has a great impact on the environment, the findings of the current study can give useful insights about beliefs and perception of Malaysian and Singaporean consumers regarding environmental issues and also their intention to initiate actions towards consumption of green food which ultimately would be beneficial for the protecting the environment.

In addition, the findings of the study could be also used by non-environmental organizations such as schools, universities and food industry. For instance, members of Eco-Schools Program in Malaysia can use the findings about the willingness of students to

adopt ecological and green food consumption behaviors and about how to encourage students to consume green food as their focus is on nurturing students' environmental leadership.

It can also be used by National Eco-Schools Committee members which includes partners from universities ministries, government agencies, and organizations including Ministry of Education, Ministry of Natural Resources and Environment, Department of Environment, Yayasan Anak Warisan Alam Malaysia, Natural Resources and Environment Board Sarawak, Sabah Environmental Education Network, University Malaya, University Kebangsaan Malaysia, University Sains Malaysia, Global Environment Centre, Friends of Kota Damansara, Malaysian Nature Society, and Scout for Nature.

Furthermore, food industry such as food manufacturer can also benefit from the findings as they gain knowledge about Malaysian and Singaporean consumers' needs and preferences.

The study will also increase the environmental awareness of both Malaysians and Singaporeans regarding the concept of ecological food, and how to change their conventional purchase decisions towards green and ecofriendly food consumption behaviors.

For instance, use of green marketing tools for instance eco-brand, eco-label, and environmental advertisement can provide better perception and awareness about green products attributes and characteristics for consumers and subsequently guiding them into purchasing environmentally-friendly products. Thus, purchasing of such green product will contribute improvement to consumers' lives as well as to the environment. In other words,

using these tools by marketers can have important influence to switch consumer's actual buying behaviors towards purchasing those products that are environmental friendly, thus, reduce the negative impact of harmful products on the environment and on people lives.

Finally, the study may serve as a reference for other research on environmental subjects in Malaysia and Singapore.

1.5 Research Objectives of the Study

Purpose of the current study is to provide an insight into the profile of the customers who are willing to adopt food consumption in an ecofriendly manner. The study will use consumer willingness to adopt ecological food consumption behaviors as a dependent variable; while taking into account consumers' beliefs and perception about environmental friendly activities, influential motives as well as effective marketing strategies which induce consumers to behave in an ecofriendly manner as independent variables. As the study is exploratory in nature it specifically includes the following objectives:

1. To investigate consumers' perception on environmentally friendly activities
2. To examine consumer's willingness to consume food in an environmentally friendly way
3. To find out about the motives influencing consumer's willingness to adopt green food consumption behaviors
4. To examine if green marketing strategies can induce consumers' willingness to consume food in ecofriendly manner
5. To explore how consumers differ in terms of demographic characteristics across their willingness for adoption of ecological food consumption behaviors in Malaysia and Singapore

1.6 Scope of the Study

A total of 550 Malaysian and Singaporean Consumers from three ethnics group namely Malay, Chinese and Indian adult above age 20 are considered to participate in this study. The Majority of the targeted respondents were female because women are still family members who take care on the household matters and make food purchasing and consumption decisions. The survey will be distributed to targeted respondents from different education, age, and income level as well. The random sampling method will be adopted. The area of coverage of this study is Singapore as well as Klang Valley in Malaysia. In order to obtain a diverse sample, participants will be approached in shopping centers, restaurants, universities and other public places.

1.7 Organization of the Study

The Study is divided into five chapters. Chapter one briefly describes on the background of the study and food industry in Malaysia. In addition it includes problem statement, objectives and significance of the study.

Chapter two includes review of the related literature on concept of green food, ecological food consumption and its environmental impact, consumers perception on environmental issues, consumer willingness to consume food in ecofriendly manner, changes in consumption behaviors, non-environmental benefits associated with ecological food consumption patterns, motives for food consumption in an environmentally friendly way and finally the effect of green marketing strategies on consumers' willingness to adopt green food consumption behaviors.

Chapter three includes research methodology of the study. The chapter begins with the discussion on research hypotheses. It is then followed by selection of measures, sampling design, data collection procedure and data analysis techniques.

Chapter Four define the overall findings of the study as well as the analysis of the research findings. It begins with the presentation of the respondents' demographic profiles which is then followed by analyses of the employed measures by using test of normality, reliability test, factor analysis, regression analysis and ANOVA analysis for hypotheses testing.

Chapter Five discusses about the major findings, summary and conclusion of the study which follows by limitation of the study and recommendations for the future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This Chapter begins with the discussion and review of the previous related literature on green food and ecological food consumption and its impact on environment, consumers' perception on environmental friendly activities and environmental benefits of green food consumption patterns and their willingness to behave in an ecofriendly manner. It will continue by considering the effect of both environmental and non-environmental motives on green food consumption patterns. Consumers' demographic characteristic as well as the influence of green marketing strategies on persuading consumer to consume food in ecofriendly manner will be also elaborated at the end of this chapter.

2.1 Green Food Concept

Green foods have good quality, are safe for consumption, are concerned with ethical issues like animal treatment and are also nutritious foods that are produced according to standards of sustainable development (Liu, 2003). Green foods are getting known because of their characteristics as being environmental friendliness, and healthier and safer to use.

Thus, the numbers of consumers interested in green food consumption are gradually growing in the world. According to Soonthorsmai (2007), green consumers are those who are aware and concern about the environmental problems and make effort to mitigate these problems. Green consumers are ready to change their purchasing as well as their

consumption behaviors towards environmental friendly ways and intend to pay more for these products (Teng, et. al, 2011). Similarly, Ottman (1992) claimed that consumers buy green products when their main needs and preferences match with the quality, availability, convenience, performance, and affordability of the products.

Growth in the number of green consumers is obvious through observing the increasing number of environmentally friendly food products which are being sold in markets (Teng, et al., 2011). However, the concept of green or ecological food can become more popular and known for Malaysian and Singaporean consumers if the society receive more knowledge and becomes more aware regarding food safety, health, environment and animal welfare.

2.2 Ecological Food Consumption and Environmental Impact

Generally base on the Organization for Economic Cooperation and Development (OECD, 2009), consumption of green products will contribute to prevent, decrease, the harmful environmental influences on air, soil and water, and; therefore, they can resolve the problems which relate to the noise, waste, and general harm to the ecology (Lin and Huang, 2011).

Considering the consequences of sustainable consumption on environment, there are considerable number of researches done on recycling and packaging (Ebreo, Hershey, & Vining, 1999; Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Vining & Ebreo, 1992). Though packaging and recycling issues are important, other ecologically significant product features need to be considered as well.

Recently, life cycle assessments are considered as pertinent instrument for assessing the influence of food products on resource as well as on energy use and the destructive emissions related to food production, transportation, packaging, and consumption. As a result, agricultural activities, transportation, and conservation methods are among other important product aspects which need to be considered thoroughly (Jungbluth, Tietje, & Scholz, 2000).

According to Tobler, et al. (2011), food consumption has been identified as an important behavior relating to environment, since food production, consumption as well as transportation would affect the environment through contributing to the problems including, gas emissions from greenhouses, land erosion, and excess wastage.

Considering the impact of food production and consumption on the environment especially on the use of resources, Elferink and Moll (2008) claimed that the food production and consumption require large amounts of resources including energy, water, and land, which causes different problems such as emission of greenhouse gases, wastes and use of pesticides which is harmful for the environment. Recently, more attention is being paid to the food wastes as it has identified as a cause of major problems including social, nutritional, and environmental (Sobal and Nelson 2003).

As a result, consumers' decision makings regarding the choice of food would be considered as significant environmental decision. For instance, greenhouse production of vegetables within greenhouses results in more environmental problems in using energy and resources comparing to products which are produced in open-air, furthermore; the influence of

transporting vegetables to Europe by ship is eight times more negative than the impact of vegetables grown locally (Jungbluth, Tietje, & Scholz, 2000).

Consequently, it can be assumed that the food products which have been produced organically, which are seasonal, fresh, and local food products cause less environmental problems than goods which were grown conventionally, wrapped or frozen s, or goods that transported from long distances (Tanner, Kaiser, & Kast, 2004).

2.3 Consumers Perception on Environmental Issues

The focuses on environmental concern and responsibility with natural systems have grown largely in most societies and research has indicated that people are concerned about the environment (Bang, Ellinger, Hadjimarcou, & Traichal, 2000; Fien, Ai, Yencken, Sykes, & Treagust, 2002; Mertig & Dunlap, 200, Juwaheer, Pudaruth, & Noyaux, 2012).

Citizens and companies all over the world seem to be much more concern about the environmental problems than 30 years ago (Papadopoulos, Karagouni, Trigkas, and Platogianni, 2010). International research indicated that consumers were more worry about the environment and had steadily changed their behavior (Arbuthnot, 1977; Simon, 1992). Therefore, a new market for green or sustainable products has emerged, and is being more reinforced by active consumers, because through this way they contribute to the protection of the environment (Cornwell and Schwepker, 1995; Cleveland, Kalamas and Laroche, 2005).

Many studies evidenced that in the US and Western countries people are becoming more environmentally concern within past decade (Curlo, 1999). In Asian countries people are

also increasingly becoming conscious to environmental problems (Harris, 2006). According to Bonini and Oppenheim (2008), 33 percent of customers would pay premium for green products, 54 percent claimed that they care about the environment and were willing to alleviate the climate changes. A study in Australia also showed 62% of adults claimed that they were concern about the environment.

There are debates about whether consumers' beliefs and perceptions have positive relation with their green purchasing behavior. Different studies indicate various results regarding the issue.

Considering the importance of consumers beliefs and attitudes, Cohen (1964), claimed that attitudes are evaluative predisposition and play important roles on the way people act towards others as well as the plans they undertake. Thus, attitudes are determinants of individuals' behaviors in their daily lives. The Theory of Planned Behavior proposed by Ajzen's (1991) demonstrates that the beliefs about the environment shape attitudes towards behavior, then this will be translated into buying intentions. Previous research has also shown that those who are interested in matters regarding environment, avoid purchasing excellent technical products because they are conscious of the damaging consequences in the environment (Peattie, 1995, 1999; Bernstein, 1992).

Several studies also confirmed that consumers with higher environmental concern show this concern as being reflected in changes in their consumption-related perceptions and behaviors (Gamba and Oskamp, 1994; Allen and Ferrand, 1999) thus, those consumers that are highly concern about environmental issues are more agree with all of the consumption

values that relate to green products than for consumers with low environmental concerns (Lin and Huang, 2011).

Similar results have been obtained by Teng et al., (2011) which pointed out that consumers with high concerns about environmental issues were 1.625 times more intend to purchase green foods than those who do not think that green food has impact on the environment.

On the other hand, Pickett-Baker and Ozaki (2008) have argued that people who are conscious and concern on environment do not essentially behave in an ecological manner. Therefore, consumers purchasing decisions relating to environmental issues is highly debatable as it is suspected that strong views and claims on environmental issues do not essentially translate to positive and direct actions relating to purchasing decisions of green products and services (Louchran and Kangis, 1994).

Empirical evidence from past studies also has demonstrated that despite pro-environmental attitudes, there are few consumers who have converted these attitudes into consistent green purchasing behavior (Mintel, 2006).

According to what have mentioned previously, producers and marketers of green products would face with a gap between pro-environmental attitudes and consumers' green purchase behavior. Consequently, research in this area has produced inconclusive evidence with diverse outcomes supporting a positive relationship between attitude towards the environment and behavior (Kellgren and Wood, 1986) as well as weak relationships (Rothschild, 1979; Lee and Green, 1991; Tanner and Kast, 2003).

Considering the importance of this issue, the level of information provided has made consumers more aware to environmentally friendly goods, and their consumption patterns which in fact focus on the importance of the environment for the health and well-being of people (Krukaset and Sahachaisaeree 2010). Thus, it is necessary to provide consumers with more information regarding the importance of environmentally friendly products.

Malaysia like other counterparts of the world is also facing with environmental problems such as air pollution from industrial and vehicular emissions, water pollution, wastes as well as deforestation and soil erosion. According to the reports of Department of Environment Malaysia Some case studies have been started mostly in the area of water waste, chemical recycling and energy saving in Malaysia.

Consumers' attitudes for buying green foods are made from their beliefs and their knowledge and awareness about the concept of green foods that they gather during their lives. Consumers' attitude and purchasing habits are being based on external factors such as socio demographic profiles and are being influenced by their knowledge, information and awareness. All these factors make consumers' confidence and trust for buying green foods and will lead them towards having a positive attitude towards these food products. (Teng et al., 2011)

As Lin and Huang (2011) mentioned, previous research on consumers has identifies knowledge as having effect on all phases of consumers' decision making process. Therefore, consumers' awareness is significant to change their habits and behaviors towards more green food consumption.

Griffin, Sobal and Lyson (2009) also declared that with increase of a larger social as well as environmental awareness, people have grown concern about the impact of their dietary lifestyles on other individuals and also on the environment.

Generally, as consumers do not have sufficient knowledge regarding the relevance of different green food consumption patterns to the environment, so there seems to be a need for campaigns to provide information about this topic. Moreover, campaigns providing environmental education should focus more precisely on the impact of meat consumption, heated greenhouse production, and air transportation on the environment and to encourage consumers to consume organic food, and to reinforce consumers' trust in the eco labels (Tobler, et al., 2011).

Although there are several studies on the consumers' choice of organic food, a few researches have been done on the choice of ecological food. The reason may be due to the difficulty of making such choices (Tobler et al., 2011) as several factors should be taken in to consideration such as impact of product life cycle on the environment, therefore; there is a need for making more choices of organic food, reduction of meat consumption or increase of the local food products consumption instead of food that need to be transported by airplanes which all in all contributes to more environmental benefits (Jungbluth et al., 2000).

In everyday life, consumers face with many difficult choices and situations where they need to decide what is beneficial for the environment, to choose a product from a greenhouse which is in the region or a product that is cultivated in open air area, but imported from

overseas since food transportation through long distances also increases energy expenditure and greenhouse gas emissions (Jones, 2002).

Although packaging plays role on affecting the environment, Jungbluth et al., (2000) believed that food packaging was not significantly influence on the environmental. This is despite the fact that past research mostly indicated consumers overestimated the environmental related impact which were caused by packaging material (Lea & Worsley, 2008; Tobler, Visschers, & Siegrist, 2011) and consumers have less knowledge regarding the environmental impact of meat consumption (Lea & Worsley, 2008; Lea & Worsley, 2003; Povey, Wellens, & Conner, 2001). Therefore, it is necessary to provide consumers with sufficient education and knowledge on this issue, as well as on organic foods.

2.4 Consumer Willingness to Consume Food in Ecofriendly Manner

2.4.1 Changes in Consumption Behaviors

There might be several reasons for people to perform or not perform certain behaviors like environmentally friendly behaviors as peoples' beliefs and attitudes influence their behavior (Ajzen, 1989).

According to Stern, Dietz, Abel, Guagnano, & Kalof (1999), there are different classes of behavior with different environmental impacts; consumer behavior is one of these classes but not all these behaviors being influenced by the same factors (Stern & Oskamp, 1987). Some of these behaviors practice rarely and they are done deliberately while others such as repeated every day products purchase carry out without awareness and are being done somehow automatically.

As a result, where the choice is automatic, it can be guided or controlled by habits. Habits are acts that have become automatic responses to particular cues (Verplanken & Aarts, 1999), and are functional in achieving certain objectives. So, substitutions of habits are not considered as performing a new behavior. It is transition from ones old habit to the new one which will include conscious decision making. Therefore, consumers deliberately decide on their choice of products (Wegner & Bargh, 1998). This means that there should be reasons for consumers to deliberately shift from their old habit i.e. consumption of conventional food to new habits which is use of environmentally friendly products. Accordingly, there are factors that affect consumers to switch from non-ecological products towards ecological alternatives. Research in this area shows different results and debates.

As mentioned by Grankvist & Biel (2001) one important pre-requisite is consumers concern about the environment which results in changing their habits towards purchasing of ecological products. This is while other studies indicated different findings. According to Lea & Worsley (2008), consumers' intension to consume ecological food does not essentially show the ecological impact and although they mostly stated their willingness to consume foods which were produced locally, they were obviously not really willing to decrease consumption of meat and purchase of organic products.

Similarly, the research findings by (Tobler et al., 2011) supported the same idea that consumers stated that purchasing of organic food and reduction of meat consumption were least environmentally useful. The important issue is that there are differences between public perception on environment and their choices in various countries.

Some studies supported this idea, for instance; research in the US showed that in New York City adults mostly had positive views on organic products but they had less knowledge about foods produced locally (Bissonnette & Contento, 2001), while in Minnesota adult consumers supported sustainably produced foods (Robinson & Smith, 2002). Another study which was done in Sweden showed that participants graded the environmental impacts of buying food having eco-label as the second least important comparing to other eight purchase criteria, where food taste has been ranked as most important (Grankvist & Biel, 2001).

Socio-demographic factors like sex, age, education and socioeconomic background might directly affect beliefs, attitudes or behaviors. Research showed that females were more supportive of sustainable food products in comparison to males consumers (Bissonnette & Contento, 2001; Robinson & Smith, 2002) and more willing to eat organic foods (Lockie, Lyons, Lawrence, & Mummery, 2002).

2.5 Non Environmental Benefits Associated with Ecological Food Consumption Patterns

Although consumers have declared about their concerns on environmental issues, it is possible that consumers do not really have knowledge about the environmental influence of food production and consumption as well as their own food choice decisions than the popular issues such as industrial pollution. Consequently, while there are concerns about the environment, it seems that non-environmental factors including health issues, price, and quality and taste of food play more significant role in this regard (Magnusson, Arvola, Hursti, Aberg, & Sjo¨ de´n, 2003).

Different motives can influence consumers' choices of food. In addition to the environmental benefits of choosing ecological food, there are also other reasons which are not related to the environment. According to Tobler et al., (2011) non-environmental benefits of choosing ecological food might be for many consumers more convincing to change their dietary choices than the environmental motive.

Previous research showed that, healthiness, convenience, price as well as sensory appeal were important factors that have influence on consumers' choices of food consumption; however, it seems food products' eco-friendliness do not play the very crucial role in this regard. (Scheibehenne, Miesler, & Todd, 2007; Steptoe, Pollard, & Wardle, 1995; Van Birgelen, Semeijn, & Keicher, 2009). Thus, many consumers may choose ecological food due to non-environmental benefits which are more important to them than environmental factors.

This is while some other studies show conflicting results. For instance the, result of the study by Lin and Huang (2011) indicated that factors like quality and price did not seem to have important influence on choices made by consumer. Similarly, Laroche et al. (2001) have also done some research surveys during the past few years on green consumption, which all verified that people were progressively intend to pay more for green products. Such intension showed that concern on environment and use of green products outweighs the price factor and therefore, the price and quality of green products are not key factors to influence consumer choice behavior.

2.5.1 Motives for Consuming Food in an Environmentally Friendly Manner

There are several types of motives that consumers have when making decision for their food choice. According to the study by Tobler et al., (2011) food products' eco-friendliness, was not considered as significantly influencing consumers choice of food, although the production of feedstock and meat can result in many different environmental impacts. These environmental impacts were mostly because of the feed used by livestock as well as the impacts of cultivating, transporting and processing of feed crops such as grains (Elferink Moll, 2008).

However, use of ecological food can also include non-environmental benefits which have more strong effect on consumers' choices. For instance, seasonal and regional vegetables and fruits might be considered as fresher, since they can be harvested when they are ripe and when there is no need to be transported from long distances and for long time. As findings of previous researches showed mostly consumers believed that food which is produced locally had better taste and quality (Chambers, Lobb, Butler, Harvey, & Traill, 2007). Reduction of consuming meat also can be motivated by health or ethical concerns for animal welfare (Beardsworth & Keil, 1991; Jabs, Devine, & Sobal, 1998).

Similarly findings of the study by (Izmirli & Phillips, 2011) on consuming of animal products by students also indicated that a many of vegetarians claimed they were willing to reduce meat due to health issues while non-vegetarians claimed they were willing to reduce meat consumption for health as well as environmental reasons.

Considering the importance of food healthiness as one of the important factors in food choices, Paquette (2005) mentioned that healthy eating had diverse meanings in different cultures, and it was dynamic and changing over time. Therefore, fruits and vegetables were perceived as healthy food in different studies while the role of meat in healthy eating was vague.

Conflicting ideas can be seen in different studies regarding meat consumption. Some studies showed that people perceived eating more meat as a healthy habit (Pirouznia, 2001) while the findings in other studies indicated that people perceived reducing of meat consumption was healthy (Troiano and Flegal, 1998). Therefore, concerns for health, environmental protection, pesticides, nutritional concerns, as well as improved taste were some of the factors identified in the previous studies.

Among the determinants which influenced reducing of meat consumption, the strongest predictor of respondents' willingness was gender, so women had higher intention to reduce consumption of meat than men (Tobler et al., 2011) and some have already reduced it.

Another important factor was the belief that reducing consumption of meat was better for health, this finding somehow contradicted with the results of the study by Izmirli and Phillips (2011) in which they believed that vegetarians avoid eating meat mainly for health issues, but meat avoidance also motivated by concerns for the environment.

Considering the effect of income on meat reduction different studies showed conflicting results. For instance, the study by Strauss (1984) revealed that meat consumption increased with income and an increase in the prices of meat impacted negatively on a household's

decision to purchase these products. While another study showed that the motive relating to money was not greatly influence on consumers' willingness for meat reduction. Therefore, age, level of education, and health concerns did not significantly influence consumers' intention to decrease meat consumption (Tobler et al. 2011).

Taking into consideration the effect of meat consumption on the environment, mostly studies showed that consumers believed lower meat consumption is the least helpful to the environmental problems (Lee & Worsely, 2008; Tobler et al. 2011) and awareness about the influence of producing and consuming of meat on the environment, was low even between consumers who already believed that actions relating to food were important to help the environment.

According to Tobler, et al. (2011), consuming seasonal and regional food requires minor dietary changes. Although all types of foods can still be consumed public only have to consider and choose the fruits and vegetables that are currently available. Thus, making seasonal and regional choices would be important for the environment as this will reduce the need for production, transportation of food from longer distances. According to Lea & Worsley (2008), consumers rated buying food which are grown locally as very environmentally friendly, and they claimed that they most frequently performed these behaviors.

Considering the effect of gender differences, the results of study indicates that female consumers were more keen to eat less meat and increase consumption of seasonal and locally produced fruits and vegetables. The gender difference was more remarkable regarding meat consumption. (Tobler et al. 2011).

2.6 Demographic Characteristics of Consumers

Efforts to identify consumers who concern about environment i.e. green consumers went back to 1970s. Researches on consumer behavior attempted to determine the characteristics of green consumers and to differentiate it from other consumers.

According to Fraj and Martinez, (2007) ecological consumers believe in self-fulfillment. So, they always make effort for their self-improvement and attend in challenging actions. These people are interested in ecological lifestyle which means being environmentally conscious, selecting and rejecting products which are harmful to environment and are also volunteers for participating in various events which are for protection of environment.

This market segment would certainly accept modifications and are interested in companies which are dedicated to environment and have initiated producing new environmentally friendly products. As a result, to determine the characteristics of green consumers, researchers mostly focus on the demographic issues including age, gender, education and religious beliefs.

According to several studies done on environmental issues, consumers' demographic differences such as age, gender, education have influenced their attitude towards environmentally friendly behaviors as well as their willingness on purchase of green products. Some studies showed significant differences between male and female consumers regarding their attitudes and concerns on the environment issues.

2.6.1 Gender

Berkowitz and Lutterman (1968) as well as Anderson and Cunningham (1972) were pioneers in researching on consumers who had feeling of responsibility in this regards. Therefore, according to their findings highly concern consumers are female, those with higher educational level, pre-middle age and above average economic level. This result were sometimes supported and sometimes rejected by other researchers during the last two decades.

For instance results of the studies by (McIntyre et al. 1993; Banerjee and McKeage, 1994; Tobler, Visschers, & Siegrist, 2011) indicated that females were more ecologically concern than men, although differences between men and women were limited. Similarly, Davidson and Freudenburg, (1996) indicated that totally, females showed higher concern and participate more regularly in various types of green behavior. However, this was not supported in the recent study in the area of ecological and green food consumption (Lee & Worsely, 2005).

2.6.2 Age

Considering the relationship between consumers' environmental attitude and age, the result of some studies revealed a negative association between them. As pointed out by Diamantopoulosa, Schlegelmilchb, Sinkovicsd and Bohlenc (2003), the finding showed that solutions for problems regarding to environment might be seen as threats to the previous social order, such as requiring some essential modification in consumers traditional values, habits, it is reasonable to expect younger consumers to more support

environment and have better acceptance of pro-environmental ideologies comparing to their elders. Therefore, anticipation is to be a negative relationship between age and attitudes on the environmental issues. Different results have been found about the relationship between age and environmentally sensitive behavior.

In the studies which used intentional commitment measures of the behavior, findings showed that there is a negative relation between age and intended behavior (Zeidner and Shechter, 1988), while those used indicators of current behavior have found that green behaviors have highly concerned by older people (Vining and Ebreo, 1990; Scott and Willits, 1994).

The findings of the study by (Lee & Worsely, 2005) also indicated that older people were more environmentally conscious and were more willing to behave in an ecofriendly manner than younger consumers. It can be concluded that such inconsistencies are as a result of lack of resources between younger populations. Even though younger consumers claimed that they would commit more resources to protect the environment in the coming future (Zeidner and Shechter, 1988), but they might not have the needed financial security currently to support environmental movements.

2.6.3 Education

Many studies have investigated about the influence of education on environmental concerns. Samdahl and Robertson (1989) and Arbuthnot and Lingg (1975) reported a significant relationship in their findings and argued that those with higher level of education intended to rank higher on all components of the environmental. It is suggested

that those having higher level of education understand the issues involved better and have higher concern about environmental quality and are more motivated to participate in environmentally responsible behaviors and movements.

Similarly, other researches showed that consumers having higher education level were more conscious and intend to pay for green products (Schwartz & Milller, 1991; Tobler, Visschers, & Siegrist, 2011). These results conflicts with the findings of the study by Tanner, Kaiser & Kast, (2004), which claimed that no education differences were found for ecological food purchase behaviors in a Study done in Swiss.

2.7 The Effect of Green Marketing Strategies on Consumers Green Food Consumption

2.7.1 Green Marketing

Regardless of green attention which was received in 1970s, the idea of green marketing emerged in the late 1980s which meant the first stage of green marketing started in 1980s (Peattie and Crane, 2005). In fact green marketing was an important research topic for at least three decades (Peattie, 1995; Polonsky and Mintu-Wimsatt, 1995; Schlegelmilch et al., 1996; Fuller, 1999; Kalafatis et al., 1999; Hartmann et al., 2005, Rahbar and Abdul Wahid, 2011). As a result, with growing global concern on the environmental issues, green marketing has become an important issue (Stafford, 2003; Ottman et al., 2006).

Green marketing is a set of marketing activities on the products or services which are based on the products environmental performance (Charter and Polonsky, 1999). But according to Mintel's (1995) only a very minor increase in the number of green consumers can be noticed since the year 1990. So there is a gap between concern and the actual purchasing.

According to McKinsey report in the year 2007, 87% of consumers worried about the environment and the social impact of the products they consumed (Bonini and Oppenheim, 2008). As a result, consumers showed their interest in adopting green consumption behaviors however the actual green purchasing was far lower than what was said.

Although there are considerable literature on green marketing and consumer buying behavior available in the world, there is limited research on green marketing strategies and its impact on green consumer purchasing patterns in the context of developing countries. Therefore, the aim of the current study is to fill the gap in the existing literature relating to both green marketing strategies and green consumer purchasing behaviors by choosing Malaysian and Singaporean consumers. Thus, the results of this study will give a new insight to the results of previous studies on green marketing and green consumer purchasing behavior in Malaysia and Singapore.

Now a day's, marketplace is gradually becoming more attractive for marketers of green products. Many consumers claimed about their intension and willingness to pay a premium price for purchasing green products (Wu¨stenhagen, 1998; Vlosky et al., 1999; Veisten, 2007). Current studies showed that 93 per cent of consumers claimed they have participated in fabulous efforts for the environment sustainability (Hartmann Group, 2007).

According to Peattie (1995) and Welford (2000) green marketing is considered as the management process that recognizes, anticipates and pleases the needs and preferences of customers' and the society through profitable and sustainable ways. As a result, corporations will have to find solutions to environmental challenges through the use of their effective marketing strategies to develop ecologically products which are safer, which have

recyclable and biodegradable packaging, which are better pollutions controls and more energy-efficient operations to be able to achieve competitive advantage over the rivals and to remain competitive (Czinkota and Ronkainen, 1992; Richards, 1994; Kotler and Armstrong, 1995).

2.7.2 Consumers' Perception on Eco-labels, Eco-brands and Green Advertisement

2.7.2.1 The Effect of Eco-label on Consumer Green Food Consumption

As mentioned by Thorgersen (2002) and Rashid (2009), eco-labels were appreciated as an input to purchase result. In fact eco-labels are considered as significant factor which influence consumers in their purchasing decisions. Though, research in this area has also revealed that consumers expressed confusion about various green terminologies used on product labels (Casewell and Modjuszka, 1996; Wessells, Johnston, and Donath 1999). This is while; D'Souza Taghian, Lamb, and Peretiatkos (2006) confirmed that eco-labeling on products was an effective way to communicate the specific aspects and benefits of the product to customers which also showed the safety of the product.

Furthermore, consumers have claimed about lack of trust and confusion over the diversity of government, companies and third-party eco-symbols on products (Terrachoice Environmental Marketing, 2009). Mostly consumers' confusion was due to the increasing numbers of companies developing their own branded labels in order to differentiate themselves in the market.

Thus, there is a need for clearer communication about consumer benefits on green products (Pickett-Baker and Ozaki, 2008). The recent State of Green Business Forum (2010)

reported that green information is necessary to be available in an easy and understandable manner at the point of purchase (Mazur, 2010).

Considering the effectiveness of eco-labels on consumer decisions for purchasing green products, some studies indicate that eco-label could positively influence green purchasing while some other studies showed conflicting results. The study by Nik Abdul Rashid's (2009) showed that awareness of eco-label had positive effect on knowledge of green product and consumer's willingness to purchase. However, some other studies indicated that although eco-labels were recognized by some consumers but this did not automatically lead them to green purchasing decisions (Leire and Thidell, 2005).

2.7.2.2 The Effect of Eco-brands on Consumer Green Food Consumption

According to First and Khetriwal (2008), the concept of green branding is almost unexplored by green marketers. Yet, several studies demonstrated that the growing environmental awareness of consumers have encouraged them to be more inclined towards brands that seemed to be environmental friendly (Eagly and Kulesa, 1997; Swenson and Wells, 1997).

Brands can change consumer attitudes to greener consumption (Travis, 2000; Pickett-Baker and Ozaki, 2008). Likewise, Ottman (1998) has stated affective marketing has the power to shift passive green consumers who are keen to pay premium prices for environmental products to greener consumption patterns.

Effective green positioning involves brand communication and differentiation based on functional attributes and emotional benefits (Kotler, 1995; Hartmann et al., 2005). Green

branding communication strategies should be aimed at associating the brand with pleasant, emotional image of nature, simultaneously with presenting information on environmentally product characteristics.

As mentioned by Rose (2002) some manufacturing companies could not influence consumer choice towards green products, but they could shape green consumption patterns in the way the products were being offered and marketed.

According to Pickett et al. (2008), if green brand attributes are not well communicated, environmentally sustainable products will not be commercially successful. Similarly, other researchers have suggested that green positioning is an important element in the success of green branding strategies (Coddington, 1993; Meffert and Kirchgeorg, 1993).

A car brand, for example, may be considered environmentally sound if the models cause significantly lower emissions than competitors. Several studies have addressed the value perception of selected environmental product attributes (Wustenhagen and Bilharz,, 2006) and earlier research in western countries supported that consumers had positive green perceptions on eco-branded products such as Body Shop and Green Energy in the USA and Germany (Wustenhagen and Bilharz, 2006).

However, several studies have shown that consumers tended to have a negative response towards green products due to a perceived trade-off between functional performance of the brand and its effects on the environment (Schlegelmilch et al., 1996; Fuller, 1999). Indeed, the significant factor motivating consumers to change actual purchase behavior to buy eco-friendly products was emotional brand benefits (Hartmann et al., 2005).

2.7.2.3 The Effect of Green Advertisement on Consumer Green Food Consumption

With a higher awareness of consumer regarding environmental issues, firms initiated to adopt green strategies and started making environmental statements in their advertising campaigns with the goal of achieving competitive advantage over their rivals (Ginsberg and Bloom, 2004). The objective of green advertisements is to make influence on consumers' purchase decisions through encouraging them to buy products which are not harmful to environment and to direct their attention to the positive consequences of their purchasing decisions, although the amount of environmental advertisements success is debatable.

According to Pickett-Baker and Ozaki (2008) consumers mostly cannot identify greener products except for cleaning ones. The reason is that most green message labels cannot make an impression in the minds of customers (Green Biz Staff, 2009). Therefore, green communication is a major area of weakness for green marketers and they need to focus more on the issue.

Carlson et al. (1993) have acknowledged rise in environmental advertising accompanied by increase of consumer interest in the environment. Although, Kilbourne (1995) argued about the low credibility of green advertisements, Mathur and Mathur (2000) stated that consumers were more positive towards environmental friendly products due to the fact that environmental messages in advertisements are more credible.

Moreover, D'Souza, C., Taghian, M., Lamb, P. and Peretiatkos (2006) believed that marketers are responsible to provide customers with sufficient environmental information

as customers seek more concrete information about the product characteristics from advertisements to help and guide them in their purchasing decision (Chan, 2004).

Although studies indicated about the positive relationship between advertisement and consumers environmental attitudes and green purchasing decisions, there are some conflicting results in this regards. For instance Pooley and O'Connor (2000) argued that providing information on environmental issues does not necessarily encourage positive environmental attitudes but the emotional content in advertisements can increase customers' attention towards these advertisements (Hawkins et al., 1998). For example advertisers insert emotion elements in advertisements with the hope that consumers feel the emotions which will move them towards purchasing the products although there are no guarantees that the viewing audience actually feels the intended emotion associated with the appeal.

As claimed by Chase and Smith (1992), environmental messages which were included in advertisements as well as product labeling were sometimes affect purchasing decisions of 70% of the respondents. In their study, about half of the respondents stated that they paid less attention to such messages because of excess usage, and most respondents indicated that environmental advertisements were not credible.

Thus, marketers should emphasize the ecological knowledge in their organizations, their products offerings and their advertising campaigns (Mendleson, 1994) to be able to change consumer purchasing behaviors towards more green products.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter will illustrate on the methodology of the study. Research hypotheses are presented briefly at the beginning of the chapter. The theoretical framework, research instrument and sampling technique will be elaborated along with data collection procedure. This will follow by the measurement of constructs. Finally, data analysis techniques including Reliability Analysis, Factor Analysis, Regression Analysis and ANOVA test will be discussed.

3.1 Research Hypotheses

Based on the discussions in the second chapter and according to the research objectives of the study the following hypotheses have been developed to examine the relationship between variables.

H1: There is a significant relationship between Malaysian and Singaporean consumers' perception about the environmental friendly behaviors and their willingness to adopt ecological food consumption behaviors.

H2a: Motives for meat reduction has significant effect on consumers' willingness to consume ecological food in Malaysia/ Singapore

H2b: Motives for increasing consumption of seasonal and regional vegetables and fruits has significant effect on consumers' willingness to consume ecological food in Malaysia/ Singapore

H3: Consumers' perception on green marketing strategies has significant effect on their willingness to adopt ecological food consumption behaviors in Malaysia/ Singapore

H3a: Consumers' perception on eco-label has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

H3b: Consumers' perception on eco-brand has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

H3c: Consumers' perception on green advertisements has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

H4a: There is a significant difference between consumers' gender and their willingness to adopt ecological food consumption behaviors in Malaysia

H4b: There is a significant difference between consumers' genders and their willingness to adopt ecological food consumption behaviors in Singapore

H5a: There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Malaysia

H5b: There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Singapore

H6a: There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Malaysia

H6b: There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Singapore

H7: There is a significant difference between consumers with different religions and their willingness to adopt ecological food consumption behaviors in Malaysia/Singapore.

3.2 Theoretical Framework

The Theory of Reasoned Action (TRA) by (Azjen and Fishbein, 1992) was selected for the current study due to its achievements in examining a diversity of environmentally related behaviors and its compatibility with new studies (Eagly & Chaiken, 1993). The theory of reasoned action has been broadly used in research in social psychology in order to explore and predict the motivational impacts on an extensive variation of behaviors (Madden, Ellen, & Ajzen, 1992).

The TRA contains attitudes that determine intention on behaviors which leads to behavior. In fact, attitudes on a behavior measure a person's evaluation of that specific behavior. These attitudes are determined by beliefs of a person's on the consequences which results

from the performance of that behavior and the response of the person to those consequences. The TRA suggests when person's attitudes toward a behavior become more favorable, his/her intention for doing that behavior will increase.

In this study the theoretical framework has been developed which consists of the independent variables (IV); including consumers' perception on environmentally friendly activities, motives influencing reduction of meat consumption and increase of use of seasonal fruits and vegetables and green marketing strategies as well as dependent variable which is consumers' willingness to adopt ecological food consumption behaviors. The research framework is shown in Figure 3.1.

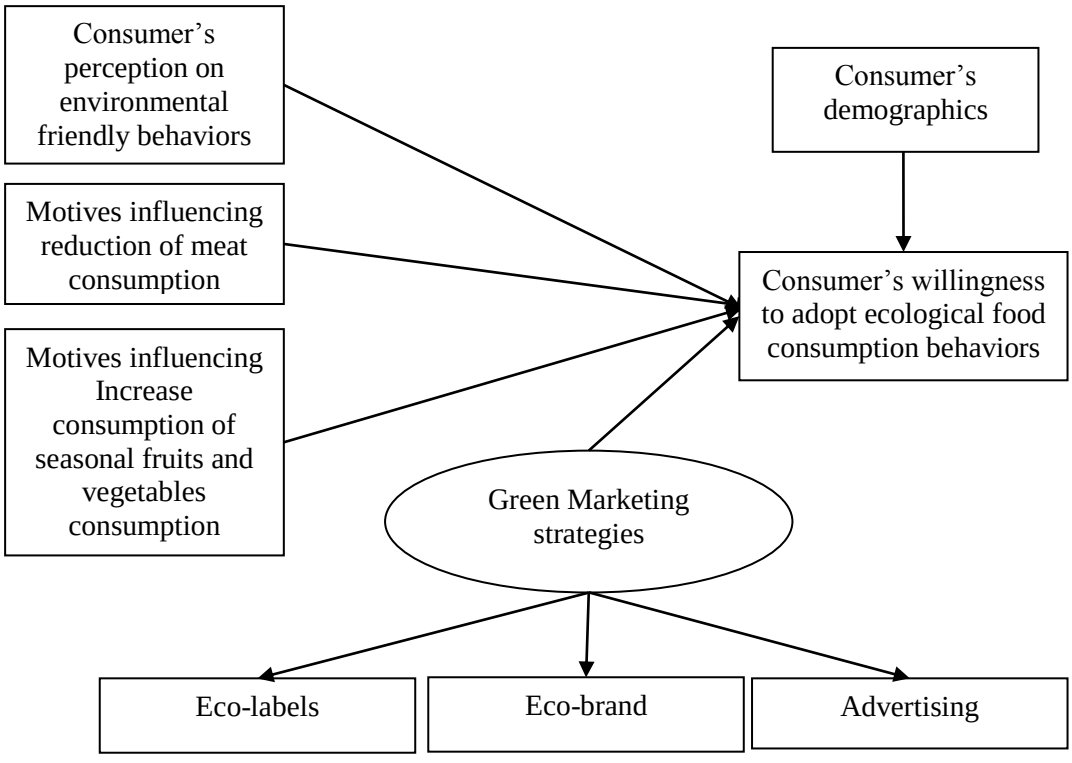

Figure 3.1: Research Framework

3.3 Selection of Measures

Items used to measure the constructs were adopted from previous studies. The questions regarding consumers perception on environmentally friendly behaviors and consumers' willingness to adopt ecological food consumption were taken from Tobler, Visschers, & Siegrist (2011), and Lea, & Worsley (2008). Questions on motives were taken from Tobler, Visschers, & Siegrist (2011) and questions on green marketing techniques were adopted from Juwaheer, Pudaruth, Noyaux (2012).

3.4 Research Instrument

The survey questionnaire consisted of 6 pages (Appendix A) used to collect data from respondents both in Malaysia and in Singapore. Briefly the structure of questionnaire is comprised of two main parts. The first part is Respondent Profile which capture respondents demographic information including their age, gender, nationality, ethnic groups, education income, etc. The second part includes four sections.

Section A consists of eight questions on consumers' perception on environmental friendly behaviors, which includes questions regarding the impact of green food consumption on the environment as well as other ecofriendly activities such as their intention to participate in environmental and green movements.

Section B includes eight questions on motives affecting meat reduction and increasing consumption of seasonal and regional vegetables and fruits. From which some are environmental motives and some are other motives such as health or taste.

Section C consists of eight questions on consumers' willingness to adopt ecological food consumption behaviors such as their willingness to reduce consumption of meat or to avoid purchasing food products imported by airplanes.

Finally section D includes nineteen questions on green marketing techniques including three dimensions of eco labels, eco brands and advertising which can affect consumers' willingness and intention to consume green food.

The initial questionnaire was pretested with approximately frothy five respondents, and slight revisions were made to the questionnaire according to respondents' feedback and comments. The revision included clearer instruction.

3.5 Sampling Design

The respondents were Malaysian and Singaporean adults above age 20. The criteria was considered robust as it included wide range of consumer segments who had certain maturity and were able to select the choices according to their attitudes and beliefs.

The sampling technique was convenient sampling. Convenient sampling is a non-probability sampling technique and respondents are chosen according to convenient accessibility and closeness to the researcher. Thus, respondents were voluntarily participated in this research.

3.6 Data Collection

A quantitative survey was used to collect primary data. The data was collected with the use of questionnaire. The questionnaire was distributed via convenient sampling method in

Kelang Valley in Malaysia and in Singapore. In Malaysia the questionnaires were personally distributed in University Malaya main campus and Business school and in shopping malls. Moreover, online survey method was also adopted. In Singapore the questionnaires were all personally distributed in different shopping centers, restaurants or in other public areas.

Briefly, the sample comprises approximately 48.6% Malay respondents, 41.4% Chinese and 10.0% Indians in Malaysia and it approximately shows the race distribution. In Singapore as the population of Chinese is larger than Malay and Indian, the percent of the respondents were Chinese 57%, Malay 30.0% and Indian 13%. Demographics of respondents will be presented in chapter four in more details.

3.7 Data Analysis Techniques

After collecting the data, the questionnaires were checked and screened and those which were incomplete or had missing values or illogically answered were all discarded from further analysis.

For doing the data analysis, SPSS Version 20 was used. Descriptive statistics were used to measure the frequency for the demographic part as well as to calculate Mean, Standard deviation, Skewedness and Kurtosis of each variable and each item. Item coding was also done to simplify the process of recognizing each item.

In order to examine the Reliability of the instrument, Cronbach's Alpha was used to assess the internal consistency of each construct separately. The Croncach's Alpha indicates if items are highly related in the questionnaire. According to Nuanly (1978), Alpha value

higher than 0.7 shows a high reliability. In order to test the validity of the instrument, Factor Analysis was performed on dependent as well as independent variables distinctly.

In determining whether there is relationship between each independent variables and the dependent variable, and to test the hypotheses formulated previously, Regression Analysis was used.

Multiple Regressions was used to assess the significant level of each independent variables and their effect on the dependent variable. Indeed, Regression is analysis of a predictor variable relationship to the dependent variable. Therefore, in this study Multiple Regression Analysis was employed which provides the best prediction of relationship between dependent variable and independent variables.

To find out about the effect of demographics on the dependent variable, ANOVA test was used. The ANOVA test was performed to check whether or not the means of several groups are all equal.

CHAPTER FOUR

REASERCH RESULTS

4.0 Introduction

This chapter presents the methodological approach of the study. It includes the summary of demographic profile of respondents, reliability of the questionnaire, factor analysis, linear regression analysis, multiple regression analysis as well as ANOVA test.

4.1 Preliminary Study

4.1.1 Reliability on Pilot Study

In this study a pilot test was conducted on 45 respondents to identify about the question design, wording or instructions as well as to understand about the reliability of the questionnaire. To measure the reliability, Cronbach's Alpha was conducted. According to the result shown in Table 4.1, reliability is 0.79 which is considered as reliable according to (Nunnally 1978) claiming that Cronbach's Alpha value higher than 0.70 is considered reliable. The useful comments and opinions of the respondents were also used on improvement of the questionnaire.

Table 4.1: Reliability of Questionnaire in Pilot Test

Cronbach's Alpha	Cronbach's Alpha Based on Standardized items	N of Items
0.792	0.909	43

4.2 Summary of Data Collection

A total of 550 questionnaires were distributed to potential respondents out of which 400 questionnaires were distributed in Klang Valley in Malaysia and 150 questionnaires were distributed in Singapore. 365 questionnaires were returned in Klang Valley with the response rate of 91%. However, the number was then reduced to 350 after data had been screened and checked. Out of 150 questionnaire which were distributed in Singapore, 128 were returned with the response rate of 83% which then reduced to 100 after data screening, checking and cleaning the data. Table 4.2 shows the summary of response rate.

Table 4.2: Summary of Data Collection

Data			
Distributed	**Collected**	**Response rate**	**Usable**
400 Klang Valley	365	91%	350
150 Singapore	128	83%	100

4.3 Descriptive Statistics

Table 4.3 presents the respondent demographic profile. The respondents consisted of 40.4% male and 59.6% female in Malaysia and Singapore. This study purposely targeted more female respondents than males because women in Malaysia are still take care of household matters and purchase and food consumption decisions (Raijas, 2000; Hansen , 2003).

Considering the age groups break down as mentioned by Bruke (2004) there are four categories for the age groups as follow:

First age group is Veterans who were born between 1925-1940, the second group is Baby Boomers who were born between 1941-1960, third group is called Generation X (Gen X) which includes those born between 1961-1976 and finally the fourth group which is Generation Y (Gen Y) also known as Millennials who were born between 1977-1992. As a result, the age groups in this study were divided according to the mentioned categories. Thus, in this study the groups are Gen Y (20-34), Gen X (35-49), Baby Boomers (50-69), and Veterans (70 & above).

According to the results shown in Table 4.3, 81.7% of the respondents were in the category of Gen Y whose age were between 20 to 34 years old. About 13.3% of the respondents were from the category of Gen X, and the rest which was 4.9% was from the category of Baby Boomers. No respondent from category of Veterans participated in this study.

As Malaysia and Singapore are multi-racial countries, three ethnics group namely Malay, Chinese and Indians have been considered to participate in the study. Therefore, based on the portion of population in Malaysia, Malay have the largest number of population which follows by Chinese and Indians respectively. According to the results of the study 48.6% of respondents were Malay, 41.4% were Chinese and 10.0% were Indians. In Singapore as the population of Chinese ethnic group is larger than Malay and Indian, the percent of the respondents are as follow: Chinese 57%, Malay 30.0% and Indian 13%.

In terms of education level, it can be concluded that the highest majority of respondents were Bachelor's degree holders which was 45.8%. This followed by respondents who were high school graduates (25.1%), had Master's degree, (10.4%), Secondary School (4.7%),

associate degree (3.3%), some college credit but less than one year, (3.1%), Doctorate (0.9%), professional degree (0.9%), and no schooling (0.4%).

Considering occupation and employment status of the respondents, Table 4.3 shows that the largest group of respondents was university students (51.1%), which follow by (32%) of the respondents from the private sector, (10.2%) were government employees, (3.6%) were self-employed, (1.6%) were unemployed and (0.7%) was retired.

From the monthly income profile, most of the respondents in Malaysia earned a monthly income of RM3000-4999 (17.1%), this followed by RM1000-2999 (16.2%) which can be considered as middle income group. Another (14.7%) and (10.4%) of the respondents earned bellow RM1000 and RM5000-6999, respectively. The rest of respondents earned RM7000-8999 (6.7%), RM9000-11999(5.6%), and above RM12000 (7.1%) per month which are from high income groups. In Singapore the majority which is (28%) earned SGD4000-5999 this followed by SGD1000-1999 (24%), and SGD2000-3999 (20%).

Table 4.3: Demographic Profile of Respondents

Demographic Profiles	**Categories**	**Frequency**	**Percentage**
Age	20-24	203	45.1%
	25-29	92	20.4%
	30-34	73	16.2%
	35-39	30	6.7%
	40-44	15	3.3%
	45-49	15	3.3%
	50-69	22	4.9%
	Total	**450**	**100**%
Gender	Male	182	40.4%
	Female	268	59.6%
	Total	**450**	**100**%

Table 4.3, continued

Demographic Profiles	Categories	Frequency	Percentage
Marital Status	Single	322	71.6%
	Married with children	87	19.3%
	Married without children	36	8.0%
	Divorced/ Widowed	5	1.1%
	Total	**450**	**100**%
Nationality	Malaysian	350	77.8%
	Singaporean	100	22.2%
	Total	**450**	**100**%
Ethnics Group	Malaysian Malay	170	48.6%
	Malaysian Chinese	145	41.4%
	Malaysian Indian	35	10.0%
	Total Malaysians	**350**	100%
	Singaporean Malay	30	30.0%
	Singaporean Chinese	57	57.0%
	Singaporean Indian	13	13.0%
	Total Singaporeans	**100**	100%
	Total	**450**	100%
Religion	Muslim	199	44.2%
	Christian	65	14.4%
	Hindu	38	8.4%
	Buddhist	126	28.0%
	Others	22	4.9%
	Total	**450**	**100**%
Occupation	Government employee	46	10.2%
	Private sector employee	146	32.4**%**
	Self-employed	16	3.6**%**
	Unemployed	7	1.6**%**
	A homemaker	2	0.4**%**
	Student	230	51.1**%**
	Retired	3	0.7**%**
	Total	**450**	**100%**

Table 4.3, continued

Demographic Profiles	Categories	Frequency	Percentage
Education	No schooling completed	2	0.4%
	Secondary school	21	4.7%
	High school graduate - high school diploma or the equivalent	113	25.1%
	Some college credit, but less than 1 year	14	3.1%
	1 or more years of college, no degree	24	5.3%
	Associate degree	15	3.3%
	Bachelor's degree	206	45.8%
	Master's degree	47	10.4%
	Professional degree	4	0.9%%
	Doctorate degree	4	0.9%
	Total	**450**	**100%**
Income Malaysian Ringgit	<RM1000.00	66	14.7%
	RM 1,000—RM 2,999	73	16.2%
	RM 3,000—RM 4,999	77	17.1%
	RM 5,000—RM 6,999	47	10.4%
	RM 7,000—RM 8,999	30	6.7%
	RM 9,000—RM 11,999	25	5.6%
	>RM12,000	32	7.1%
Income Singapore Dollar	<SGD500	9	2.0%
	SGD 500-999	4	0.9%
	SGD1000-1999	24	5.3%
	SGD2000-3999	20	4.4%
	SGD4000-5999	28	6.2%
	SGD6000-7999	8	1.8%
	>SGD8000	7	1.6%
	Total	**450**	100%

Table 4.3, continued

Demographic Profiles	Categories	Frequency	Percentage
Household size	1-3 4-6 7-9 >10 **Total**	189 217 40 4 **450**	42.0% 48.2**%** 8.9**%** 0.9**%** **100%**

4.4 Coding of Items

Table 4.4 shows the items of each variable and its simplified code. Mean, Standard deviation, Skewed and Kurtosis of each item is also presented in Table 4.5.

Table 4.4: Simplified Code of Items

Variable	Item	Item code
Perception on environmental friendly behavior	Eat less meat (maximum once or twice per week) Eat only seasonal fruits and vegetables Avoid food products with excessive packaging Buy regional (locally produced) food products Buy organic food products Supermarkets charge consumers for plastic carrying bags More international discussion on green food consumption Green movement makes more awareness on green food concept	PE1 PE2 PE3 PE4 PE5 PE6 PE7 PE8
Motives for meat reduction	Eating less meat is better for one's health Eating less meat is better for the environment By consuming less meat, one saves money By abstaining from meat, one can prevent animal suffering	MMR1 MMR2 MMR3 MMR4

Table 4.4, continued

Variable	Item	Item code
Motives for increase of seasonal fruit & vegetable	Seasonal fruits and vegetables are better for the environment	MFV1
	Seasonal fruits and vegetables have a better taste	MFV2
	By buying seasonal fruits and vegetables one saves money	MFV3
	Seasonal fruits and vegetables are more healthy	MFV4
Willingness to adopt ecological food consumption	I am willing to eat less meat (maximum once or twice per week)	WID1
	I intend to eat only seasonal fruits and vegetables	WID2
	I am willing to buy regional (locally produced) food products	WID3
	I plan to buy organic food products	WID4
	I am willing to avoid food products that are imported by airplane	WID5
	I intend to use my own carry bag when shopping instead of plastic bags	WID6
	I am willing to avoid purchasing products in non-environmentally friendly packages (e.g. plastic packaging)	WID7
	I'm volunteer for an environmental group	WID8
Eco-labels	I am aware of Malaysian/Singaporean best eco-label	EL1
	Eco-labels are eye catching on green products	EL2
	Sufficient information is provided on eco-labels	EL3
	I believe that eco-labels are easy to read	EL4
	Green products are marketed to me in a way which I really find engaging and relevant to my lifestyle	EL5
	Information on eco-labels is accurate for green products	EL6
	It is easy for me to identify green products in markets	EL7
	I acknowledge that the information on eco-label is an important criterion	EL8
Eco-brands	I am aware of eco-brands	EB1
	Eco-brand is symbol of product reliability	EB2
	I believe eco-brand is truthful	EB3
	I feel good about buying brands which are less damaging to the environment	EB4
	I trust well-known green branded products in Malaysia/ Singapore	EB5
Advertisement	Environmental advertisement enhance my knowledge about green products	AD1
	Environmental advertisement guide customers to making an informed purchasing decision	AD2
	I enjoy watching broadcast environmental advertisement	AD3
	Green advertisements should promote environmental friendly products in a credible manner	AD4
	Attractive environmental advertisements will encourage me to purchase green product patterns	AD5
	Environmental advertisements are not exaggerated for green products in Malaysia/Singapore	AD6

Table 4.5: Mean, Standard Deviation, Skewed, Kurtosis of each Item

Construct	Item	Mean	Standard Deviation	Skewed	Kurtosis
Perception on environmental friendly activities	PE1	3.27	1.166	-0.270	-0.769
	PE2	3.02	1.095	0.74	-0.793
	PE3	3.78	0.922	-0.487	-0.229
	PE4	3.55	0.874	-0.197	-0.184
	PE5	3.38	0.930	-0.402	0.125
	PE6	3.76	1.168	-0.820	-0.214
	PE7	3.86	0.872	-0.605	0.584
	PE8	3.94	0.819	-0.523	0.354
Motives for meat reduction	MMR1	3.61	1.020	-0.512	-0.283
	MMR2	3.29	1.089	-0.172	-0.613
	MMR3	3.39	1.002	-0.180	-0.707
	MMR4	3.20	1.112	-0.147	-0.729
Motives for increase of seasonal fruit & vegetable	MFV1	3.64	0.878	-0.369	0.105
	MFV2	3.46	0.880	-0.173	-0.107
	MFV3	3.31	0.950	-0.207	-0.205
	MFV4	3.61	0.909	-0.148	-0.526
Willingness to adopt ecological food consumption	WE1	3.33	1.1130	-0.332	-0.724
	WE2	2.91	1.024	0.109	-0.630
	WE3	3.66	0.777	-0.435	0.331
	WE4	3.24	0.889	-0.054	-0.345
	WE5	3.08	0.903	0.115	-0.159
	WE6	3.82	0.995	-0.639	0.071
	WE7	3.63	0.882	-0.181	-0.302
	WE8	3.21	1.014	-0.064	-0.387
Eco-labels	EL1	3.01	0.986	-0.218	-0.539
	EL2	3.29	0.868	-0.672	0.319
	EL3	3.09	0.838	-0.241	-0.152
	EL4	3.28	0.764	-0.547	0.593
	EL5	3.19	0.818	-0.356	0.278
	EL6	3.19	0.735	-0.139	0.678
	EL7	3.11	0.906	-0.275	-0.395
	EL8	3.60	0.823	-0.540	0.230
Eco-brands	EB1	3.14	0.916	-0.320	-0.346
	EB2	3.31	0.820	-0.400	0.293
	EB3	3.32	0.847	-0.375	0.123
	EB4	3.85	0.834	-0.561	0.492
	EB5	3.41	0.821	-0.227	0.304
Advertisement	AD1	3.67	0.797	-0.487	0.284
	AD2	3.69	0.773	-0.387	0.191
	AD3	3.54	0.857	-0.427	0.257
	AD4	3.98	0.771	-0.640	0.840
	AD5	3.86	0.840	-0.519	0.266
	AD6	3.40	0.773	-0.164	0.570

4.5 Normality Test

The normality assumption of data is considered as a prerequisite condition for many inferential statistical techniques since normal data is an underlying assumption in parametric tests. Therefore, normality measures the degree to which the distribution of samples corresponds to a normal distribution. Normality can be assessed to some extent by obtaining the skewness and kurtosis values. The skewness vale indicated the symmetry of the distribution whereas kurtosis provides information about the "peakedness" of distribution (Pallant, 2007). The skewness and kurtosis of normal distribution is zero, although if skewness and kurtosis for data distribution is within the range of -1 to +1, the data distribution is considered to be normal (Hair, Anderson, Thathman, & Black, 2006). As a result, based on Table 4.5 skewness and kurtosis values are within the acceptable range of normality and the parametric techniques could be used to analyze the data.

4.6 Reliability Analysis

Reliability analysis was conducted by using Cronbach's Alpha test to measure the internal consistency of any of the constructs. Assumption was that items of a construct work together as a set and should be able to measure the same construct independently. Thus, items must be consistent in what they show about the concept which is being measured. For reliability measure it was decided not to be lower than 0.5 which is according to Kerlinger and Lee (2000), the minimum acceptable level. Table 4.6 illustrates the results of reliability analysis on each construct.

Table 4.6: Reliability Analysis of Each Construct

Construct	Item	Cronbach's Alpha	Cronbach's Alpha if Item Deleted
Perception on environmental Friendly behaviors	PE1	**0.669**	0.641
	PE2		0.651
	PE3		0.641
	PE4		0.646
	PE5		0.625
	PE6		0.671
	PE7		0.620
	PE8		0.619
Motives for meat reduction	MMR1	**0.792**	0.761
	MMR2		0.682
	MMR3		0.779
	MMR4		0.728
Motives for increase of seasonal fruits & vegetables	MFV1	**0.740**	0.647
	MFV2		0.628
	MFV3		0.714
	MFV4		0.729
Willingness to adopt ecological Food consumption	WE1	**0.739**	0.716
	WE2		0.703
	WE3		0.718
	WE4		0.714
	WE5		0.706
	WE6		0.729
	WE7		0.699
	WE8		0.713
Eco labels	EL1	**0.880**	0.870
	EL2		0.856
	EL3		0.860
	EL4		0.861
	EL5		0.858
	EL6		0.858
	EL7		0.870
	EL8		0.887
Eco-brands	EB1	**0.789**	0.757
	EB2		0.725
	EB3		0.729
	EB4		0.782
	EB5		0.751
Advertisement	AD1	**0.808**	0.761
	AD2		0.747
	AD3		0.764
	AD4		0.788
	AD5		0.774
	AD6		0.825

As the results show in Table 4.6, Cronbach's Alpha varied from 0.669 (perception on environmental on environmentally friendly behaviors) to 0.880 (consumers attitudes on Eco-labels) which were all acceptable and considered as highly reliable only there were three items namely PE6, EL8, and AD6 that if deleted could increase the reliability. As a result, in order to increase the reliability these items were deleted from further analysis. By deleting these items the reliability of the three constructs including Perception, Eco label and Advertisement increased to 0.671, 0.887, and 0.825 respectively.

4.7 Factor Analysis

Factor Analysis is considered as a technique which confirms the construct's dimensions and indicates that which items are the most appropriate ones for each dimension. DeCoster (1998) claimed that "factor analysis is a collection of methods used to examine how underlying constructs influence the responses on a number of measured variables" (p.1).

As mentioned by Henson & Roberts (2006), factor analysis is used to determine the theoretical constructs underling the given data, and the extent to which these constructs show the original variables. Indeed, factor analyses are performed by determining the pattern of co-variances as well as correlations between the observed measures. Those measures which are in fact highly correlated are being influenced by the same factors, but those that are not correlated are influenced by unlike factors (DeCoster, 1998).

To conduct Factor Analysis, first it is essential to check data adequacy and Sphericity through the use of KMO and Bartlett's test. As mentioned by Hinton, Brownlow, McMurray, and Cozens (2004), a KMO statistic equal or higher than 0.5 shows that the

data is appropriate for factor analysis. Therefore, according to the result of the KMO test, which is 0.746 for the dependent variable and 0.884 for independent variable; it is possible to say that the data is suitable for performing factor analysis.

Due to the relationship between variables, the Bartlett's Test of Sphericity was performed. Hinton et al. (2004) claimed that if we cannot find any relationship between the variables then the use of factor analysis will not make any sense. According to Hinton et al. (2004), significance level of $p < 0.05$ indicates that it is logical to continue with factor analysis and; therefore, as the results of findings show in this study the value of $p< 0.05$ is acceptable, and it is possible to employ factor analysis. Table 4.7 and 4.9 show the results of KMO and Bartlett's Test on both dependent and independent variables.

4.7.1 Factor Analysis on Dependent Variable

Factor Analysis on dependent variable, which is consumers' willingness to adopt ecological food consumption behaviors was performed with the use of PCA, Varimax rotation, and suppress absolute value less than .50. Table 4.8 illustrates the result of factor analysis on dependent variable (WID). According to Table 4.8 two factors were extracted by PCA explaining 50.39% percent of the variance. In fact items loaded under the first component are those items directly deal with food consumption and those loaded on the second components related more to environmental friendliness activities. As the assumption of this study was consumers' willingness to adopt ecological food consumption behaviors, only the first factor would be considered

and three items which were loaded under the second factor namely WID6, WID7 and WID 8 would be deleted from further analysis.

Table 4.7: KMO and Bartlett's Test for Dependent Variable

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.746
Bartlett's Test of Sphericity	Approx. Chi-Square	673.122
	df.	28
	Sig	.000

Table 4.8: Rotated Component Matrix for Dependent Variable

	Component	
	1	2
WID 1	0.745	
WID 2	0.796	
WID 3	0.513	
WID 4	0.575	
WID 5	0.609	
WID 6		0.774
WID 7		0.789
WID 8		0.618

4.7.2 Factor Analysis on Independent Variables

Factor Analysis for the independent variables, which are consumer's perception (PE), motives for meat reduction (MMR), motives for increasing consumption of seasonal fruits and vegetables (MFV) and also green marketing strategies (GMTOTAL) was performed with the use of PCA, Varimax rotation, and suppress absolute value less than .50. Table 4.9 and Table 4.10 show the result of KMO and Bartlett's Test and factor analysis on

the independent variables. According to Table 4.10, five factors were extracted by PCA explaining 54.294 percent of the variance. Considering the acceptable criteria for item loadings, only one item (EB5) with loadings <0.5 was deleted from further analyses.

Table 4.9: KMO and Bartlett's Test for Independent Variables

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.880
Bartlett's Test of Sphericity	Approx. Chi-Square	6242.288
	df.	496
	Sig	.000

Table 4.10: Rotated Component Matrix for Independent Variable

	Components				
	1	2	3	4	5
AD1	0.749				
AD2	0.771				
AD3	0.664				
AD4	0.675				
AD5	0.737				
EL1		0.716			
EL2		0.750			
EL3		0.775			
EL4		0.768			
EL5		0.768			
EL6		0.771			
EL7		0.709			
EB1		0.647			
EB2		0.573			
EB3		0.546			
EB4		0.644			
MMR 1			0.790		
MMR 2			0.801		
MMR 3			0.504		
MMR4			0.699		
MFV1				0.669	
MFV2				0.755	
MFV3				0.682	
MFV4				0.622	

Table 4.10, continued

	Components				
	1	2	3	4	5
PE 1					0.661
PE 2					0.555
PE 3					0.566
PE 4					0.612
PE 5					0.603
PE 7					0.639
PE 8					0.606

4.8 Regression Analyses

4.8.1 Regression Analysis between Consumers' Perception and Their Willingness to Consume Ecological Food

Table 4.11 shows the Model Summary, ANOVA result, and relation between consumers' perception on environmental friendly behaviors and their willingness to consume green food.

Adjusted R Square= 0.332, F= 224.173, Sig= .000

Table 4.11: Model Summary, ANOVA Result, Relation between PE and WID

	B	**t**	**Sig**
PE	0.577	14.972	.000

Dependent variable: Willingness (WID), Independent Variable: Perception (PE)

According to the result shown in Table 4.11, independent variable which is perception on environmental benefits of ecological food (PE) explained 33% of the variance (R Square)

in willingness to adopt ecological food consumption which is highly significant as indicated by the F-value of 224.173.

An examination of t-value revealed that perception contributes to consumers' willingness.

4.8.2 Regression Analysis between Motives for Meat Reduction and Consumers' Willingness to Consume Ecological Food

Table 4.12 shows the Model Summary, ANOVA result, and relation between motives for meat reduction and consumers' willingness to consume ecological food.

Adjusted R Square= 0.266, F= 164.078, Sig= .000

Table 4.12: Model Summary, ANOVA Result, Relation between MMR and WID

	B	**t**	**Sig**
MMR	0.518	12.809	.000

Dependent variable: willingness (WID), Independent Variable: motives for meat reduction (MMR)

According to Table 4.12, independent variable which is motives for meat reduction explained 26% of the variance (R Square) in willingness to adopt ecological food consumption which is highly significant whereas the F-value is 164.078.

An examination of t-value revealed that motives for meat reduction contribute to consumers' willingness.

4.8.3 Regression Analysis between Motives for Increasing Consumption of Seasonal and Regional Fruits and Vegetables and Consumers' Willingness to Consume Ecological Food

Table 4.13 shows the Model Summary, ANOVA result, and relation between motives for increasing consumption of seasonal and regional vegetables and fruits and consumers' willingness to consume ecological food.

Adjusted R Square= 0.241, F= 142.546, Sig= .000

Table 4.13: Model Summary, ANOVA Result, Relation between MFV & WID

	B	**t**	**Sig**
MFV	0.491	11.939	.000

Dependent variable: Willingness (WID), Independent Variable: motives for increasing consumption of seasonal and regional fruits and vegetables (MFV)

According to Table 4.13, independent variable which is motives for increasing consumption of seasonal and regional vegetables and fruits explained 24% of the variance (R Square) in willingness to adopt ecological food consumption which is highly significant whereas the F-value is 142.546.

An examination of t-value revealed that motives for increasing consumption of seasonal and regional fruits and vegetables contribute to consumers' willingness.

4.8.4 Regression Analysis between Green Marketing Strategies and Consumers' Willingness to Consume Ecological Food

Table 4.14 shows the Model Summary, ANOVA result, and relation between green marketing strategies namely eco-labels, eco-brands and advertising and consumers' willingness to consume ecological food.

Adjusted R Square= 0.113, F= 57.203, Sig= .000

Table 4.14: Model Summary, ANOVA Result, Relation between GMTOTAL and WID

	B	**t**	**Sig**
GMTOTAL	0.336	7.563	.000

Dependent variable: Willingness (WE), Independent Variable: Green marketing strategies (al dimensions)

According to Table 4.14, independent variable which is green marketing strategies explained 11% of the variance (R Square) in consumers' willingness to adopt ecological food consumption which is highly significant as indicated by F-value =57.203.

An examination of t-value revealed that green marketing strategies contribute to consumers' willingness.

4.8.4.1. Multiple Regression Analysis between Dimensions of Green Marketing Strategies and Consumers' Willingness to adopt Ecological Food Consumption Behaviors

Three dimensions were considered for the green marketing strategy; however, the results of factor analysis revealed EL and EB as one component. Therefor these two dimensions will

consider as one (ELB) for further analysis. As shown in Table 4.15, dimensions of green marketing strategies explained about 12% of the variance (R Square) in consumers' willingness for adoption of ecological food consumption which is significant as indicated by the F-value of 21.834. As analysis of t-values shows EL, EB, and AD all contributes to consumer's willingness to adopt ecological food consumption behaviors.

Adjusted R Square= 0.118, F= 29.902, Sig= .000

Table 4.15: Multiple Regressions: Model Summary, ANOVA Result, Relation between ELB, AD & WID

	B	**t**	**Sig**
ELB	0.199	3.880	.000
AD	0.198	3.853	.000

Dependent variable and all Independent variables

The Standardized coefficient (β) has been used in the current study to compare the distribution of each dimensions of independent variable which is green marketing strategies. The results revealed that ELB (β= 0.199, $p<0.001$), AD (β=0.198, $p<0.001$), and were significantly contribute to consumers' willingness for adoption of ecological food consumption behaviors.

Obviously, according to the results of Table 4.15 ELB has stronger effect on respondents' willingness to adopt ecological food consumption behaviors which follows by advertisement.

4.8.5 Multiple Regression Analysis between Independent Variables and Dependent Variable

As shown in Table 4.16, all independent variables together explained about 47% of the variance (R Square) in consumers' willingness to adopt ecological food consumption which is highly significant as indicated by the F-value of 101.298. As examination of t-values indicates perception (PE), motives for meat reduction (MMR), motives for increasing consumption of seasonal and regional fruit and vegetables (MFV) and green marketing strategies (GMTOTAL) all contributes to consumer's willingness to adopt ecological food consumption behaviors.

Adjusted R Square= 0.472, F= 101.298, Sig= .000

Table 4.16: Multiple Regression: Model Summary, ANOVA Result, Relation between PER, MMR, MFV, GMTOTAL

	B	**t**	**Sig**
PE	0.319	7.663	.000
MMR	0.250	5.944	.000
MFV	0.200	4.921	.000
GMTOTAL	0.192	5.342	.000

Dependent variable and all Independent variables

In this study Standardized coefficient (β) has been used to compare the distribution of each independent variable. The result showed that PE (β=0.319, $p<0.001$), MMR (β= 0.250, $p<0.001$), MFV (β=0.200, $p<0.001$), GMTOTAL (β=0.197, $P<0.001$), were significantly contribute to consumers' willingness to adopt ecological food consumption behaviors.

4.8.5.1 Discussion

According to the results of this study consumers' perception on environmental friendly activities has the strongest effect on their willingness to adopt ecological food consumption behaviors which follows by Motives for meat reduction, motives for increasing consumption of seasonal and regional vegetables and fruits and green marketing strategies.

Thus, according to Theory of Reasoned Action (TRA) by (Fishbein and Azjen, 1975; Azjen and Fishbein, 1980), action contains attitudes, that determine behavioral intention, which leads to behavior and therefore, can be concluded that having positive perception and attitude towards environmental friendly behavior can significantly affect consumers' willingness for adoption of ecological food consumption behaviors.

Furthermore, motives including environmental as well as non-environmental motives such as health issues, price and taste as well as ethical issues also paly significant role in influencing consumers' willingness to consume green food.

Green marketing strategies also has effect on consumers' willingness for food choice. Thus, it can be assumed that using green marketing strategies can be a good tool for encouraging consumers to change their conventional behaviors towards more ecofriendly consumption. In this case marketers would be able to get advantage of Malaysian and Singaporean markets to initiate innovative techniques in the area of eco labels, positioning their green brands as well as advertisements to influence consumers' purchasing decisions towards more green food consumption.

4.9 Analysis of the Relation between Gender and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors

4.9.1 Analysis of the Relation between Gender and Consumers' Willingness to Adopt Ecological Food Consumption in Malaysia

To test the relation between gender and consumers' willingness to adopt ecological food consumption, an independent sample t-test was used to find out if there is a significant difference between genders and their willingness in Malaysia. According to Table 4.18, Levene's test showed a probability of 0.365 which is bigger than 0.05, thus it is assumed that the population variances are somewhat equal. Considering t-value, df, and two-tailed to determine the differences between male and female, in Malaysia the two-tailed significance for gender indicated that t= -2.494, $p<0.05$ and thus a significant difference can be observed between the two groups. Considering the mean differences between male and female, the results show greater mean for female respondents. As a result, it can be assumed that Malaysian female consumers are more willing to adopt ecological food consumption behaviors than male consumers.

Consequently, according to the result of t-test analysis, H4a will be accepted.

Table 4.17: Group Statistics for Gender in Malaysia

Gender		N	Mean	Std. Deviation	Std. Error mean
WID	Male	123	16.02	3.127	0.282
	Female	227	16.89	3.108	0.206

Table 4.18 Independent Samples Test between Gender and WID in Malaysia

		Levene's test for Equality of Variance		Test for equality of means						
		f	Sig.	t	Df	Sig (2-taild)	Mean Difference	Std. Error Difference	.95% Confidence Interval of the Difference	
									Lower	Upper
WID	Equal variances assumed	0.822	0.365	-2.494	348	0.013	-0.870	0.349	-1.556	-0.184
	Equal variances not assumed			-2.490	249.064	0.013	-0.870	0.349	-1.558	-0.182

4.9.2 Analysis of the Relation between Gender and Consumers' Willingness to Adopt Ecological Food Consumption in Singapore

To test the relation between gender and consumers' willingness for adoption of ecological food consumption behaviors in Singapore, an independent sample t-test was conducted. The result of Levene's test (Table 4.20) indicated a probability of 0.972 which is greater than 0.05. As a result, it is assumed that the population variances are relatively equal. Considering t-value, df, and two-tailed to determine the differences between male and female in Singapore, the two-tailed significance for gender indicated that $t= 1.098$, $p>0.05$ thus, no significant difference between the two groups of male and female can be assumed in Singapore regarding consumers' willingness for ecological food consumption.

Consequently, according to the result of t-test analysis, H4b will be rejected.

Table 4.19: Group Statistics for Gender in Singapore

Gender		N	Mean	Std. Deviation	Std. Error mean
WID	Male	59	15.19	2.837	0.369
	Female	41	14.54	3.017	0.471

Table 4.20: Independent Samples Test Gender and WID in Singapore

		Levene's test for Equality of Variance		Test for Equality of Means						
		F	Sig.	t	Df	Sig (2-taild)	Mean Difference	Std. Error Difference	.95% Confidence Interval of the Difference	
									Lower	Upper
WID	Equal variances assumed	0.001	0.972	1.098	98	0.275	0.650	0.592	-0.525	1.825
	Equal variances not assumed			1.085	82.720	0.281	0.650	0.599	-0.541	1.841

4.10 Analysis of the Relation between Age and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors

4.10.1 Analysis of the Relation between Age and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors in Malaysia

To determine if there is any relation between Malaysian consumers' age and their willingness to adopt ecological food consumption behaviors, one way ANOVA was used. According to tables 4.21, 4.22 and 4.23, Levene's test for homogeneity of variance is not

significant p>0.05. Therefore, it is possible to say that the population variances for each group are almost equal.

F= 0.614, P>0.05, so as the p value is not significant as it is 0.719 and we can say that no significant difference can be observed between age groups and their willingness to adopt ecological food consumption in Malaysia. Consequently, the alternative hypothesis H5a will be rejected.

Table 4.21: Descriptive for Age in Malaysia

	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
20-24	167	16.57	3.132	.242	16.10	17.05	9	25
25-29	75	16.13	3.387	.391	15.35	16.91	10	25
30-34	53	16.81	3.323	.456	15.90	17.73	7	25
35-39	21	17.19	2.581	.563	16.02	18.37	13	21
40-44	10	17.60	2.675	.846	15.69	19.51	13	22
45-49	10	16.80	2.394	.757	15.09	18.51	13	20
50-69	14	16.57	2.766	.739	14.97	18.17	12	22
Total	350	16.59	3.138	.168	16.26	16.92	7	25

Table 4.22: Test of Homogeneity Variances

Levene's Statistic	df1	df2	Sig.
.653	6	343	.687

Table 4.23: ANOVA for Age and WID in Malaysia

WID

	Sum of Squares	df	Mean Square	f	Sig.
Between Groups	36.493	6	6.082	.614	.719
Within Groups	3400.261	343	9.913		
Total	3436.754	349			

4.10.2 Analysis of the Relation between Age and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors in Singapore

To check whether there is difference between customers' age and their willingness to adopt ecological food consumption behaviors in Singapore, One Way ANOVA was used. According to the results shown in Table 4.24 and 4.25 and 4.26, Levene's test for homogeneity of variance is not significant as $p>0.05$. Thus, it is possible to say that the population variances for each group are almost equal.

As $F=3.889$, $P<0.05$, it can be concluded that as a minimum one or two of the group means is significantly different from the others. i.e. there is significant difference between group mean. Consequently, the alternative hypothesis (H5b) will be accepted as states that there is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Singapore.

In order to find out about mean differences, it is necessary to conduct a post hoc follow-up test to identify which means differ from each other. According to the result of post hoc there is a significant difference between mean of group 25-29 and 40-44 and 45-49. In other words, according to our age group division on the basis of Gen Y, Gen X and Baby Boomers, which was discussed in the descriptive part of this chapter, a significant difference can be found between Gen Y and Gen X in Singapore. According to the result of post hoc test, consumers who are older are more willing to use ecological food than younger ones.

Table 4.24: Descriptive for Age in Singapore

	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
20-24	36	14.72	2.009	.335	14.04	15.40	11	19
25-29	17	13.06	3.132	.760	11.45	14.67	5	17
30-34	20	15.45	3.086	.690	14.01	16.89	11	22
35-39	9	14.00	3.000	1.000	11.69	16.31	10	20
40-44	5	17.60	1.673	.748	15.52	19.68	15	19
45-49	5	18.20	1.095	.490	16.84	19.56	17	19
50-69	8	15.75	3.882	1.373	12.50	19.00	9	21
Total	100	14.92	2.915	.292	14.34	15.50	5	22

Table 4.25: Test of Homogeneity Variances

Levene's Statistic	df1	df2	Sig.
2.303	6	93	.041

Table 4.26: ANOVA for Age and WID in Singapore

WID	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	168.747	6	28.124	3.889	.002
Within Groups	672.613	93	7.232		
Total	841.360	99			

Thus comparing the analysis of the ANOVA test on the relation between age and consumers' willingness to adopt ecological food consumption behaviors, it is possible to say that age is not significantly influence people willingness in Malaysia while there is significant difference between different age groups in Singapore regarding their willingness to consume ecological food.

4.11 Analysis of the Relation between Education Level and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors

4.11.1 Analysis of the Relation between Education Level and Consumers' Willingness to Adopt Ecological Food Consumption behaviors in Malaysia

To find out about difference between customers' education level and their willingness for adoption of ecological food consumption behaviors in Malaysia, One Way ANOVA was employed. According to the results shown in Table 4.27 and 4.28 and 4.29, Levene's test for homogeneity of variance is not significant $p>0.05$. Therefore, it is possible to say that the population variances for each group are almost equal.

As $F=1.244$, $P>0.05$, thus it can be concluded that no significant difference can be found between consumers education level and their willingness to consume ecological food. Consequently, the alternative hypothesis (H6a) will be rejected as states that there is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Malaysia.

Table 4.27: Descriptive for Education in Malaysia

WID	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Secondary	10	16.40	4.115	1.301	13.46	19.34	11	25
High school graduate	81	16.78	2.650	.294	16.19	17.36	11	23
Some college credit but less than one year	10	15.60	3.169	1.002	13.33	17.87	10	20

Table 4.27, continued

	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1 or more years of college ,no degree	21	15.24	3.659	.799	13.57	16.90	9	21
Associate degree	10	17.50	1.900	.601	16.14	18.86	15	20
Bachelor 's degree	168	16.57	3.133	.242	16.09	17.05	10	25
Master 's degree	44	16.93	3.266	.492	15.94	17.92	7	23
Professional degree	4	18.50	5.916	2.958	9.09	27.91	13	25
Doctorate degree	2	14.50	6.364	4.500	-42.68	71.68	10	19
Total	350	16.59	3.138	.168	16.26	16.92	7	25

Table 4.28: Test of Homogeneity Variances

Levene's Statistic	df1	df2	Sig.
2.341	8	341	0.18

Table 4.29: ANOVA for Education and WID in Malaysia

WID	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	88.206	8	11.026	1.123	. 347
Within Groups	3348.548	341	9.820		
Total	3436.754	349			

4.11.2 Analysis of the Relation between Education Level and Consumers' Willingness to Adopt Ecological Food Consumption Behaviors in Singapore

To check on the difference between customers' education level and their willingness for adoption of ecological food consumption behaviors in Singapore, One Way ANOVA was used. According to the findings shown in Table 4.30 and 4.31 and 4.32, Levene's test for

homogeneity of variance is not significant p>0.05. Therefore, it is possible to say that the population variances for each group are approximately equal.

As F=1.321, P>0.05, thus the alternative hypothesis (H6b) will be rejected as states that there is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Singapore.

Table 4.30: Descriptive for Education in Singapore

WID	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Secondary	2	15.50	2.121	1.500	-3.56	34.56	14	17
High school graduate	11	15.27	3.379	1.019	13.00	17.54	9	21
Some college credit but less than one year	32	15.16	2.579	.456	14.23	16.09	9	22
1 or more years of college ,no degree	4	18.25	1.500	.750	15.86	20.64	17	20
Associate degree	3	14.00	2.646	1.528	7.43	20.57	11	16
Bachelor 's degree	5	15.00	3.317	1.483	10.88	19.12	10	18
Master 's degree	38	14.53	2.993	.486	13.54	15.51	5	19
Professional degree	3	14.67	4.041	2.333	4.63	24.71	11	19
Doctorate degree	2	11.00	.000	.000	11.00	11.00	11	11
Total	100	14.92	2.915	.292	14.34	15.50	5	22

Table 4.31: Test of Homogeneity Variances

Levene's Statistic	df1	df2	Sig.
.733	8	91	.662

Table 4.32: ANOVA for Education and WID in Singapore

WID	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	87.569	8	10.946	1.321	.243
Within Groups	753.791	91	8.283		
Total	841.360	99			

Comparing the results between the two countries, the conclusion would be that education level does not have a significant effect on consumer willingness to adopt ecological consumption behaviors in both Malaysia and Singapore.

4.12 Analysis of the Relation between Consumers' Religions and their Willingness to Adopt Ecological Food Consumption Behaviors in Malaysia/Singapore

In order to identify if any significant difference can be find between customers' religions and their willingness to adopt ecological food consumption behaviors in Malaysia and Singapore, One Way ANOVA was conducted. According to the results shown in Table 4.33 and 4.34 and 4.35, Levene's test for homogeneity of variance is not significant $p>0.05$. Accordingly, it is possible to say that the population variances for each group are almost equal.

As $F=4.281$, $P<0.01$, thus it can be concluded that at least one or two of the group means is significantly different from the others which shows there is significant difference between group mean. To find out the significant difference between each group post hoc test was conducted. According to the result of post hoc test a significant difference can be found

between mean of group of Christians and Hindus, and also between the category of others which mostly included freethinkers and atheist with Muslims, Hindus and Buddhists.

Consequently, the alternative hypothesis (H7) will be accepted as states that there is a significant difference between consumers with different religions and their willingness to adopt ecological food consumption behaviors in Malaysia/Singapore.

Table 4.33: Descriptive for Religion

WID	N	Mean	Std. Deviation	Std. Error	95% Confidence interval for mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Muslim	199	16.35	3.066	.217	15.92	16.78	7	25
Christian	65	15.42	3.066	.380	14.66	16.18	5	22
Hindu	38	17.24	3.332	.541	16.14	18.33	11	25
Buddhist	126	16.44	3.221	.287	15.87	17.00	10	25
Others	22	14.36	2.735	.583	13.15	15.58	9	21
Total	450	16.22	3.164	.149	15.92	16.51	5	25

Table 4.34: Test of Homogeneity Variances

Levene's Statistic	df1	df2	Sig.
.778	4	445	.540

Table 4.35: ANOVA for Religion and WID

WID	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	166.545	4	41.636	4.281	.002
Within Groups	4328.113	445	9.726		
Total	4494.658	449			

4.13 Discussion

To summarize the research results, it is necessary to consider whether the results tested are answering the hypotheses formulated previously.

H1: There is a significant relationship between Malaysian and Singaporean consumers' perception about the environmental friendly activities and their willingness to adopt ecological food consumption behaviors.

An examination of t-value revealed that perception contributes to consumers' willingness. Therefore, the current study is in line with what claimed previously by other researchers. For instance, Curlo (1999) claimed that studies done in the context of US and Western countries, revealed the fact that people are becoming more environmentally concern within past decade. Similarly, Harris (2006) declared in Asian countries people were also increasingly becoming conscious to environmental problems. Therefore, according to the results of the recent study, people in Malaysia and Singapore also concern about the environmental issue as a significant relation can be observed between their perception and their willingness. The majority of respondents agreed that a wide range of food-related environmental activities were important for helping the environment, while there are exceptions for buying organic food and consuming less meat. The majority of respondents about 73% agreed that green movement makes more awareness on green food concept and is the most important action to be taken. 68% also believed that more international discussion on green food consumption have strong effect on the environment issues.

H2a: Motives for meat reduction has significant effect on consumers' willingness to consume ecological food in Malaysia/Singapore

H2b: Motives for increasing consumption of seasonal and regional fruits and vegetables has significant effect on consumers' willingness to consume ecological food in Malaysia/ Singapore

According to the findings of the study, significant relation could be observed between motives for reducing meat consumption as well as motives for increasing consuming seasonal and regional vegetables and fruits and respondents willingness to consume ecological food. Thus, according to Tobler et al., (2011), previous research showed that healthiness, price and sensory appeal, were among important factors that could influence on consumers' choices of food consumption. So it is necessary to understand how green marketers and green food industry can motivate people through different means of motives like health, price and taste to affect consumers' decision makings regarding consumption of ecological food.

H3: Consumers' perception on green marketing strategies has significant effect on their willingness to adopt ecological food consumption behaviors in Malaysia/ Singapore

H3a: Consumers' perception on eco-label has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

H3b: Consumers' perception on eco-brand has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

H3c: Consumers' perception on green advertisements has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore

As the findings revealed in this research green marketing strategies can significantly affect consumers' willingness for adoption of ecological food consumption behaviors.

As claimed by (Pickett-Baker and Ozaki, 2008), eco labels and eco brands can change consumers' attitudes to greener consumption. And in fact influential green positioning involves communication and differentiation of the brand based on its functional characteristics and emotional benefits Hartmann et al., (2005) which could ultimately encourage consumer to change their previous purchasing towards more purchase green food products.

The crucial issue is the effective communication of green branding and positioning as Pickett et al. (1995) also declared if green brand qualities are not well communicated, environmentally sustainable products cannot be commercially successful.

Moreover, considering the effect of eco labels, D'Souza Taghian, Lamb, and Peretiatkos (2006) confirmed that use of eco-label on products is a useful way to communicate the specific aspects and benefits of the product to customers which also shows the safety of the product. Thus, eco labels provide information to consumers at the time purchase decision makings. This was also mentioned by Sammer and Wu¨stenhagen (2006) as they emphasized on eco-label as an important tool for providing asymmetry information between sellers and buyers. They also stated that labels perform two main functions for consumers which are information as well as value functions as the former informs buyers about intangible characteristics of product like quality and the later provide a value in themselves like prestige.

Findings of the recent study revealed that eco-label and eco-brand have positive impact on consumers' willingness to consume green food which is in line with the previous studies. For instance, the study by Nik Abdul Rashid's (2009) showed that consumers' awareness about eco-label has positive impact on knowledge of green product and consumer's willingness to purchase these products

The study by Juwaheer, Pudaruth, & Noyaux (2012) also showed the similar results. According to them, consumers' perception on eco-labels, eco-brand and advertisement significantly influenced consumers green purchasing intentions in Mauritius.

Similarly, the result of the study by Rahbar and Abdul Wahid (2011) in Malaysia, revealed that eco-brand and trust in eco-label are positive and significant variable that related to actual purchase behavior of consumers and it seems that eco-brand awareness among Malaysian consumers and their intention for purchasing and consuming environmentally friendly branded products were influenced by their attitudes and belief in the benefits that these green products can have on environment protection.

As mentioned by Nik Abdul Rashid (2007), eco-label and eco-brand were in fact new concept in Malaysia not merely due to their existence but due to strategies that marketers use to make influence on consumers' purchasing behavior. He also stated that there was lack of efforts by marketers and producers to establish trust in eco-label and eco-brand among Malaysian consumers. Thus, the concept of eco-brand and eco-label is important as they can significantly affect consumers purchase decisions. Consequently, the green marketers and manufacturers need to pay particular attention to eco-branded products

The results of the recent study also confirmed that green advertisement can significantly affect consumers' willingness for ecological food consumption, although according to the results advertisement has lower effect on consumers' willingness comparing to eco-label and eco-brand.

According to Davis (1993), the reason that resulted to consumer's weak response to environmental advertising is not due to their unwillingness to change their behavior towards purchasing of green products, but it is because consumers are not willing to change their purchase behavior according to the way the green products have been advertised. The reason might be due to lack of specificity in many environmental advertisements which result to creating negative view on the green advertised products.

H4a: There is a significant difference between consumers' gender and their willingness to adopt ecological food consumption behaviors in Malaysia

H4b: There is a significant difference between consumers' genders and their willingness to adopt ecological food consumption behaviors in Singapore

The findings of the current study on the differences between male and female consumers and their willingness to consume ecofriendly food, indicates that Malaysian female are more environmentally concern than male consumers in their willingness to consume green food. This is while the results of the study for Singaporean consumers revealed that no gender difference can be found regarding the consumers environmental friendly concerns and their readiness to use ecofriendly food products.

Therefore, the result of study in the context of Malaysia is in line with the findings of previous researchers saying that females are more ecologically concern than men, (McIntyre et al. 1993; Banerjee and McKeage, 1994; Tobler, Visschers, & Siegrist, 2011) while, the result of gender similarity in Singapore confirms the previous study by Lee & Worsely (2005) as they claimed that their hypothesis which was females would more likely have environmental beliefs than males on food, was unsupported. Thus, geographical and cultural differences might be the reason that though Malaysia and Singapore are neighboring countries but differences can be observed regarding people's beliefs and attitudes towards environmental issues.

H5a: There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Malaysia

H5b: There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Singapore

Considering the differences between age groups and consumers' willingness to consume food in ecofriendly manner, the findings of the study indicated that that no significant difference between different age groups can be observed in Malaysia, whereas significant difference could be observed in Singapore. According to the result of post hoc test, the difference was more obvious between age groups of 25-29 and 40-44 and 45-49, i.e. according to our age group division on the basis of Gen Y, Gen X and Baby Boomers, the difference is clearly notable between Gen Y and Gen X in Singapore. The reason might be that since Gen X is the older generation, they might be more concern about the environmental impact of their activities such as their food consumption or they might have

more financial resources to support environmental issues comparing to younger generation. The finding in this study is in line with the previous studies by (McIntyre et al. 1993; Banerjee and McKeage, 1994; Tobler, Visschers, & Siegrist, 2011) confirming the fact that older people are more environmentally conscious and are more willing to behave in an ecofriendly manner than younger consumers.

H6a: There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Malaysia

H6b: There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Singapore

Considering the effect of education, findings of the current research showed that, no significant difference can be found between education level and consumers' willingness to adopt ecological food consumption behaviors in Malaysia and Singapore. These findings confirms the previous studies by Tanner, Kaiser & Kast, (2004), that declared no education differences were found for ecological food purchasing behaviors in Switzerland, however conflicting results were found by (Schwartz & Milller, 1991; Tobler, Visschers, & Siegrist, 2011), showing that consumers with higher education were more conscious and willing to pay for green products.

H7: There is a significant difference between consumers with different religions and their willingness to adopt ecological food consumption behaviors in Malaysia/Singapore.

The findings of the present research indicated that differences can be observed between consumers with various religious beliefs in Malaysia and Singapore as different religions

can be found among people in both countries such as Muslims, Christians, Buddhists, and Hindus. The significant difference was found between Christians and Hindus as well as between free thinkers and atheists and Muslims, Buddhist and Hindus in their beliefs towards ecological food consumption within the two countries.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter will conclude about the result of the current study after data analysis and discussions given in the previous chapter. It presents the summary and conclusion which will follow by limitation of the study. Suggestion for further research will be elaborated later on and finally implication of the study will be discussed.

5.1 Summary and Conclusions

This study was conducted by getting insight from past research by Tobler, Visschers, & Siegrist (2011), Lea & Worsley (2008), and Juwaheer, Pudaruth, & Noyaux (2012) which were done on different aspects of green food consumption and green marketing techniques within different countries and contexts. The present study aimed to investigate about Malaysian and Singaporean consumers' willingness to adopt ecological food consumption behaviors by considering the effect and influence of consumers' perception on environmental friendly activities, motives for meat reduction and increase of consuming seasonal and regional vegetables and fruits and also consumers' perception on green marketing strategies. Summary of the hypotheses results which were formulated in this study has shown in Table 4.37.

Overall, the findings suggest that consumers' perception on environmental friendly activities play a most significant role on their green food purchasing decisions, thus

important actions need to be taken by the governments and private sector in Malaysia and Singapore to increase consumers knowledge and awareness about green food products and the impact of consumption of these ecological food on the environment as well as on consumers lives.

Furthermore, motives also play a significant role on encouraging people to change their conventional purchasing methods and to move towards more ecofriendly food consumption behaviors. Thus, necessary steps should be taken to encourage and motivate Malaysian and Singaporean consumers more effectively towards green food consumption patterns.

Besides, as findings showed consumers perception on eco-label, eco-brand and advertisement also influence their willingness to consume green food. Thus more creative strategies need to be considered by green marketer to promote green food products in Malaysia and Singapore markets which enable them to gain competitive advantage over their rivals in the region.

The demographic analysis of the respondents also revealed interesting facts about Malaysians and Singaporeans. For instance gender difference was observed in Malaysia showing that Malaysian female were more interested in consuming green food products therefore, female consumers would be a good target for the green marketers to be attracted towards this promising green market.

Moreover, age was significantly influence Singaporean consumers green food purchase intention as Gen X were more concern on environmental issue and more willing to consume ecological food; however, it was not a significant issue in Malaysia. The age

factor should be also considered by the marketers to attract more consumers in this segment.

Interestingly, education did not have a significant effect on willingness of consumers in consumption of ecological food in Malaysia and Singapore. Finally, religion was significantly affect consumers choice of green food consumption. Thus, more research should be done in this area by companies and marketers to attract people with different religious beliefs towards more green food consumption.

Table 5.1: Summary of Hypotheses Testing and Results

No	Hypotheses	Result
H1	There is a significant relationship between Malaysian and Singaporean consumers' perception about the environmental friendly activities and their willingness to adopt ecological food consumption behaviors	**Accepted**
H2a	Motives for meat reduction has significant effect on consumers' willingness to consume ecological food in Malaysia/ Singapore	**Accepted**
H2b	Motives for increasing consumption of seasonal and regional fruits and vegetables has significant effect on consumers' willingness to consume ecological food in Malaysia/ Singapore	**Accepted**
H3	Consumers' perception on green marketing strategies has significant effect on their willingness to adopt ecological food consumption behaviors in Malaysia/ Singapore	**Accepted**
H3a	Consumers' perception on eco-label has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore	**Accepted**
H3b	Consumers' perception on eco-brand has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore	**Accepted**
H3c	Consumers' perception on green advertisements has significant effect on their willingness to adopt green food consumption behaviors in Malaysia/ Singapore	**Accepted**

Table 5.1, continued

No	Hypotheses	Result
H4a	There is a significant difference between consumers' gender and their willingness to adopt ecological food consumption behaviors in Malaysia	**Accepted**
H4b	H4b: There is a significant difference between consumers' genders and their willingness to adopt ecological food consumption behaviors in Singapore	**Rejected**
H5a	There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Malaysia	**Rejected**
H5b	There is a significant difference between consumers' age groups and their willingness to adopt ecological food consumption behaviors in Singapore	**Accepted**
H6a	There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Malaysia	**Rejected**
H6b	There is a significant difference between consumers' education level and their willingness to adopt ecological food consumption behaviors in Singapore	**Rejected**
H7	There is a significant difference between consumers with different religions and their willingness to adopt ecological food consumption behaviors in Malaysia/Singapore.	**Accepted**

5.2 Limitation of the Study

The first limitation of this study is that it does not intend to infer the results to entire Malaysia, since it included only 350 Malaysian as the sample size. The same is true for Singapore as the sample size of population was 100. Larger sample size that covers larger geographical coverage can better represent the population of entire Malaysia and Singapore.

In addition, demographic issues which were considered in this study were age, gender, education and religion, while there are also other important demographics which can

presents more evidence for consumer differences such as income, and marital status, and household size of respondents.

Besides, considering the wide range of marketing techniques, this study merely included eco labels, eco brands, and advertisement as the effective green marketing techniques, while there are more effective tools to be considered which might have better effect on encouraging consumers to change their conventional behaviors towards more ecofriendly ones.

Moreover, the study was a comparative one between Malaysia and Singapore which are both located in the same region and they are neighboring countries. Therefore, there may be similarities between their residents, their attitudes and their preferences. Further research can be done comparing Malaysia with other countries including more differences.

Finally consumers' may lack information on the concept of some of the items for instance their knowledge about seasonal fruits and vegetables and they might just answer some of the questions without having sufficient knowledge about them.

5.3 Suggestion for Further Research

Further research might consider taking longitudinal study to see whether consumers will change their consumption patterns over a longer period of time rather than just claiming about their willingness to adopt such behaviors.

Besides, in this study motives for meat reduction and increase of consuming seasonal and regional fruits and vegetables were considered while further research might take some other

environmentally friendly activities and wider range of motives to get better and more complete results.

In addition, as Malaysia is a multicultural country, further studies might consider the effect of culture and religion in more depth on consumers' willingness in consumption of ecological and green food.

Moreover, this study was a comparative study between Malaysia and Singapore which are located in the same region. It is possible that further research consider other countries comparing to Malaysia as marketers would be able to get more information for entering to larger markets with more opportunities than a small market like Singapore.

Finally, other studies might consider the effect of knowledge on consumers' willingness for green food consumption which definitely would have a great effect on their choice as knowledge is an important criterion for any type of decision makings.

5.4 Implications

The implication of this study to the government is to formulate some types of green policies for the companies and enterprises in food industry such as providing incentives for producers of green food products which are really green in their production processes, to encourage consumers to buy products with eco-label or to buy eco-branded products.

Furthermore, the government should increase people knowledge through raising campaigns to promote public awareness about ecological food, and its benefits to the environment and to consumers.

Besides, findings of the present study can be used by private companies and marketers to gain more knowledge about consumer behavior in Malaysia and Singapore. This will provide them with valuable knowledge on how to penetrate the available target which are interested to consume green food.

The results will be also beneficial for companies in the food industry to initiate steps toward positioning their green brands and make use of appropriate advertising methods to take advantage of this growing market.

The companies and enterprises who are working in the field of establishing seminars and workshops can benefit from the result of current study by gaining information on different interesting areas which they can held seminars and workshops to increase public knowledge regarding green food.

Researchers and students who are interested in the same area can also benefit from the findings of this research for further study and research in similar area.