FACTORS INFLUENCING GREEN CONSUMERISM BEHAVIOUR AMONG PENANGITES

By
JAYAESWARI SANGARALINGAM

Dissertation Submitted to
Othman Yeop Abdullah Graduate School of Business
Universiti Utara Malaysia
in Fulfillment of the Requirement for the Degree of Doctor of Business Administration

November 2014

PERMISSION TO USE

In presenting this dissertation/project paper in partial fulfillment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library make a freely available for inspection. I further agree that permission for copying of this dissertation/project paper in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence by the Dean of Othman Yeop Abdullah Graduate School of Business. It is understood that any copying or publication or use of this dissertation/project paper or parts thereof for financial gain shall not be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis/dissertation/project paper.

Request for permission to copy or make other use of materials in this dissertation/project paper, in whole or in part should be addressed to:

Dean of Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

ABSTRACT

Environmental apprehension has demanded greater responsibility and consciousness amongst individuals to be sustainable in their everyday activities. To synthesize business strategy, it is essential to identify the factors that influence green behavior among consumers. The main purpose of this research is (1) to determine the factors that contribute to intention to green consumerism behavior; (2) to determine the mediating effect of intention on green consumerism behavior on factors contributing to green consumerism behavior and (3) to decide if there is a moderating effect of green advertisement on the relationship between intention to green consumerism and green consumerism behavior. This study consisted of six independent variables: moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control, a mediator: intention to green consumerism, a dependent variable: green consumerism behavior i.e. purchase behavior, conservation behavior and recycle behavior and moderating variable, green advertisement. A total of 17 hypotheses were developed. Regression was used to analyze the mediation and moderation effect. The population was Malaysian consumers and a mall intercept survey using systematic random sampling yielded 387 respondents who had shopped in hypermarkets and supermarkets in Penang. The results showed 13 hypotheses being supported. Results showed moral norm, environmental concern, perceived knowledge, perceived environmental responsibility and subjective norm has a significant relationship to intention. Intention has a significant relationship to behavior however, intention did not mediate the relationship between the independent variables and behavior. It was also found that perceived behavioral control has a significant direct relationship with behavior. Moderating effect of green advertisement was significant, there was a quasi-moderation between intention and conservation behavior and intention and recycle behavior. The findings of this study while contributing to the body of knowledge, may also assist policy makers and marketers in their sustainability effort.

Keywords: green marketing, green consumerism, sustainability

ABSTRAK

Kebimbangan alam sekitar telah menuntut tanggungjawab dan kesedaran yang lebih besar di kalangan individu untuk menjadi lestari dalam kegiatan harian mereka. Untuk mensintesis strategi perniagaan, adalah penting untuk mengenal pasti faktor-faktor yang mempengaruhi tingkah laku hijau di kalangan pengguna. Tujuan utama kajian ini ialah (1) untuk menentukan faktor-faktor yang menyumbang kepada hasrat untuk tingkah laku kepenggunaan hijau; (2) untuk menentukan kesan mediator niat pada tingkah laku kepenggunaan hijau kepada faktor-faktor yang menyumbang kepada tingkah laku kepenggunaan hijau dan (3) untuk membuat keputusan jika terdapat kesan moderator iklan hijau kepada hubungan antara niat untuk kepenggunaan hijau dan tingkah laku kepenggunaan hijau. Kajian ini terdiri daripada enam pembolehubah bebas: norma moral, kebimbangan alam sekitar, pengetahuan, tanggungjawab alam sekitar, norma subjektif dan kawalan tingkahlaku, mediator: niat untuk kepenggunaan hijau, pembolehubah bersandar: tingkah laku kepenggunaan hijau iaitu pembelian, tingkah laku pemuliharaan dan mengitar semula dan moderator, iklan hijau. Sebanyak 17 hipotesis telah dibangunkan. Regresi digunakan untuk menganalisis mediation dan moderation. Peserta adalah pengguna di Malaysia dan tinjauan memintas pusat membeli-belah secara rawak sistematik menghasilkan 387 responden yang telah membeli-belah di pasar raya besar dan pasar raya di Pulau Pinang. Keputusan menunjukkan 13 hipotesis disokong. Keputusan menunjukkan norma moral, kebimbangan alam sekitar, pengetahuan, tanggungjawab alam sekitar dan norma subjektif mempunyai hubungan yang positif dan signifikan dengan niat tingkahlaku hijau. Niat tingkahlaku hijau juga mempunyai hubungan yang positif dan signifikan dengan tingkah laku, namun bagaimanapun, niat tidak menjadi pengantara hubungan antara pembolehubah bebas dan tingkah laku. Keputusan analisa juga mendapati bahawa kawalan tingkahlaku mempunyai hubungan langsung yang signifikan dengan tingkah laku. Bagi kesan moderator, didapati bahawa iklan hijau adalah kuasi-moderator antara niat dan tingkah laku pemuliharaan, dan niat dan tingkah laku kitar semula. Hasil kajian ini di samping menyumbang kepada badan pengetahuan, juga boleh membantu pembuat dasar dan pemasar dalam usaha kemampanan mereka.

Kata kunci: pemasaran hijau, kepenggunaan hijau, kelestarian

ACKNOWLEDGEMENT

> No matter what conditions you encounter in life, your right is only to the works--not to the fruits thereof. You should not be impelled to act for selfish reasons, nor should you be attached to inaction - *Bhagavad Gita 2.47*

My first thanks is to Krishna for it is Him who made me who I am. My parents who are not here to see this, I thank them both for allowing me to be me. They gave me the freedom to choose my own path in life, without their love, understanding, guidance and blessings, I wouldn't be who I am today.

This work is the result of the guidance by my mentor, Dr. Filzah Md Isa, whose questions and comments have significantly presented valuable insights to the thesis. Her patience and motivation are highly appreciated and treasured and I thank her for being a wonderful supervisor.

To my employer and colleagues in DISTED College, Penang, a very big "thank you" for your encouragement and moral support especially on days when my spirits were down.

My friends who stood by me and gave me their shoulders to lean on and the strength to go on when I was almost losing it, no words could express my gratitude to all of you.

Finally, to my family, especially my sister in law, Endong Tapu and my two nieces, thank you for everything. I wouldn't have done it without your understanding and sacrifices. Thank you for being very supportive in my quest for knowledge.

Jayaeswari Sangaralingam

November 2014

TABLE OF CONTENTS

CHAPTER FIVE: DISCUSSION AND CONCLUSION

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The growing environmental concern amongst the public has demanded organizations, businesses and individuals to be responsible and conscious in their everyday activity not to cause any harm to the environment. Ironically, most environmental problems are caused by the way people lived and continuously damaging the environment. The impending worry about the future state of the environment had certainly prompted some to aim for a sustainable living thus creating a trend, the green consumerism trend, whereby consumers seek products that are environmentally friendly. The need for environmentally friendly product then created the niche for strategic environmental marketing activities thus prompting manufactures and retailers to produce and adopt green policies in their product: ensuring pricing, promotion and distribution activities were eco-friendly. As a consequence, the need to develop a sustainable business became crucial for survival and hence identifying the critical factors that influence green living behavior of people would therefore enable marketers to synthesize their business strategy and thereon convene their business sustainability.

A green consumer is someone who knows how a product was developed and produced, how it will be used and finally how it will be disposed in an environmentally sound manner. Green consumerism generally means reducing carbon footprint, recycling, reducing energy consumption, and purchasing product that are proven to be environmentally friendly (Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997). Both

psychological and sociological factors identify a green consumer and they include individual belief to preserve the environment, concern about the deteriorating environment, perceived knowledge of the environment, responsibility towards the environment and the influence of family and friends. This research main aim is to establish the factors that influence green consumerism. The study also aimed to find if green advertisement would moderate the relationship between intention to green consumerism and green consumerism behavior. The findings of this research could consequently aid in synthesizing strategic green marketing policies.

1.1 Background of Study

The world is riddled with environmental issues. Concern over global warming, extinction of wildlife, destruction of flora and fauna, natural calamities, extreme weather with very cold and long winters or intensely hot summers with fatal heat-wave resulted to the greenhouse effect. The severity of this situation was aptly written by Speth (2008) who once headed the United Nations Development Program (UNDP) in his book *The Bridge at the Edge of the World* which stated the following:

> "Half the world's tropical and temperate forests are now gone, about half the wetlands and a third of the mangroves are gone…marine species are disappearing at rates about a thousand times faster than normal…over half of the agricultural land in drier regions suffers from some degree of deterioration and desertification. Persistent toxic chemicals can now be found by the dozens in essentially each and every one of us…"

Ecological footprint as analyzed by the New Economics Foundation (NEF) in the mid 80s established that humans are inept to sustain the present global resources (NEF 2006) and the trend has shown no reduction ever since (Tukker, Cohen, Hubacek & Mont,

2010). The observations from Speth (2008) and NEF (2006) are just one of the many warnings on the state of the environment which pressed for dire actions to create a sustainable lifestyle. It has come to a point that everyone has to be held responsible to the environment, both globally and locally, to care and preserve the environment and its natural resources.

Issues concerning to environmental problems had been rigorously debated and confronted by the leaders of the world year in and year out and many have been talking about solid waste management, bio-waste management, pollution of air, water or land, carbon footprint and global warming amongst others, but, it was not until in 1992 at the Earth Summit held in Rio de Janeiro that most nations in the world recognized that there is an inherent problem with sustainability especially in consumption and production in industrialized countries and developing countries (UNDESA, 1992) and the same issues are still being debated in the Earth Summits till now.

However, scholars have rigorously researched issues pertaining to environmental problem, for instance, Ramlogan (1997) identified the results of environmental degradation as global warming, pollution of rivers and the sea, noise pollution, acid rain and other nature harming substances. Grunert (1993) added on to this by reporting that private household activities contribute an average of 40 percent environmental degradation annually. Both Ramlogan (1997) and Grunert (1993) stressed that that the environmental problem is not just a global issue but a local issue that needs to be addressed immediately. In reverence with that, from the Malaysian context, among the

top environmental problems that need to be dealt instantaneously include solid waste management and air pollution.

1.1.1 Solid Waste

Referring to our present habits had made researchers to claim that three planets would be required to support energy and natural resources if the entire population of earth is to consume at European levels whilst more than five planets would be necessary if the entire population were to consume like the Americans (Tukker *et al.,* 2010). Solid wastes from the western countries are on a rise and if no corrective actions on waste management are implemented sternly, degradation of the environment will escalate exponentially. Subsequently, the 'side-effect' of urbanization and economic development in countries especially Asian countries also contributed to the increase of solid waste issues. A research conducted by the World Bank in the year 2000, showed that urban areas in Asia produced approximately 760 thousand tonnes of solid waste in 1999 and it was estimated that in the year 2025, this number would increase to 1.8 million tonnes of waste per day. Table 1.1 shows the data on urban waste generated in 1999 and the estimated waste to be generated in 2025 for 17 developed and developing countries in Asia. The data on Malaysia shows that 0.81kg of waste is generated by a Malaysian daily and it is estimated that in the year 2025, a single Malaysian will generate 1.4kg of waste in a day.

Table1.1

Urban Waste Generated in 1999 for Selected Countries

Country	Solid waste generation 1999 kg/capita/day	Estimated solid waste generation 2025 kg/capita/day
Myanmar	0.45	0.60
India	0.46	0.70
Bangladesh	0.49	0.60
Nepal	0.50	0.60
Philippines	0.52	0.80
Vietnam	0.55	0.70
Mongolia	0.60	0.90
Lao PDR	0.69	0.80
Indonesia	0.76	1.00
China	0.79	0.90
Malaysia	0.81	1.40
Sri Lanka	0.89	1.00
Thailand	1.10	1.50
Singapore	1.10	1.10
Japan	1.47	1.30
Korea	1.59	1.40
Hong Kong	5.07	4.50

Source: Urban Development Sector Unit, East Asia and Pacific Region, World Bank, (2000)

Solid waste as mentioned in Table 1.1 would encompass for instance waste from food, paper, plastics, textiles, diapers, leather, wood, glass, metals, ashes, electronics, batteries, and industrial waste amongst others. Data from the World Bank (2000) shows that it is estimated that developing Asian nations such as Myanmar, Indonesia and Vietnam will continue to produce more waste per day per capita as compared to developed nations such as Korea, Hong Kong, Singapore and Japan whereby the estimated waste is expected to reduce. Ramayah, Lee and Mohamad (2010) highlighted the fact that most developed countries have taken into consideration of the deteriorating environment, and have incorporated into their policies and economies for a sustainable future by reducing solid waste generation per capita.

In addition, Røpke (1999) explained that environmental degradation is motivated by excessive production of solid waste and unfortunately this trend is catching up in Malaysia too. Municipal solid waste generated in Malaysia has increased more than 90 percent in the past decade and this increase was attributed to rapid urbanization, migration to cities from villages or small towns and the change in consumption pattern (Periathamby, Hamid & Khidzir, 2009). Table 1.2 presents the statistics on municipal waste generated in cities in Malaysia from 1970 to 2006.

Table 1.2
Municipal Waste Generation in 10 Major Cities in Malaysia from 1970 to 2006

Cities	Solid waste generated (tonnes/day)				
	1970	1980	1990	2002	2006
Kuala Lumpur	99	311	587	2754	3100
Johor Bharu	41	100	175	215	242
Ipoh	23	83	162	208	234
Georgetown	53	83	137	221	249
Klang	18	65	123	478	538
Kuala Terengganu	9	62	121	137	154
Kota Bharu	9	57	103	130	146
Kuantan	7	45	85	174	196
Seremban	13	45	85	165	186
Melaka	14	29	47	562	632

Source: Periathamby, Hamid and Khidzir (2009)

Data in Table 1.2 indicates the increment in the solid waste generation in major cities in Malaysia. A drastic escalation in the amount of municipal waste was observed in cities like Kuala Lumpur and Georgetown which showed an increase of over 369 percent and 61 percent respectively over a span of 12 years – 1990 to 2002. Penang's biggest city, Georgetown, shows that in the year 1970, 53 tonnes of solid waste were disposed per day and then increased to an alarming 249 tonnes of solid waste thrown out in a day in the year 2006 which is an increase of 370 percent. Periathamby *et al.* (2009) attributed this

occurrence to a couple of factors: first the affordability of consumer goods and secondly the consumption habit of the consumers today.

Further on, a research on the recycling habits in Malaysia by Lim (2009) showed that Malaysians dump an average of RM163 million valued of recyclable sources in plastic forms in a year and according to the Solid Waste and Public Cleansing Corporation, every household in Malaysia dumps an average of three tonnes of household waste every day which is enough to fill up half of Peninsular Malaysia within a year. Moreover, Penangites alone generate about 1,500 to 1,600 tonnes of solid waste per day, which translate to that every Penangite generates about one kilogram of solid waste per person per day (Lim, 2009).

Chang (2008) listed the contributors of Penang's solid waste generators in Table 1.3 which shows the breakdown of solid waste generated by various sources such as industries, hotels, education institutions, among others, in Penang. The main contributor of solid waste in the state was from the industrial zone, followed by household waste and waste from the wet market. Higher education institutions which include universities and colleges contribute over 15 tonnes of waste per day and schools in the state of Penang contribute to 2.8 tonnes of waste per day. Even though the waste from the industries are the highest contributor to the overall waste production in Penang, but over 95 percent of the waste generated in the industrial zone is recyclable whereas for household waste, only about 49 percent of the waste is recyclable.

Table 1.3
Solid Waste Generation by Source, 2005 Penang Island

Source	Amount of Waste (tonne/day)	Organic Waste (tonne/day)	Recyclable Waste (tonne/day)	Non-recyclable Waste (tonne/day)
Industrial	246.4	6.6	234.1	5.7
Household	98.3	35.1	47.7	15.5
Wet market	40.6	37.5	3.1	0.1
Hawkers	19.7	18.7	0.8	0.2
Hotel	17.0	15.8	1.1	0.0
Universities	14.9	11.7	n/a	11.3
School	2.8	1.7	1.1	0.0
Hospital	2.3	1.5	0.8	0.0
Hypermarkets	0.9	0.2	0.7	0.0
College	0.3	0.1	0.2	0.0

Source: Chang (2008)

1.1.2 Air Pollution

Air pollution has been a much talked about environmental problems as cities around the world contribute directly to about 50 to 60 percent of greenhouse gas emissions (Tibaijuka, 2009). The International Energy Agency (2009) forecasted that without a stringent policy on Carbon Dioxide (CO_2) releases, at the global level there will be 65 Gigatonnes (Gt) of CO_2 in 2050, which would be an increase of 132 percent from 28Gt of CO_2 in 2006 (Tukker *et al.*, 2010). The mandatory target for CO_2 release set by by both the Intergovernmental Panel on Climate Change (2007) and the Stern Report (2007) is at 5Gt per annum globally but data shows we are at above critical level.

Subsequently, at the Climate Change Conference 2009 in Copenhagen, the United Nations data showed that Malaysia's carbon emissions in 2006 stood at 187 million tonnes or 7.2 tonnes per capita which is one of the world's highest per capita. This data triggered the Malaysian Premier, Datuk Seri Najib Tun Razak to announce to the world that Malaysia will reduce its carbon dioxide emissions to 40 percent by the year 2020

(Bernama, 2009). Table 1.4 presents the air pollution data for selected capitals or cities of the countries of the world measured in micrograms per cubic meter (µg/m^3). Particulate matter refers to fine suspended particulates less than 10 microns in diameter (PM10) that are capable of penetrating deep into the respiratory tract and causing significant health damage.

Table 1.4

Air Pollution Data for Country- PM10 concentrations (micro grams per cubic meter) in residential areas of cities with population larger than 100,000

Country, City	City population in thousands, 2005	Particulate matter (µg/m^3), 2004
Egypt, Cairo	11,128	169
India, Delhi	15,048	150
Indonesia, Jakarta	13,215	104
China, Beijing	10,717	89
Thailand, Bangkok	6,593	79
Singapore, Singapore	4,326	44
Japan, Tokyo	35,197	40
Philippines, Manila	10,686	39
Brazil, Rio de Janiero	11,469	35
Malaysia, Kuala Lumpur	1,405	29
Germany, Berlin	3,389	22
United Kingdom, London	8,505	21
United States, New York	18,718	21
South Africa, Cape Town	3,083	16
New Zealand, Auckland	1,148	14
Australia, Melbourne	3,626	12

Source: *World Development Indicators, The World Bank (2007)*

Malaysia's (Kuala Lumpur) air pollution for the year 2004 is at 29µg/m^3, and is higher than usual when compared to countries with almost the same population size such as New Zealand (Auckland) and Denmark (Copenhagen). The high reading of Malaysia's air pollution index raised concerns about the air safety level in Malaysia.

Table 1.5 gives a breakdown of the air index for major cities in Malaysia which has a population of over 100,000 residents.

Table 1.5
Air Particle Matter Data for Cities in Malaysia- PM10 concentrations (micrograms per cubic meter) in residential areas of cities with populations larger than 100,000

City	2000 population	1999 PM10 concentration ($\mu g/m^3$) *	PM10 concentration on 14 March 2011[1] ($\mu g/m^3$) **	PM10 concentration on 10 Ma7 2013[2] ($\mu g/m^3$) **
Seremban	257,839	21	57	49
Kuantan	268,875	20	54	33
Kelang	491,913	21	53	n/a
Kota Bahru	313,406	41	51	52
Kuching	197,350	27	50	24
Kuala Terengganu	305,464	36	49	50
Georgetown	293,063	22	45	48
Kota Kinabalu	278,512	17	37	27
Petaling Jaya	469,859	23	37	n/a
Kuala Lumpur	1,529,698	24	36	30
Johore Bharu	590,799	25	35	56
Ipoh	626,220	19	34	40
Taiping	249,533	18	31	24

Source: ** Pandey, Wheeler, Ostro, Deichmann, Hamilton and Bolt (2006)*
*** The Department of Environment, Malaysia (2011, 2013)*

A group of researchers at the World Bank monitored the air pollution in developing countries and found that air pollution is a major health hazard in developing countries (Pandey *et al.*, 2006). The report showed that for the year 1999, Georgetown, Penang, with a population of 293,063 had an average air particle pollution of 22$\mu g/m^3$ compared to Kuala Lumpur with a population of 1.5 million people with an air particle

[1] http://www.doe.gov.my/apims/index.php?gmap=load&date=2011-03-14
[2] http://www.doe.gov.my/apims/index.php?gmap=load&date=2013-05-10

pollution index of only 24μg/m^3. More than 10 years later, the air pollution index for Penang had increased by over 104 percent, i.e. 45μg/m^3, whereas the air pollution index for Kuala Lumpur has increased by 50 percent, i.e. 36μg/m^3. The United States Environmental Protection Agency's (US EPA)[3] annual fine particle standard as of 2006, stated that in an environment that is clean and safe to breath, the fine particle index should be at 15μg/m^3 or less. It is distressing to note that almost all major cities in Malaysia had recorded readings greater than the 30μg/m^3 which is more than double the standard set by the US EPA.

1.1.3 Economy

Most developing countries including Malaysia have great responsibility in maintaining and ensuring a balance between economic growth and industrial growth and environmental sustainability (Tan & Lau, 2010). The consequences of growth without proper control can cause environmental harm and scholars had highlighted environmental degradation can cause psychological distress to humans (Kahn, 2007; Lappé & Perkins, 2004; Pastor, Sadd & Morello-Frosch, 2002; Sobel, 1999). With the realization of the consequences of the economic and industrial growth to environmental degradation, the Malaysian government in its Ninth Malaysian Plan (2006 – 2010) attempted to tackle this problem by allocating a total of RM1130 million of which was distributed for cleaning, preserving and beautifying rivers; coastal management; reforestation and management of wildfire and protected areas.

[3] http://www.epa.gov/pm/standards.html

Just for the year 2007 only, the Penang Municipal Council had spent RM57.6 million in solid waste management and this account for 30 percent of the total income generated by the local government. For the year before that, the municipal council spent RM30.2 million for solid waste management. The State Local Government and Traffic Management Committee reported that in the year 2010, a total of RM164 million was spent on waste management which is 37 percent of the revenue generated by the Penang Municipal Council, a significant increase in three years, from 2007 to 2010. Table 1.6 shows the fiscal gap in the state of Penang to be over RM2.27 billion over the years 2006 to 2020. The chairman of the committee, Mr Chow Kon Yeow suggested that if Penangites are able to reduce on the waste, the state would be able to save money and use it for upgrading infrastructure and develop more public amenities (Tan, 2011).

Table 1.6
Fiscal Gap for Penang from 2006 to 2020

	2006 Cost (RM Million)	Required Expenses 2020 (RM Million)	Fiscal Gap (RM Million)
MPPP	661	1,687	1,026
MPSP	1,323	2,563	1,241
Total	1,984	4,251	2,267

Source: Chang (2008)

It is estimated that both the municipal counsels, Majlis Perbandaran Pulau Pinang (MPPP) and Majlis Perbandaran Seberang Perai (MPSP) will spend around RM2.27 billion in the next 10 years to collect, transport and dispose solid waste in the state. On the initiative of the Malaysian government, a nationwide awareness campaign was launched on 1st January 2011. The minister from Domestic Trade, Cooperatives and Consumerism Ministry of Malaysia, Dato' Sri Ismail Sabri bin Yaakob, launched a simultaneous nationwide campaign to encourage the general public to live a healthier and safer life. The intention of the campaign was to educate Malaysians on conserving their

environment as well as to live a sustainable lifestyle. The campaign further supported the Penang state government's program to minimize the use of plastic bags in the state. Penang was one of the first state in Malaysia to aggressively start on the cleaner, safer and healthier campaign. This campaign was one of the triggers for this research as it motivated the researcher to find the effect of this campaign on Malaysian particularly Penangites.

The state government introduced a free-plastic bag day on every Monday since 1st of July, 2009 in which all retail shops were encouraged not to use plastic bags to pack the their customers' purchases. As the campaign was effective and widely practiced by major stores in the state, the state government went a step further and on 1st January 2010, retail shops were plastic bag free from Mondays to Wednesdays. And since January 2011, the state government implemented a "no free plastic bags" campaign on every day of the week. This move was widely accepted by retailers as well as consumers, as today's consumers who are environmentally conscious see this movement not as a fad but something to stay (Peattie & Crane, 2005).

1.2 Problem Statement

Malaysians produce over 23,000 tonnes of waste per day, and this amount is expected to rise to 30,000 tonnes by the year 2020 with only five percent of this waste expected to be recycled (Global Environment Center, 2011). In Penang, more than 450 tonnes of waste are produced each day by industries, households, wet markets, hawkers, education centers and hospitals put together (Chang, 2008). This present study has taken

into focus on Penang as the center of study because the state has been one of the major contributors to the Malaysian economy development particularly in the tourism industry. Due to lots of negative news and comments, the impact could implicate the tourism industry in the future (Sinar Harian, 2013). This alarming rate of increase of solid waste production in Penang needs attention as this issue can manifest to be a great problem in the future.

It was a proud moment for Penangites when Georgetown was announced as one of UNESCO's Heritage City in the year 2008. The state was in a euphoria, the recognition would boost the tourism industry, the island's beautiful beaches and rich culinary trails were main attracts for tourist however the rubbish were an eyesore. In a spring-cleaning drive organized by the state government in the year 2011 saw a total of 25 tonnes of rubbish collected in the vicinity of the city in a day (Chow, 2011). The Chief Minister of Penang, Mr. Lim Guan Eng mentioned that "There must be close cooperation between the people, the public and private sectors if we are to successfully improve the quality of life and turn Penang into a greener and cleaner environment for all to enjoy" (The Star, 2010b). This was supported by the Tourism Minister, Ng Yen Yen who echoed that cleanliness and protecting the environment are two crucial elements for Malaysia in order to become a major tourist destination in the world (Gasper, 2011). Part of the blame of the lack of cleanliness in Penang and the poor solid waste management is the inability to enforce cleanliness laws. Besides that, lack of civic consciousness, such as throwing of rubbish indiscriminately and misuse of recycling bins are couple of reasons that needs to be addressed immediately.

Air pollution is becoming a tragic issue in Malaysia and air is one of the most indispensable substances for survival, why then are we still contributing to this problem? Silverman *et al.* (2010) in their research found that for a 10µg/m^3 rise in small particle air pollution, the number of cardiac arrests rises from four-to-10 percent as well and this pollution related cardiac arrests occurrences have become a norm when small particle levels were high. Anderson, Atkinson, Peacock, Marston and Konstantinou (2004) posit that sufficient studies of admissions for respiratory diseases are in those aged 65 years and over. These problems are akin in Malaysia too; the particular matter count rises dramatically annually, especially in urban areas, the increase is definite.

Nearly 50 percent of the revenue generated by the Penang Municipal Council is spent on waste management. To collect and dispose one tonne of garbage, the state government had to spend more than RM110 which equates to RM1.98 million to RM2.34 million per day or RM854 million per year for generating 18,000 tonnes of solid wastes per day in Penang (Chandravathani, 2006). This huge expenditure can be reduced if residents were willing to practice recycling, reducing and reuse their waste. The money saved can be used to upgrade facilities in the state. With this statistic, the government had realized the need to educate people the meaning and benefits of green conservation behavior. A comparison made by Periathamby *et al.* (2009) on solid waste management policies implemented in four Asian countries; Malaysia, Singapore, Japan and Philippines found that only Malaysia had no educational campaigns on managing solid waste incorporated into their formal education syllabus. Malaysians are not instilled from young to be aware of sustainability. This is unfortunate to Malaysians as studies had shown that

environmental and sustainability education from young was able to create responsibility and care to the surrounding environment besides acknowledging the consequences of their actions or inactions (Bradley, Waliczek & Zajicek, 1999; Salequzzman & Stocker, 2001). Nevertheless awareness is being introduced to Malaysians nowadays and it is via green advertisements that the government tries to reach out to the nation. It is therefore interesting to know how effective are these green advertisements in bridging the gap between intention and behavior of green living and this study hence was undertaken to see the moderating effect of green advertisements as an agent to transform a person's though or intention to be a green consumer to the actual behavior of green living.

To summarize on the above issues, it can be said that the problems faced by the local authorities to curb pollution issues and environmental degradation issues in Penang are affecting the economic development of the state (Chandravathani, 2006; Chang, 2008; Chow, 2011). A study needs to be done to understand the factors that influence the pro-environmental or otherwise behavior of the people in the state and by identifying these factors the local authorities can take right and adequate actions to promote greater sustainability and move forward to green living.

Besides the practical issues that have been highlighted in the preceding paragraphs, there is also a need to understand the inadequacy of the theory of planned behavior. Hale, Householder and Greene (2003) argued that the reliance of situation-specific cognition to explain the specific behavior had excluded any influence that could result from emotion, spontaneity, habit or as a result of cravings to explain behavior. The

findings by the researchers were in-line with Nataraajan and Bagozzi (1999) who posit that cognitive approaches rely upon the assumption of the consumer being a rational decision maker, and thus neglecting the role of emotion in the decision making process. The theory of planned behavior by Ajzen (1991) has its shortcomings to predict behavior especially green behavior as green behavior can be classified as both cognitive and non-cognitive where in retrospect, the theory only explains cognitive behavior. Moreover, the theory of planned behavior has a drawback, it only limited attitudes, subjective norms and perceived behavioral control to be the determinant for intention, however, researcher in the past had highlighted the contribution of other factors that influence behavior, especially when it comes to pro-environmental behavior. Empirical studies showed that only 40% of the variance of behavior could be explained using the theory of planned behavior (Ajzen, 1991; Werner, 2004). Werner (2004) added that TPB is a predictive model that predicts an individual's action based on certain criteria, but individuals do not always behave as predicted by those criteria.

Issues regarding environment detrimental in Malaysia has been talked and various campaigns been launched to address this issue but the success measured is close to nothing. Thus, questions still arise: are we ignorant of our moral obligation? Are we not concerned with our environment? What are the reasons for our behavior towards the environment? What are the factors that influence our behavior? This study therefore attempted to answer these questions by identifying whether Malaysians have environmental responsibility, moral obligation and concern over the environment that is necessary to ensure to have clean air to breath-in and subsequently a healthier live.

1.3 Research Questions

Given the recent consumer trend that is to be involved in green consumption, the study begins with the question of whether the consumers' value orientations explain their environmentally conscious behaviors, including their responses to environmental claims in advertising and intentions to green consumerism. The question is what are the factors that influence pro-environmental behavior among Malaysians? From the Malaysian's context, are intentions translated to action when it comes to green living? Does advertisement play a role in converting intention to action? This research was therefore undertaken to find answers to these questions, specifically to find the confounding factors that would explain green consumerism behavior among Malaysians, particularly Penangites. The main purpose of this research is (1) to determine the factors that contribute to intention to green consumerism behavior; (2) to determine the mediating effect of intention on green consumerism behavior on factors contributing to green consumerism behavior and (3) to decide if there is a moderating effect of green advertisement on the relationship between intention to green consumerism and green consumerism behavior. This research therefore aimed to answer specifically the following questions:

1. Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism?
2. Is there a significant relationship between intention to green consumerism and green consumerism behavior?

3. Does intention to green consumerism mediate the relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior?
4. Is there a significant relationship between perceived behavioral control and green consumerism behavior?
5. Does green advertisement moderate the relationship between intention to green consumerism and green consumerism behavior?

1.4 Research Objectives

The three main objectives of this study were: is (1) to determine the factors that contribute to intention to green consumerism behavior; (2) to determine the mediating effect of intention on green consumerism behavior on factors contributing to green consumerism behavior and (3) to decide if there is a moderating effect of green advertisement on the relationship between intention to green consumerism and green consumerism behavior. The specific objectives of this study are:

1. To determine if there is a relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism.
2. To determine if there is a significant relationship between intention to green consumerism and green consumerism behavior.

3. To determine if intention to green consumerism mediate the relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism.
4. To determine if there is a significant relationship between perceived behavioral control and green consumerism behavior.
5. To examine if green advertisement moderates the relationship between intention to green consumerism and green consumerism behavior.

1.5 Significance of Study

The migration of people from rural areas to urban locality has seen advances in lifestyle, especially in education, communication, information technology, transportation and infrastructure. Day by day people seek convenience, convenience that is attainable at their doorstep but at the same time, these people are also willing to go the extra mile to attain something valuable and healthier, i.e. organic products. This is possible as the standard of living in Malaysia has improved progressively as compared in the past. One contributing factor for this improved lifestyle is the change in the dynamics of a household, when it used to be a single breadwinner now we see a rise in double income households and smaller family size, therefore contributing to lifestyle change in the needs and wants of consumers. Moreover, as the consumers' disposable income level is higher now thus the willingness to spend on personal needs which include consuming good quality and healthy products. Furthermore, media exposure on green habits and the peril

of environmental degradation encouraged consumers to influence their convention on living a healthier lifestyle.

It was therefore deemed important to study green consumerism behavior of consumers, i.e. the factors that predisposed Malaysians to change their inclination to a pro-environmental behavior. Once the factors were identified, it would be an essential element in designing a marketing strategy that would satisfy Malaysian consumers' needs and wants. Ergo, this study was expected to contribute to the theoretical, methodological and practical sides of the green consumerism behavior amongst Malaysians, particularly Penangites.

1.5.1 Theoretical Significance

This research will indefinitely add to the body of knowledge and literature with respect to the underpinning theory, the Theory of Planned Behavior. There are several pro-environmental theories that could be used to predict and explain environmental behavior are for example Responsible Environmental Behavior by Hines, Hungerford and Tomera (1987); Self Determination Theory by Deci and Ryan (2000); and Environmental Significantly Behavior by Stern (2000). However a meta-analysis by Osbaldiston and Schott (2012) revealed that these theories failed to predict and explain environmental behavior. Conversely, in Azjen's (1985) Theory of Planned Behavior (TPB), behavioral intention is controlled by a dynamic mix of the attitude, subjective norm and perceived behavioral control variables. Behavior was derived largely from behavioral intention, but is mediated to some degree of perceived behavioral control (Ajzen, 2002). A meta-

analytic review by Conner and Armitage (1998) illustrated TPB to provide strong support for the predictive validity of the theory as well as provide a 'parsimonious explanation of the informational and motivational influences on behavior'. There are however, a number of limitations which bound the scope of use and the extent to which it can be deemed to be a complete model of consumer behavior, for example, TPB failed to take into account the perception of environmental responsibility and individual moral obligation in preserving the environment. Past research had suggested that the contributing factors of attitude, subjective norm and perceived behavioral control did not completely attribute in the intention-behavior relationship (Amireault, Godin, Vohl & Pérusse, 2008; Godin, Shephard & Colantonia, 1986; Sheeran, 2002). Therefore, this present study incorporated three new variables to the basic framework of TPB that is moral norm, perceived knowledge, perceived environmental responsibility to predict green consumerism behavior amongst Malaysians. Moral norm is a personal value system that is the desirable goals or principles of an individual's life. Scholars had in the past made general proclaims on values, from being the foremost an important element when consumers make their purchase decision (Hoyer & MacInnis, 2004) to values playing a primary role in behavior (Reser & Bentupperbaumer, 2005) to values affecting people's beliefs and hitherto affecting their behavior (Stern, 2000). The addition of perceived knowledge to the TPB theory in this present study was because knowledge has been agreed as one of the significant predictor of environmentally friendly behavior (Chan, 1999) and as claimed by the past literature on environmental behavior, cognitively driven behavior had contributed to the increase in environmental knowledge and skills hence resulting higher commitment to pro-environmental behaviors (Hungerford & Volk, 1990).

Perceived environmental responsibility was added to the TPB framework to address the sense of responsibility one adopts which incorporates meanings and expectations associated with a relevant categorization into the self, thus forming a set of identity standards that guide identity-relevant behaviors as scholars found that on environmental responsibility is socially developed and manifested according to the individual's reflection on the social relationship, experiences and structures of the culture or society (Gill, 2012; Stets & Burke 2000. Furthermore Lai (2000) and Lee (2009) found that Asians had acquired more environmental knowledge and awareness of environmental problems over the years and these has changed their perception to the environment and thus it is vital to include environmental responsibility to understand their green intention and green behavior.

One of the limitations of TPB is the strength of the relationship between intention and behavior, a gap which can be explained by the differences in cognitions or some other unidentified factors. According to Baron and Kenny (1986) the inconsistence relationship between intention-behavior can be strengthen with the introduction of a third variable, the moderator variable. The moderator variable is expected to help to understand the gap between the intention and behavior relationship and highlight the direction and/or the strength of the relationship. It has been proved by past research that the proximal determinant of behavior is the intention to perform it and in reference to Baron and Kenny (1986) a moderator variable affects the relationship between two variables and this present research attempted to test the role of green advertisement as the

accessibility cognition to strengthen the relationship between green intention and green behavior among Malaysians.

This present study would add to the body of knowledge by incorporating behavior as a multivariate, composing both the conscious and sub-conscious behavior. It is understood that TPB had provided strong theoretical and empirical evidence on behavior but however the theory proclaims only situation-specific cognition as a direct determinant of a specific behavior. This study therefore firstly attempted to confirm whether the Theory of Planned Behavior will be able to explain and predict the green conscious behavior of Malaysian and secondly attempted to fill the theoretical gap by stating that behavior is both cognitive and habitual and tried to identify the factors (moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control) that would influence the cognitive behavior and habitual behavior.

Another gap this study intended to fill is the application of TPB in the Malaysian culture. Solomon, Bamossy, Askegaard and Hogg (2006) posit that the effectiveness of the theory of planned behavior in the Western culture had been tested and proven applicable but, however it is not clear that the applicability of this theory in other cultures would be effective. Nevertheless, a few cross-cultural studies were conducted and the findings showed that the TPB is not consistently effective in different cultures (Bagozzi, Wong, Abe & Bergami, 2000), henceforth this study would add to the body of knowledge on the effectiveness and applicability of TPB in the Malaysian context.

1.5.2 Practical Significance

From the practical aspect, the significance of this study was seen from the view of a new genre of consumers, the green consumers. Gurău and Ranchhod (2005) discovered that consumers in this generation actually demand corporations to be socially responsible and commanded corporations to provide safer and healthier product. According to Ottman (1993) this bold assertiveness from consumers emerged in the early 80s when consumers' sentiments provoked marketers to provide products that were environmentally friendly and hence the mechanisms for environmentally friendly organizations and new product innovations were kicked-off. It was from the year 2000 onwards that the frenzy for green products and green lifestyle took a turn for good for mankind in the Western world (Ottman, Stafford & Hartman, 2006). The obligation to follow the western footsteps by going-green extended to the Asian region and the reason for this new path were the alarming threats to the environment that alerted both the local governments and citizens (Lee, 2008). However, this demand to be green living by the consumers saw new opportunities for organization, Pujari and Wright (1996) found that by responding to this ecologically concerned demand, an organization was forced to be proactive and implement an environmentally friendly strategy or a green strategy at all the levels i.e. from conception to the disposal of the product.

From the Malaysian viewpoint, environmental problems are mostly associated with the small and medium-sized industries. These industries usually fall behind on the latest technologies, have limited expert skills, less capital investment, and lower profit margins and productivity (Green Purchasing Network Malaysia, 2003). It was therefore

professed that practitioners would be able to synthesize the findings of this thesis to understand the importance of green consumerism and adopt and adapt to consumers' needs and wants. The findings of this thesis would present the factors that contribute to green consumerism behavior and besides that, practitioners can also market their products effectively as they could understand the moderation effect of green advertisement between intention and behavior.

This present study was also believed to be able to answer the Malaysian government's call to get Malaysians to be seriously involved in as many green projects as possible, namely in green technology, promoting green business and encouraging green consumerism. The ruling government wants the country to improve its ranking in the environmental ratings as this ranking is an important indicator to provide a benchmark for countries in establishing their environmental policy goals worldwide (GreenTech Malaysia, 2010). This urging from the Malaysian government to go green came about when Malaysia was ranked 27 out of 163 countries in 2008 but dropped drastically to rank 54 in the year 2010 in the World Environmental Performance Index (Yale University, 2011). This big plunge alerted the seriousness of the issue and hence provoked and alerted the Malaysian government to regain and improve its ranking if the country wants to achieve its goal to be a fully developed country by the year 2020. The contribution of this study would be in align with the Malaysian government's 15 years greening strategy as stated in the 10^{th}, 11^{th} and 12^{th} Malaysia Plan to achieve a green country status (Malaysia Ministry of Energy, Green Technology and Water, 2009). This study would benefit local authorities and policy makers to gauge Malaysians, in

particular Penangites' behavior towards going green. The classification of the factors that influence green intention and green behavior along with the effect of green advertisement would give a clear picture to the policy makers to where emphasis their effort to achieve a green country status. Furthermore, this study would also identify factors that did not have significant impact on intention to green consumerism and behavior, and by acknowledging these factors, practitioners and policy makers and marketers to reevaluate their strategy to ensure they get the correct message across to the general public on the benefits of going green.

From the academic's point, this research topic had not only become a significant public issue but also a crucial topic in academic research. Marketing academics as well as practitioners had shown extensive growth in interest to learn the impact of marketing in promoting and maintaining ecological balance (Bhattacharya, 2011; Chammoro, Sergio & Miranda, 2009). From the Asian perspective scholars and particularly Malaysian, several research has been conducted on green purchase intention in Malaysia (Ramayah *et al.,* 2010; Rashid, 2009; Tan & Lau, 2010), the relationship between the variables (Abd Rahim, Ahmad Zukni, Ahmad & Lyndon, 2012; Rahbar & Abdul Wahid, 2011; Ramayah *et al.*, 2010; Rashid, 2009) and green behavior (Haron, Paim & Yahaya, 2005; Said, Ahmadun, Paim & Masud, 2003). This present study further added to the body of literature by attempting to collaborate the work of others to produce a new research framework that incorporated six variables to predict intention first and then use a moderator, green advertisement, to strengthen the relationship between intention and behavior. In the Western scenario the moderating effect of advertisement had been found

significant, but the same conclusion cannot be derived from the Malaysian's angle as how Malaysian consumers respond to environmental advertisement is still debatable. Therefore to help marketing and advertising practitioners develop a better understanding of this issue, this present study involved surveys on Malaysian consumers concerning their responses to environmental advertising.

1.6 Definitions of Terms/Concepts

Green Consumer: The green consumer is generally defined as one who adopt environmentally friendly behaviors and/or who purchases green products over the standard alternatives (Boztepe, 2012).

Green marketing: Green marketing is defined as 'all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment' (Polonsky, 2011).

Moral norm: Moral norm is social norms that have been internalized and have become a part of a person's conscience therefore the threat of sanctions or the promise of rewards comes from the actor her- or himself. It is the individual's personal beliefs about the moral correctness or incorrectness of performing a specific behavior (von Borgstede & Anderson, 2010).

Environmental concern: Environmental concern was construed as an important indirect determinant of specific environmental behaviors which operates via its impact on the generation of situation-specific cognition. In many daily situations, where people have to make quick decisions, they may use general attitudes like environmental concern as an easily accessible heuristic, which guides the 'definition of the situation' that is how to frame the decision problem, the relevant alternatives and the personally salient decision criterion (Bamberg, 2003).

Perceived knowledge: Perceived environmental knowledge involves what people know about the environment, key relationships leading to environmental aspects or impacts, an appreciation of "whole systems" and collective responsibilities necessary for sustainable development (Mostafa, 2006).

Environmental responsibility: Environmental responsibility carries an altruistic meaning, whereby individuals may need to have a strong "other" orientation and willingness to sacrifice their time/ preferred activities to protect the environment for the long-term benefits of the earth and human race (Lee, 2009).

Subjective norm: Subjective norm constitutes of a peer group that is an imperative part of an individual's social context and these peers influence each other as reinforcing and punishing agents or as modeling agents or as objects for social comparisons or as value setters for a particular idea or behavior (Lee, 2009).

Perceived behavior control: Perceived behavior control is an individual's perception of the amount of control they feel they have over their behavior, where the individual may hold positive attitude to perform a task but may be constrained by the lack of opportunities, skills or resources (Tonglet, Philips & Read, 2004).

Green advertisement: Green message that is conveyed to the general public that first would influence the consumer's attitude and secondly affect the consumer's evaluation towards the product (Edell & Burke, 1987).

1.7 Scope and Limitation of Study

The main aim of this research is to answer the research questions and achieve the research objectives. Precautions have been taken to ensure the research is designed and carried out to fulfill these obligations. However there are limitations that need to be acknowledged which does contribute directly to the research's validity. First of all, this study was restricted to the state of Penang covering only the island as there was constraint in time and finance to conduct a nationwide study. Secondly, data collection was done using respondents who frequented hypermarkets and supermarkets situated on the island and does not delve with respondents who do not come to these places thus the findings of this study depends on the accuracy of data. Finally, a couple of factors, knowledge and environmental responsibility were measured as the perception of the respondents and behavior was measured as a lifestyle approach and not as actual behavior because to measure actual knowledge, environmental responsibility and behavior would take a longer time.

1.8 Organization of Thesis

Chapter One provides an introduction to the study, the background to the research problems, objectives of the study and organization of the thesis. Chapter Two gives a review of the literature on consumers' green consumerism behavior and intention, environmental concern, perceived knowledge, moral norm, perceived control behavior, perceived environmental responsibility, subjective norm and green advertisement as a moderator between intention and green consumerism behavior. A conceptual framework for the study is also presented in the chapter along with the hypotheses that eventually answer the research questions. Chapter Three discusses four sections: research design and sampling procedure; measures and instrumentation; reliability and validity; and data collection process. This is followed by Chapter Four which reports the data analysis and finally Chapter Five presents the recapitulation of the research questions and objectives, discusses the findings of the research, put forward recommendation for managers and finally suggestion for further research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter outlines the effects of global warming and the consequences of it to consumer behavior. Next in the chapter are discussions on behaviors of green consumerism, the intention to be a green consumer and the predictive variables: moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived control behavior. This is followed with the discussion on the effect of green advertisement as the moderating variable between intention and behavior of green consumerism behavior. Eventually the theoretical framework of this research is formed and finally the hypotheses for this study presented.

2.1 Global warming and consumer behavior

The effects of global warming created an awareness in the mid-1990s amongst consumers who then began to be environmentally and socially conscious about their lifestyle and their surroundings (Strong, 1996) as environmentalism according to Pujari and Wright (1996) was the biggest issues faced by both businesses and people in that decade.

Studies in the early 1990s in the United Kingdom showed that 82 percent of its citizens voiced that the degradation of the environment is an immediate and pressing problem that the nation was facing (Dembkowski & Hanmer-Llyod, 1994). Supporting this finding was another survey also in the United Kingdom which found 69 percent of

the people living in Britain believed that their daily living was affected by pollution and other environmental damages (Worcester, 1993). Whereas on the American continent a summary of polls conducted in the United States in the 1990s showed that 37 to 96 percent of consumers positively skewed towards environmental awareness (Erickson & Kramer-Leblanc, 1996). Whilst in the southern hemisphere with the Australian consumers, Suchard and Polonsky (1991) reported that over 60 percent of the continent's consumers were willing to spend more than usual for environmentally safe products. It can be observed that in the Western countries the implication of environmental awareness within the business community was reflected in the business as a result of environmentally conscious consumers (Boztepe, 2012). It is therefore interesting to know if Malaysians are responsive towards being a green consumers and by being one, would businesses be more adaptive to green policies as seen in the Western countries.

Scholars acknowledged that consumers since the early 1990s had apprehended the importance of sustainability (Elkington, 1994; Laroche, Bergeron & Barbaro-Forleo, 2001). Consumers started looking for environmentally friendly products as an alternative, they began cutting down on their consumption and they demanded for organizations to be more socially responsible. This revelation formed a new generation of consumers - the 'green' consumers. These socially conscious consumers were known as those who were aware of the repercussions on the public from the personal choices they make and it was these green consumers who revolutionized their purchasing power to bring about social change (Webster, 1975). The study by Webster in the 70s were iterated by Laroche, Bergeron and Barbaro-Forleo (2001) who expressed that consumers bear in mind environmental issues when deciding on their course of action, hence, consumers in

general, understand that their attitude and behavior towards their purchase choices. These consumers believed that their course of action contributes directly to the ecology perils and catastrophes. It was interesting to note that the authors identified a pattern for those who were environmentally conscious; it was actually based on a collectivistic culture. It was this societal inclination and security that were the significant guiding principles of their lives. Lee (2008) highlighted from her study based in Hong Kong that this collectivist culture on environmental behavior can be cultivated since young as the people around these children would have great influence in the formation of their behavior.

Smith (1998a) on the other hand, added on to the discussion by stating that green marketing would be able to breed green consumption hence reaching out to an environmental change. In his subsequent paper, Smith (1998b) summarized that there would be two genres of people, one that believed that they can reform their lifestyle to achieve sustainability whilst the other group that believed that only a radical and 360 degrees of restructuring of personal beliefs and behavior could save the planet from complete destruction. Another scholar, Elkington (1994) gave a more detailed definition of a green consumer. He categorized a green consumer as an individual who abstains consuming or using any products that would have caused harm to any living things; an individual who does not cause degradation to the environment; an individual who uses non renewable energy; and finally an individual who objects unethical testing on animals and/or human subjects. Literature's definition of a green consumer is numerous and this present study summed a green consumer as someone who has a guiding principle to live life with minimum harm to nature and to observe sustainable living.

Nonetheless, behavior could not be explained as a single task that defines the behavior, as clearly many consumption situations are highly complex, and influenced by a plethora of both conscious and sub-conscious factors rendering the conceptualization of the behavior. Greve (1994) defined human actions as things that people do as opposed to what happen to them, he further elaborated it as things that people actually do as opposed to things that their brains do. A person consciously would perform certain activities as a green consumer, for example when they are purchasing a product they would consciously choose an environmentally friendly product; or consumers would consciously recycle, reduce and reuse their waste to enforce their green living lifestyle. How the sub-conscious mode is incorporated into behavior is when someone does their everyday task without pondering or thinking on it, for them it can be a simple task they do every day without a second thought put into it i.e. switching off the lights when leaving a room, or turning off the tap when brushing their teeth or while shaving.

The following sections discuss the behaviors of green consumerism, the intention to be a green consumer and the predictive variables moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived control behavior. Green advertisement is discussed as the moderating variable between intention and behavior of green consumerism behavior. Subsequently the theoretical framework of this research is formed.

2.2 Green Consumerism Behavior

Behavior involves cognitive formulation, that is, besides using their rational thinking to perform a behavior people also use emotions to perform tasks. Consumer behavior is a study on how consumers in general make their decision to spend their resources i.e. time, money and effort to purchase products. It is also a study on the consumers' motivations of what, why and when they want to buy the product as consumer behavior analyzes consumer trend. Foxall (1993) acknowledged consumer behavior as a trend; a pattern that consumers follow which corresponds to their previous actions. Foxall went on to say that consumer behavior not only involves habits, services and ideas but also involves the use and disposal of products. It is therefore intriguing to understand why consumers do what they do i.e. the purchase choices they make; the habits; and the influencing factors on their purchase choices.

Recent work by Dono, Janine and Ben (2010) explained that the initial objective of observing consumerism behavior was to protect consumers from unscrupulous and unethical marketers but over the years the there was a paradigm shift, today's consumer behavior studies were related to consumer activism- besides protecting consumers, it also protects the environment. Traditionally, consumers' environmental behaviors which included from carrying a grocery bag to commuting to work by bicycle, have been considered self-sacrifice and pro-social behaviors for the benefit of the environment. However, as environmental issues were garnering more public attention, consumer activism which required individuals' austerity rather than ostentation for the benefit of the environment emerged. Consumers began to seek social status and reputation through

displays of mindful consumption. As consumers' motivations to purchase environmental friendly products become multifaceted, it became common to observe a new type of environmentally responsible but conspicuous behavior called conspicuous conservation (Sexton & Sexton, 2011). Conspicuous conservation is defined as an environmental behavior and choice wherein the conservation of energy, water, or other essential resources is undertaken in a manner optimized for public exhibition (Griskevicius, Tybur & Van den Bergh, 2010; Sexton & Sexton, 2011).

It was in the late 1970's that green consumerism emerged and the sharp rise of environmentalism surfaced in the western society first and slowly spread to the Asian society today (Lee, 2008). Both Alwitt and Pitts (1996) and Eriksson (2004) posit that the positive change of consumer behavior towards being a green consumer was related to the growing awareness of environmental issues. Given this growing concern about environmental issues, there have been academic attempts to identify pro-environmental behavior. Scholars categorized environmental behavior to be as a situational determinant and an individual determinant (e.g. Alwitt & Pitts, 1996; Eriksson, 2004; Griskevicius *et al.,* 2010; Peattie & Crane, 2005). It was explained by these scholars that there are two factors that forms a pro-environmental behavior, first factor is the surroundings of a person which includes the society, social economic background and family and peers to structure a person to a situational pro-environment behavior whereas the second factor was based on the individuals personal norm which includes the attitude and actualization that forms the individual determinant behavior to be pro-environment.

In an effort to categorize pro-environmental behavior, Kollmus and Agyeman (2002) have defined pro-environmental behavior as "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world" (p. 240). Similar terms used for pro-environmental behavior is an environmentally friendly behavior, environmentally conscious behavior, environmentally responsible behavior, environmentally significant behavior, and ecological behavior and in this research this pro-environmental behavior is referred as green consumerism behavior.

Once the definition of green behavior had been discussed, next was the attempt to develop a reliable measure for green behavior. Over the years scholars have tried to come up with one reliable and valid measurement but alas were not successful as most of the research presumes pro-environmental behaviors as a unitary concept (Haanpää, 2007; Stern, 2000). However, more recently, it has been a general consensus among scholars that environmental behavior is not unitary but instead a multidimensional concept (Cleveland, Kalamas, & Laroche, 2005; Gatersleben, Steg, & Vlek, 2002; Stern, 2005). These studies suggested that there is no validity in clustering various environmental behavior i.e. purchasing green products, recycling, green habits as one dimension because these behaviors are not necessarily correlated. For example, there is no correlation between someone who chooses not to drive a car and to donate money or clothes to environmental civic groups. People's standpoint about green behavior is not consistent across different domains hence the need to identify this diversification and come to a consensus of a multidimensional measurement. Hence this present study will be using three dimensions: green purchase behavior; green conservation habits; and recycling

behavior to measure the dependent variable, green consumerism behavior as these three behaviors are a mixture of both conscious and sub-conscious behavior. This measurement would represent both the cognitive and habitual behavior as discussed in literature (Hale, Householder & Greene, 2003; Nataraajan & Bagozzi, 1999).

Additionally, Moisander and Pesonen (2002) justified the need for multidimensionality of a pro-environmental behavior in their research to identify individuals who self professed to be ecologically oriented citizens. The authors clustered pro-environmental behavior in three broad categories: first, a passionate individual whose moral obligation is to make a difference; second, a strong eco-centric spiritual/aesthetic individual who seeks simplicity; and finally, a strong radical activist who seeks environmental activism in a large scale. The authors concluded that a socially acceptable green consumer was someone who portrays oneself as a self-directed, prudent and well-informed individual, and one who carefully monitors and control activities that would not harm the environment.

On the other hand, Stern (2005) divided pro-environmental behaviors into two categories: those in a public sphere and those in a private sphere and Stern used both these differing behavioral spheres to measure environmental behavior in his study. Stern posits that the support of public policies that are beneficial to environmental systems is an example of a public-sphere behavior. Public policies enforce people and organization to adopt certain behaviors, though this is forced behavioral adaptation but it nevertheless makes a significant change. As for the private - sphere pro-environmental behaviors, it

included the purchase of main goods and services either for personal use or for the home. Those in these private-sphere chose products that are environmentally friendly from the inception till the disposal of the products for example products that include hybrid cars, energy saving home appliances, recycled and biodegradable and organically grown food.

Nevertheless, to summarize green consumerism behavior, scholars over the years have identified a variety of that represent pro-environmentalism. Activities such as the adaptation of solar energy (Timilsina, Kurdgelashvili & Narbel, 2011); recycling newspapers and plastic, favoring "green" products in their purchases (Alwitt & Pitts, 1996; Bamberg, 2003; Barr, Gilg, & Ford, 2001; Lee, 2009; Salzman, 1997; Suchard & Polonsky, 1991); use of renewal energy, planting trees, grass and flowers, bringing their owns bags when shopping (Siegenthaler, 2010); who use public transport; who will check to ensure a product package is made from recycling material; who only purchase green products; and were willing to pay more for environmentally friendly (Leonidou, Leonidou & Kvasova, 2010) were commonly associated with pro-green behavior. Besides that, the term sustainability was frequently coupled with green behavior, a term used by some scholars to describe a positive attitude towards the environment- an equilibrium between the present and the future i.e. meeting the needs of the present without destroying the needs of the future generation (Ho, Dickinson & Chan, 2010; Nicolaides, 2006).

Based on the literature on pro-environmental behavior, it is prudent to say that pro-environmental behavior is gaining popularity and is spreading through the countries.

As posited by Hartmann and Ibáñez (2006) there is a strong correlation between consumer's involvement on environmental issues and environmental knowledge; the more the knowledge, the higher the involvement. People, from young to old, were concerned about the environment, be it locally or globally, and they sought to promote environmental fortification through their daily activities. Scholars revealed that strong indicator on pro-environmental behavior are seen in the increase of ecologically conscious consumers. They found that values, beliefs, norms and habit are contributing factors that explain the green behavior of an individual and these scholars categorized the values into three groups: social-altruistic (to act green based on the perceived benefits of other people); biospheric (to act green based on the perceived benefits for the ecosystem and biosphere); and egoistic (to act based on the perceived benefits to the individual) (Carrete, Castoňo, Felix, Centeno, & González, 2012; Hansla, Gamble., Juliusson, & Gärling, 2008; Jansson, Marell, & Nordlund, 2010).

To summarize from the discussions earlier in the chapter, the consumer's pro-environmental behavior consist of both the private and public sphere; conscious and subconscious; cognitive and habitual. This present study focused both on examining consumers' pro-environmental behaviors, first in the private sphere-conscious-cognitive trait, specifically, consumers' purchase of environmentally friendly products, and secondly in the public sphere-subconscious-habitual trait, specifically, consumers' green habits, i.e. recycling and conservation behavior. All three behaviors namely green purchase behavior, green conservation behavior and recycling behavior are discussed as follows.

2.2.1 Green Purchase Behavior

Scholars emphasized that consumers' choices were driven by material and social contexts as consumers make their choices based on the ease of doing the task; their past experience; the time taken to do a task; money spent; and resources required (Schor, 2004; Tukker *et al*., 2010). Tukker and his co-researchers postulated that rational choice does not exist when making purchasing decision, instead they believed that it is the sub-conscious mind that decides on the action taken by a consumer. Adding on to this finding were Røpke (2009) and Shove (2003) who found that a consumer's routine decision only changed when interrupted by a definitive event or new prospects comes to light. These scholars posit behavior as both conscious and sub-conscious.

Developed countries around the world has widely campaigned and accepted the green purchasing concept (Li & Geiser, 2005). Generally, green purchasing behavior has been defined as the environmentally conscious purchasing behavior that minimizes waste and encourages recycling and reusing the purchased products or parts of the products without harming the structure and performance of the products (Min & Galle, 1997). In Devon, UK, a study on environmental impact found that 70 percent of the respondents believed that green consumption helped the environment and 83 percent felt buying local products and 'green' tagged products is important to conserve the environment (Gilg *et al.*, 2005). Across the Atlantic, a study on the practice of purchasing environmentally friendly products revealed American respondents in California showed positive correlation between ecological behavior intention and ecological actual behavior (Kaiser, Ranney, Hartig & Bowler, 1999). Nonetheless in North America, a study in the late 80s

illustrated that over 60 to 90 percent of consumers showed their concern about the impact to the environment of their purchasing behavior (Dagnoli, 1990). From the Asian perspective, China's two major cities in the north (Beijing) and south (Guangzhou) exhibited that intention of green purchasing showed a positive correlation to actual purchase behavior (Chan, 2001).

Likewise an individual's sense of responsibility and altruistic behavior towards the green purchasing behavior, governments too played a nudging role to encourage consumers to purchasing green products. In India, the government's initiative to promote green purchasing behavior included having carbon oriented environmental labeling (Green Purchasing Network India, 2009). In Japan, the government enforced a Green Purchasing Law in May 2001 whereby the law states that any government office in the country have to purchase designated green purchase items from 200 products in 18 categories ranging from stationeries to office furniture to energy saving lights to cars and even uniforms (Ho *et al.,* 2010).

Green purchasing behavior was echoed by consumers for several reasons. There are those consumers who relate green purchasing to the lifecycle value analysis whereby they see green purchase would readily reduce environmental degradation (Chung & Wee, 2008); consumers who see green purchasing as a functional behavior in sustainability (Gilg *et al.,* 2005); and consumers who reckon green purchasing would address and combat climate change (Edwards-Jones *et al.,* 2009). The motivation to purchase thus

differs from one individual to another, both the altruistic and environmental factors would have different degrees of impact on behavior to these individuals.

As a matter of fact, a study in Hong Kong in the late 90s showed that there was small yet not significant impact on the purchase behavior towards their environmental concern. This almost non existing relationship was justified because of the over pricing, non-availability and distribution scarceness of green products in the country as well as the consumer perception that their purchasing behavior won't have any influence in improving the existing environmental conditions (Yam-Tang & Chan, 1998).

Webster (1975) defined a pro-environmental consumer as an overtly conscious consumer who is aware with their private actions that can be a consequence to the public sphere and indefinitely this category of consumers wants to bring a social change by their purchasing power. He added on by saying that consumers usually incorporate social issues when deciding to purchase an item, from the content, to the use and also to the disposal. Purchasing behavior can be examined by factors such as consumers' behavior towards buying organic products; buying locally produced foods; purchasing from a local store; buying fairly traded goods; and buying products that use less packaging or packaged using recycled materials (Lee, 2009). Therefore in this study, purchasing green products and the frequency of purchasing a green product was used as one of the measurement of green consumerism behavior. To add on to the psychology of purchasing behavior, conservation behavior was also used to measure green consumerism behavior and the following explains conservation behavior.

2.2.2 Green Conservation Behavior

Green consumerism paved the way to the idea of ethical consumerism, which broadly referred to groups of consumers who showed their concern and had a sense of responsibility towards mankind, fair global trade, child labor, infringement of human rights, animal testing, trading inequalities with the Third World and pollution of the environment (Lee, 2008; Strong, 1996; Uusitalo & Oksanen, 2004). Consumers gradually became matured in their thinking and subsequently, both green consumerism and ethical consumerism formed of symbolic consumption. These consumers took responsibility over their actions and incorporated personal and social values, ideals and ideologies for a better tomorrow and a better future.

Conservation behaviors are of those individual's who turn off the tap whilst they are brushing their teeth, or those who switches off lights as they leave the room, as well as those who choose to take public transport rather than use the car, among other behaviors. Of course many of these behaviors are not seen as beneficial to the environment but these behaviors are habitual, we are just so used to be doing these activities without even thinking about it for instance, walking out of a room without switching off the lights or fans or even the television, taking the car out to go to a destination that is within walking distance. There is a difference between habitual behavior and deliberate behaviors as deliberate behaviors are cautious and well thought behaviors such as recycling or buying a hybrid car (Klöckner & Matthies, 2004). In this present study, habitual behavior will be used to determine conservation behavior of the respondents. According to Steg, van den Berg and de Groot (2012) habitual behaviors are

divided into four grouping: frequency, stability, success and automaticity and each time a behavior was successfully performed under a stable condition, then the possibility of the said behavior to occur again increases, and it would eventually repeat automatically the next time the same situation arises (Verplanken, Aarts, van Knippenberg, & Moonen, 1998).

Verplanken *et al*. (1998) mentioned that the first time the behavior was performed, psychological variables such as attitudes, intentions, norms, and/or values are viewed as strong predictors. However, the researchers continued to show that the more often the behavior is repeated, the stronger the influence of habit it becomes. In their report, Macey and Brown (1983) affirmed that past experience is the best predictor of conservation behavior and 20 years later, Sheeran and Abraham (2003), also affirmed the same findings that the best predictor of future behavior is past behavior. Habits are usually considered barriers against pro-environmental behavior, which interferes with environmentally conscious intentions or personal obligations. For example, even if there is an intention to use public transportation more often, the previous habit of using a car for daily trips decreases the likelihood of using public transportation but then again, research has also shown that a conservation behavior, for example, reusing a towel when staying in a hotel is likely to be enhanced when seeing a card displayed in a towel rack that indicates that other guests who previously stayed in the room have participated in the towel reuse program (Goldstein, Cialdini, & Griskevicius, 2008).

It is also necessary to study the impact of habitual behavior when it comes to identify green behavior of an individual as this habitual behavior is done sub-consciously by the individual. As stated by McKenzie-Mohr, Nemiroff, Beers & Desmarais (1995), pro-environment behavior is not a universal behavior. As both purchasing environmentally friendly products and conserving behavior were not sufficient to be measured as the green consumerism behavior, recycle behavior was also included as the measurement of green consumerism behavior.

2.2.3 Recycling Behavior

Numerous scholars have acknowledged recycling as a pro-environmental behavior. Recycling had been broadly categorized into three sets of variables, first as an intrinsic and altruistic characteristic of an individual who values the sustainability of the environment compared to those who do not care about the environment (Hopper & Nielsen, 1991; Vining & Ebreo, 1992). Secondly individual characteristics that are based on the situation, this is when consumers recycle based on the knowledge they had obtained (Berger 1997; Schahn & Holzer 1990), or based on their experience of recycling (Daneshvary, Daneshvary & Schwer, 1998). The third and final category of consumers who recycle are based on psychological factors whereby consumers recycle because of intrinsic and extrinsic motivations (de Young, 1986; Fryxell & Lo, 2003); perception of environmental threat and thus they have the motivation to save the environment (Baldassare & Katz 1992; Bansal & Roth, 2000; Hopper & Nielsen, 1991; Selman, 1996) as well as the influence of their peers and family (Chan, 1998). Schultz, Oskamp and Mainieri (1995) postulated that consumers today have more than one motivation to

recycle and the reason behind the complex stimulus is because of the growing popularity and recognition of recycling. Besides, Cheung, Chan and Wong (1999) and Boldera (1995) supported the efficacy of past behavior in predicting future behavior by asserting that consumers who carried out recycling activities would continue doing so in the future as well.

The growing popularity of recycling saw studies from different parts of the world. For instance, Guerin, Crete, and Mercier (2001) in their study based on European countries discovered that recycling activities in Europe showed a small but significant relationship between environmental concern and recycling behavior. The researchers concluded that Europeans are generally concerned about their environment but recycling activity was just not translated as a factor in sustaining their environment. Thogersen (1996) in a study in Denmark showed that the respondents classified recycling as a moral responsibility in their behaviorism towards the environment. However, the author also mentioned that when payments in the form of rewards were used to encourage consumers to recycle, it thus becomes a business deal instead of a moral obligation by the consumers to recycle to sustain the environment. Thogersen went on to argue that consumers had begun to weigh the cost and benefits of recycling hence the altruistic and intrinsic values of recycling slowly diminished particularly when consumers felt it was easier not to recycle despite the rewards offered. However the work of Saphores, Nixon, Ogunseitan and Shapiro (2006) in California on consumers' willingness to recycle electronic waste found that the altruistic and intrinsic values of recycling were not easily ebbed out from a person. The research explained that both altruistic and intrinsic values can be

programmed into a person through education programs on recycling of which the researchers identified should start from young and as for adults, these altruistic and intrinsic values can be instilled by making recycling steps simpler and easier for them to comprehend. Besides that, the researchers also found that the location of recycling centers also plays a part on the attitude to recycle and the researchers suggested that recycling centers should be built in the community itself as accessibility is a major consideration for recycling among consumers.

Iterating Thogerson's study in Denmark, Boldero (1995) also mentioned that consumers need to be encouraged to recycle especially household waste as it takes several steps before the waste is ready for recycling. For instance, firstly, the waste needs to be sorted into different categories, secondly prepare for recycling and finally storing the waste properly till it is time to send to the recycling centers. As multiple steps were involved in recycling, public in general saw the tasks as cumbersome and much deeper incentives were needed to encourage people to recycle. Looking at this predicament of recycling, Enviros (2003) suggested two distinctive drivers that would compel the idea of a successful recycling activity, i.e. awareness and convenience, whereby awareness was categorized into awareness of the consequences and awareness of needs. Scholars Harland, Staats and Wilke (2007) referred awareness of the consequences as to a person's receptiveness to a situation when the need arises whereas awareness of the need is the degree of attention a person commits on the existence of the environment in need. The outcome of recycling was explained by the awareness of the need to conserve the environment whereas the awareness of consequences of recycling explained the

consequences if recycling, reusing and reducing was not adopted at the present moment and hence leading to the consequences of these non actions in the future. Furthermore, Davies, Foxall and Pallister (2002) as well implied the importance of separating recycling attitudes into two components, i.e. affective and cognitive. The affective component measures an individuals' feelings of performing the act of recycling, either happy or resentment whilst the second component, cognitive, measures the individuals' knowledge of the consequences of recycling. To understand further on these measures mentioned above, Cialdini (2003) designed a study to determine the intended effect of conveying to the public that recycling was prevalent (descriptive norm) and approved (injunctive norm) and whether these two norms have any effect on recycling intentions. His findings revealed that both influenced recycling intention with a strong correlation which means more participants came to believe that recycling was approved and prevalent.

Nonetheless, Vlek and Keren (1992) stated that the decision whether to be proactive in environmentalism or otherwise depends on if the personal costs of pro-environmental behavior were more prominent than its personal benefits. Therefore for some individuals in the decision whether to recycle or not recycle depends on the cost of recycling in contrast to the benefits of recycling to the environment. Consequently, Edwards and Fasolo (2001) posited that a rational approach to human decision making would predict that pro-environmental behavior that will not be voluntary. Therefore when it comes to recycling, as there is no personal benefit involved, the main benefit relates to the environment, hence volunteering to recycle is not a normal norm.

To conclude, literature shows that recycling behavior is conformed by awareness and consequences and as a result, enhanced pro-environmental behaviors were demonstrated through higher participation levels in recycling and waste minimization (Phillips, Holley, Bates & Fresstone, 2002), and therefore in this study, recycling behavior was adopted to operationalize green consumerism behavior. It is a matter of fact that each individual act differently, and this study attempt to identify which of the three green behaviors highlighted earlier in this chapter: green purchase behavior or recycle behavior or conservation behavior would have had affected most on the determinant factors of green behavior.

Nevertheless, according to Moisander (1996) researchers tend to face problems to show a significant relationship between external factors and pro-environment behavior but based on Fishbein and Ajzen (1975) theory, consumers' intention is a critical factor to predict between consumer behavior and external factors and thus the discussion on the intention of green consumers in the following section.

2.3 Intention to Green Consumerism

Does intention translate into behavior? A question frequently asked by scholars in psychological and social studies. To answer this question, it is important that the first and foremost task at hand would be to define what intention means. Many scholars attempted to define intention, and intention was said to measure the possibility of one's behavior, in précis, the higher the intention, the higher the willingness to perform the behavior. It was stated in literature that it is a norm for an individual to pursue their preference and this

pursuance was based on their experience as well as pressure from the environment. To achieve this, people collect information, evaluate the choices, form an opinion and finally decide on the choices which is then translated into their behavior (Dodds, Monroe & Grewal, 1991; Ng & Paladino, 2009; Schiffman & Kanuk, 2000; Yang, 2009; Zeithaml, 1988). In this present study, intention to green consumerism was viewed as the intention a consumer has to act on the following behaviors, namely, behavior towards consumer's purchasing green products; behavior towards consumer's recycling their waste; and behavior towards consumer's conservation habits.

Nevertheless, from the perspective of Malaysian scholars, intention to green consumerism was identified by Nik Abdul Rashid (2009) in his research on green purchase intention as the likeliness and readiness of a consumer to purchase a green product over conservative and conventional products. Further on, Ramayah *et al.* (2010) in their study of green consumerism behavior of Malaysians referred intention as a pre-determined action of an individual to perform certain actions. Adding on to the definition, Han, Hsu and Lee's (2009) research on guests' behavior who stayed in an environmentally friendly hotel termed green intention as the probability of the hotel guests of visiting a green hotel a second time, guests who engage in a positive word-of-mouth behavior and guests who were willing to pay more to stay in a green hotel as compared to the conventional hotel.

Adding on from the western world's perspective, Mainieri *et al.* (1997) research on 201 respondents in the west coast of the United States, an individual's level of

intention to green living was linked to their interest in green products as well as the willingness to purchase green products. The respondents in the survey were highly likely to conscious of their surrounding and actively participated in sustainable living based on first their willingness to purchase products because of their pro-environmental claims, secondly the respondents were aware of their actions as they were concerned about the well-being of the environment as not to pollute further what has already been polluted and thirdly consciously switching to purchase pro-environment products purely for environmental reasons. The research also found that consumers did not mind paying more for their purchases as long as the product is safe for the ecosystem.

2.3.1 The Relationship between Intention and Behavior

Ajzen (1991) in his development of the Theory of Planned Behavior, established that intention is the key predictor of behavior. Past studies had showed a significant relationship between intention and behavior, yielding 20 percent to 40 percent of variances explained in predicting behavior (Downs & Hausenblas, 2005; Godin & Kok, 1996; Hagger, Chatzisarantis, & Biddle, 2002). However, the gap is still big between intention and behaviour (Kelley & Abraham, 2004; Sheeran, 2002). The reason behind this gap was attributed to many reasons, from differences in cognitions to unknown factors, but however, research showed that the differences in the intention-behaviour relationship between active and inactive intenders were not attributable to differences in cognition namely attitude, subjective norm, perceived behavioural control and intention (Godin, Shephard, & Colantonio, 1986; (Sheeran, 2002), hence other factors need to be investigated. Nevertheless, some studies indicated statistically significant in the

relationship between previous experience on intention and/or behavior (Bentler & Speckart, 1979; Fredericks & Dossett, 1983).

According to Baron and Kenny (1986), the absence or the inconsistence in the presence of a theorized association between an independent variable (e.g. intention) and a dependent variable (e.g. behaviour) may indicate that a third variable affects the direction and/or the strength of this relationship. That is, the intention-behaviour might vary according to different levels of a third variable, known as an effect modifier or a moderator. Therefore, one avenue of research to help understand the gap between intention and behaviour is to investigate moderators of this relationship. Indeed, for a given level of moderator, the intention-behaviour relationship should be higher.

Additionally, D'Souza, Taghian and Lamb's (2006a) study indicated that the consumers' intention to purchase environmentally safe products did transform to the actual purchase even with the fact that they have to pay more for green products. This behavior was acknowledged by the consumers because they had already perceived and accepted that pro-environmental products would be more expensive than the conventional alternative products. Nevertheless, do-Paço and Raposo (2009) found an interesting response from Portugese consumers who did not translate their intention into action when it comes to protecting their environment but however, they actively participate into conserving energy and water and the reason for that is not because they are being pro-environment but more for economic reasons. Fascinatingly nonetheless, the study revealed that the consumers' intention to purchase green products was based on the level

of damage the product would cause on the environment. These mixed findings on the reasons how intention is translated into pro-environment behavior has become debatable and hence the need to further research in this area.

In a more recent study, Ferguson (2011) conducted a research with the purpose to determine consumers' behavior when formulating an intention to purchase green products and the research findings posited that it appeared that the lack of experience by consumers with green products will negatively affect their intentions to purchase green products. The author stated that consumers who have high expectations of the benefits of green products showed trigger to positive intentions to purchase these green products. The influence of referent groups was a factor too. The author concluded that the intention to purchase increased because of the greater experience, met expectations, positive group norms, greater availability, and consumer knowledge.

Nevertheless, literature showed intention to perform a behavior categorized as implementation intention or as goal intention. An implementation intention was explained as the behavior to perform set by a specific time and context of action whereas in contrast, goal intention was based on the intention to perform the behavior at an unspecific timeframe in the future. Implementation intention was concerned about when an action was taken. Goal intention was concerned not on when the action was done but the concern was more towards doing the action at some point of time in the future. For instance, a basic behavioral intention – "I intend to purchase environmentally friendly products" is an example of goal intention as no time frame was given as compared to "I

intend to purchase environmentally friendly products every time I go shopping" which is a good example of implementation intention as the action was specified to 'every time I go shopping' (Gollwitzer & Brandstätter, 1997; Milne, Orbell, & Sheeran, 2002).

In this present study, implementation intention was used to explain intention to green consumerism as research has shown that by specifying the planning on when an action or behavior was to be carried out would actually increase greater probability to perform the behavior (Scholz, Schüz, Ziegelmann, Lippke, & Schwarzer, 2008). Besides, Gollwitzer and Sheeran's (2009) meta-analysis of more than 8000 respondents found that by suggesting a time frame on when to perform the behavior (implementation intention) demonstrated an increased likelihood of individuals acting on their intentions as statistical analysis showed an effect-size of intention to behavior indicating a medium to strong effect. The researchers posited that in the field of consumer psychology, it was more suited to use implementation intentions to study the intention–behavior relationship as compared to goal intention. This suggestion was duly adopted in the present study as the present researcher believed that an implementation intention would be more suitable in the context of Malaysian consumers as they were given a time frame on when to perform the action.

Additionally, literature presented intention as to be the best predictor of behavior (Ajzen, 1991; Armitage & Conner, 2001; Gollwitzer & Sheeran, 2006) but found that intention presents not more than one third of the variance in behavior (Gollwitzer & Sheeran, 2006; Webb & Sheeran, 2006; Sheeran, 2002). Hence, the question arises on

what would be the determinant factor that would increase the variance between intention and behavior in a sociology research, thus the introduction role of the moderator.

Besides that, the flooding of environmentally friendly products into the stores worldwide as well as advertising campaigns declaring eco-friendly labels and messages on sustainability as well as pro-environment products has helped consumers to attain the required information to overcome the intention-behavior gap (Banerjee, Charles & Easwar, 1995). However, far too little attention has been paid to study the influence of green advertisement as a moderator between intention and various types of behavior (purchasing, habits and conservation) especially in the Malaysian context. Hence the ensuing discussions on the role of social marketing in the form of green advertisement as the moderator in this present study.

2.4 Green Advertisement

What motivates a person to do what they do? What changes their intention to behavior? This is a debate that is ongoing and perhaps will never have a satisfactory answer. The action that influences a person's intention could be the result of the choices the person makes, and this could be influenced by another person, businesses, governments, advertisements and so forth. Advertising campaigns had been observed to work on multiple levels and for a wide range of audiences to get messages across the public. Basically, advertisements help to connect structural, macro process of social and environmental change with micro interpersonal processes (Frame & Newton, 2007). Advertisements had always played an important role in convincing consumers to perform

certain actions, i.e. from purchasing products to changing lifestyles (Peattie & Crane, 2005) but the impact of social marketing campaigns in the form of green advertisement on green consumerism behavior is still questionable (Frame, 2004). However, the literature had claimed that the advertisements were highly effective in forming the intention to purchase the advertised product or service but a meta-analysis of the relationship of intentions and behavior has shown that intentions explain only 28% of the variance in behavior (Sheeran, 2002). This study would briefly discuss the emergence of green advertisement as to understand the need for social marketing in the following paragraphs.

The start of the 60's saw the emergence of environmental advertisements; the general public's concern over anti-ecological practiced by many firms started the ball rolling (Easterling, Kenworthy & Nernzoff, 1996). In response to these allegations and concerns, many a firms started promoting their environmental responsibility to customers and stakeholders via green advertisements (Kinnear & Taylor, 1973; Peattie, 1995). Nonetheless, was only in the late 1980s that green advertisement made a mark and this sharp increase in green advertisement was mainly due to publics' increased awareness and concern added to demand of corporate social responsibility and competitive pressures and stricter government regulations related to the environment (Carlson, Grove, Kangun & Polonsky, 1996; Kilbourne, 2004).

To reinforce the idea of green marketing, Lee (2008) explained the three stages in the evolution of green marketing. According to Lee, the first stage began in the 80s when

the concept of green marketing was initiated into the industry (Peattie & Crane, 2005), this was followed by the second stage in the 90s whereby marketers experienced explicit repercussion of the green marketing concept (Wong, Turner & Stoneman, 1996). It was in the 90s that the marketers realized that there were no correlation between the positive attitude towards the environment and the purchasing behavior of the consumers (Schrum, McCarty & Lowrey, 1995). The new millennium saw the development of the third stage, where a new momentum was experienced with the induction of advanced technology, stricter regulation by governments and enhanced global awareness (Rahbar & Abdul Wahid, 2011), hence the strong emergence of green marketing today.

Nonetheless, green advertisement was a topic of study by scholars, several studies in the 90s showed various claims by consumers about green products, for instance, a research carried out by the Environmental Research Association found that almost 50 percent of the respondents found environmental advertisements as just a "mere gimmickry"; half the respondents just did not have any trust in the environmental claims (Fierman, 1991), and this was also supported by Brown and Wahlers (1998) who said that consumers found it hard to accept products that manufacturers claim to be environmentally safe and useful as there were no trust element in the words of the manufacturers. The above study was further confirmed when Ottman (1995) found that 63 percent of the respondents in his study asserted their suspicion on the environmentally safe claims made by manufacturers of green products. Besides that, Einsmann's (1992) findings stated that said only five percent of his respondents expressed trust on

manufacturers but 89 percent of the respondents trusted claims of pro-environmental products from leading environmental groups.

Nevertheless, other studies had focused on the effectiveness of cognitive persuasion strategies in marketing especially green marketing and the studies concluded that today's consumers' active participation in the environmental issues contributed to their growing concern on the consequences of environmental degradation and hence spruced their environmental consciousness (e.g. Cope & Winward, 1991; Fuller & Ottman, 2004; Kinnear, Taylor & Ahmed, 1974).

Therefore, in lieu with the third stage green marketing as suggested by Rahbar and Abdul Wahid (2011) in the earlier part of this literature, it was deemed that green advertisements would be essential for marketers to encourage consumers to purchase their eco-friendly products. However, Ginsberg and Bloom (2004) had argued that marketing tool's effectiveness differs from one marketer to another and there is not a single marketing tool that fits for all marketers, but instead a different methodology in marketing would be necessary for each market to come up with their own marketing tool that works best for them based on the degree of consumer concern for the environment. In this present study, advertisement - which is one of the biggest and oldest marketing tool was considered as the moderator that would transform intention to behavior.

Advertisements have always been a fundamental factor in promoting conventional products and also green products. The increasing interest to know more about the

environment by both the knowledgeable green consumers and those who are attempting to be a green consumer had encouraged marketers to embark aggressively on environmental advertising (Carlson, Grove & Kangun, 1993; Peattie, 1999). Many advertising terms have been playing in the marketers approach, i.e. recycle, environmentally friendly, ozone safe and biodegradable products had been popular advocates in green advertisements and consumers nonetheless had been more than often exposed to such messages. Anyhow, the effects of these advertisements differ from one consumer to another. The effectiveness of the green messages in the advertisement were in correspondence to the consumers' involvement with pro-environmental attitude, the higher the involvement in green, the higher the significance of green advertisement effectiveness to the consumer (D'Souza & Taghian, 2005). Likewise, a research concerning green advertisement by Haytko and Matulich (2008) tested if the environmental responsible group differed from the apathetic group with regard to their attitudes toward green advertising. The findings of the research revealed that the environmentally responsible group showed statistical significance towards green advertisement as opposed to the apathetic group which showed no significance to impact of green advertisement and thus the research concluded that consumers who were pro-environment had positive attitudes toward green advertising.

In a poll in the United States carried out at the end of 80s, showed 90 percent of the nation's consumers were concerned about the environmental impact of the products they buy and consume. This concern of the consumers prompted manufacturers to respond to the demands and take action about it by revising their current products and by

actively researching and developing new products that would be less harmful to the environment (Cramer, 1991). In a way, manufacturers were forced to make changes and economically, to survive in the market, changes had to be made according to the demands of the consumers. The need for change by the producers or manufacturers of conventional products to green products started the new era of consumers and these new green consumers were molded with the help of advertisements. Baldwin (1993) explained that environmental advertisements helped consumers to form values that translate into their behavior of green consumerism. This finding from Baldwin was a successor from a study by Chase and Smith (1992) who mentioned 70 percent of the respondents in their study were found to be influenced in their purchasing decision by environmental messages via advertisement and product labeling. But however, the authors added that almost 50 percent of their respondents did not heed to the environmental messages as too many green advertisements were flooded into the media channel and the credibility of these messages were questioned.

But in contrary to Chase and Smith's findings above, other research supported that the claim that environmental messages in advertisement does play an important role in influencing consumers' decision to use environmentally friendly products as these consumers attested that the environmental messages to be credible especially to green products as compared to conventional products (Mathur & Mathur, 2000; Ong & Phau, 2007). To add on to the environmental message's effectiveness, Mathur and Mathur (2000) revealed that consumers are more likely to be favorably responding to green messages that correspond specifically to the product rather than green messages that are

general and cause related to the environment. Ginsberg and Bloom (2004) iterated the above findings by Mathur and Mathur that consumers were more inclined to listen or read messages that were directly related to the product as in contrast to messages that champion environmental cause because Grinsberg and Bloom (2004) discovered that a brand with a green image invokes the emotional bond in consumers which therein commit their gratification towards the environment.

According to past studies, consumers generally will conceptualize an opinion on products every time they were exposed to advertisements. These opinions form a bond between the consumer and the product. The consumer's belief and feeling were of course something personal but interestingly studies showed that these beliefs and feelings tend to be the properties of the advertisement (D'Souza & Taghian, 2005; Batra & Ray, 1986). However, consumers normally do not disclose how advertisement affected them especially on their mood and the present state of the environment, instead consumers would actually express that the advertisement was amazing and extraordinary (Aaker, Stayman & Hagerty, 1986; Edell & Burke, 1987; Gardener, 1985). Nonetheless, Edell and Burke (1987) summarized that feelings conveyed by the green advertisements, firstly influenced the consumer's attitude and secondly affected the consumer's evaluation towards the product.

2.4.1 Relationship between Intention and Behavior, Moderated by Green Advertisement

Krosnick and Petty (1995) introduced seven properties of cognition as moderator variables in TPB: temporal stability, accessibility, affective-cognitive consistency, ambivalence, certainty, involvement and direct experience. Temporal stability as defined by Sheeran, Orbell and Trafimow (1999) is the extent to which a task is done consistently over a period of time. Accessibility was defined by Fazio (1995) as the strength of the memory between a task and the object of the task, which means that people would do a certain task that is fresh in their memory as they would have been reminded over and over for instance by using advertisements to remind and cajole a person to do a certain task. Kaplan (1972) posit that an individual could have both positive and negative attitudes towards a certain behavior and ambivalence is the formula that captures both the positive and negative attitude. Another cognition moderator is certainty which has a specificity of meaning whereby individuals who are certain of the task such as recycling, have higher probability of carrying out the task (Bassili, 1996). Involvement on the other hand is when an issue or task was perceived as important, crucial and relevant to the individual and thus their high participation in the matter (Kokkinaki & Lunt, 1997). Finally, the direct participation and experienced gained from doing a task is referred as direct experience, the measurement of cognition is based on whether or not the participant had performed a particular task beforehand to predict the actual behavior (Fazio, 1995).

The debate to identify which would be the most relevant moderator to bridge the gap between intention and behavior has been ongoing and literature has identified

differing effect of these cognition moderators (e.g. Bassili, 1996; Cooke & Sheeran, 2004; Fazio, 1995; Kokkinaki & Lunt, 1997). Anyhow, one of the most significant cognitive moderator has been identified as the accessibility moderator as this accessibility moderator type proved to have a large effect size as the moderator for an intention-behavior relation (Cooke & Sheeran, 2004). So far, there has not been much discussion on advertisement, specifically green advertisement as accessibility moderator in the Malaysian context. Literature on the Malaysian front had been discussed on how green advertisement encourages purchase of eco-friendly products and enhance global awareness (Rahbar & Abdul Wahid, 2011); the level of awareness and perception among Malaysian youth with the influence of green advertisement (Abd Rahim *et al.*, 2012); and awareness of price and green brand image awareness when making purchase decision (Mohd. Suki, 2013). Noting the lack of extensive research on the moderating effect of green advertisement on the intention and behavior gap, this present research set out to determine if green advertisement as an accessibility moderator among Malaysian consumers.

It is an undeniable fact that consumers are becoming more knowledgeable these days and this was attributed by a number of factors including wider exposure by the media which highlights problems and awareness of going green; the increasing number of activists who champion for a greener planet; and government intervention (Kärnä, Hansen & Juslin, 2003; Picket-Baker & Ozaki, 2008).

Therefore, in lieu to the literature that promotes the effectiveness of advertising, this research intended to test the role of green advertisement in bridging the gap between intention and behavior. Green advertisement was chosen as a moderator as marketers found that a strategic working model on green advertising and green marketing had actually helped businesses to gain good profit margin (Davis, 1993; Laroche *et al.*, 2001; McDaniel & Rylander, 1993; Menon & Menon, 1997). Laroche *et al.* (2001) went on to reveal that most American consumers (78 percent of the respondents) would pay more for green products and these consumers preferred green advertisement to give them adequate information to aid in their decision making. Conversely, another study also from the United States showed the reverse effect of the lack of green advertisement which contributed to the unwillingness to pay more for green products as the consumers were not given sufficient information to promote pro-environment issues (Neff & Halliday, 2000). Ajzen (1991) also showed that when pro-environmental behavior was aligned with self-interest, individuals comply.

According to Banerjee, Gulas and Iyer (1995), green advertising can be seen as any advertisement that may explicitly or implicitly addresses the relationship between a product and the biophysical environment but there is not much known about the nature of what green consumer perceive as important in green advertisement especially on government green advertising campaigns, as past researches were mostly conducted on the perception or attitude towards green products and corporate green claims (e.g. Haytko & Matulich, 2008; D'Souza, Taghian, Lamb & Peretiatko, 2007; D'Souza & Taghian, 2005). This study, therefore, provides a much needed insight into local (Penang) and

governmental green advertising campaigns. It hopes to contribute towards the effectiveness of future green campaigns. The researcher of this present study wanted to see how green environment messages influence people's behavior towards being a green consumer and thus conceptualized green advertisement to measure the impact of the green messages on the respondent. Therefore, the present study included green advertising as a moderator in the framework to assess the level of awareness and perception green advertisements on Penangites.

Besides the role of green advertisement as the moderator to fill the gap of intention and green consumerism behavior, there are other factors that influence consumers' behavior towards their green living. Henceforth, it is essential to know what are the other factors that influence the consumers' behavior. Scholars have mentioned knowledge or ecoliteracy is one of the factors that has been frequently studied in green marketing (e.g. Chan & Lau, 2000; Cheng, Yeh & Tu, 2008; D' Souza *et al.*, 2006a; do-Paço & Raposo, 2009; Laroche *et al.*, 2001; Martin & Simintiras, 1995). Chan and Lau (2000) found ecological concern or environmental concern as one of a central determinant of consumers' green purchase intention. The study of attitudes; categorized as functional attitude (perceived environmental responsibility) and emotional attitudes (moral norm) as other factors that influence green marketing had been carried out by a number of researchers in the past (e.g. Cheng *et al.,* 2008; Getzner & Grabner-Kräuter, 2004; Hartmann, Ibáñez & Sainz, 2005; Laroche *et al.,* 2001; Lee, 2008; Picket-Baker & Ozaki, 2008). This present research therefore looked into six factors: moral norm, environmental concern, perceived behavioral control, perceived knowledge, perceived

environmental responsibility and subjective norm as independent variables that have an effect on intention of green consumerism and green consumerism behavior. Three independent factors namely environmental concern (attitude), subjective norm and perceived behavioral control were factors identified by Ajzen (1985) in the Theory of Planned Behavior and thus grounding the formation of the theoretical framework for this present study. The other three factors, namely, moral norm, perceived knowledge and perceived environmental responsibility were introduced in this present study to extent the framework to explain further green consumerism behavior.

2.5 Moral Norm

Everyone has some kind of a value system that they follow in their lifetime and this value system do change as the individual grows up and experience life. Scholars over the past years have looked into value as a predictor of intention and subsequent behavior. Among the definition of values include: desirable goals that are the principles in an individual's life (Schwartz, 1992); an intuitive sense that influences behaviors (McCarty & Shrum, 1994); and one's judgments about what is important in life (Ramayah *et al.*, 2010). It is a lasting believe that values are enviably good and that value includes appreciation for the environment. Scholars had in the past made general proclaims on values, from being the foremost an important element when consumers make their purchase decision (Hoyer & MacInnis, 2004) to values playing a primary role in behavior (Reser & Bentupperbaumer, 2005) to values affecting people's beliefs and hitherto affecting their behavior (Stern, 2000).

Follows and Jobber (2000) identified a model with three types of values: self-transcendence, conservation and self-enhancement values whilst Triandis (1993) mentioned that individualism and collectivism were two major values that had an effect on consumer purchasing behavior. Nonetheless, Laroche *et al.* (2001) mentioned that consumers who were mindful of their environment strongly suggested that collectivism and security were important ethical values that guided their lives which were in line with the profile by McCarty and Shrum (1994) who mentioned that environmentally friendly consumers were those who were helpful, cooperates and thinks for the betterment of the group as a whole. Furthermore, the values of a consumer, whether their social values or their personal values to the environment were also reported as factors that encourage consumers' behavior towards a greener society (Cheng *et al.,* 2008; Laroche *et al.*, 2001; Lee, 2008).

Subsequently, Dunlap and van Liere's (1978) new environmental paradigm (NEP) was developed based on a set of core values, mainly focusing on the reverence for natural limits whilst insisting on preserving the balanced integrity of nature. This was in parallel with the norm activation theory by Schwartz (1977), the theory that emphasized personal norms is the strong moral obligation to do the right thing as the only determinant for pro-social behavior, and succeeding to that, rejected the idea of behavioral intentions as the mediator of the relationship between moral norm and actual behavior of green consumerism. Indifference to that, the norm activation theory stated that awareness of the consequences and attribution of responsibility towards the environment and self, created personal norm which lead to actual behavior of green consumerism. Based on this theory,

Stern, Dietz, Kalof and Guagnano (1995) constructed a pro-environmental consumer behavior model which is the value-belief-norm model (Figure 2.1). This model depicts the acceptance of NEP values which lead to the awareness of the consequences and the ascription of responsibility, thus resulting in moral norms that lead to green conscious behavior.

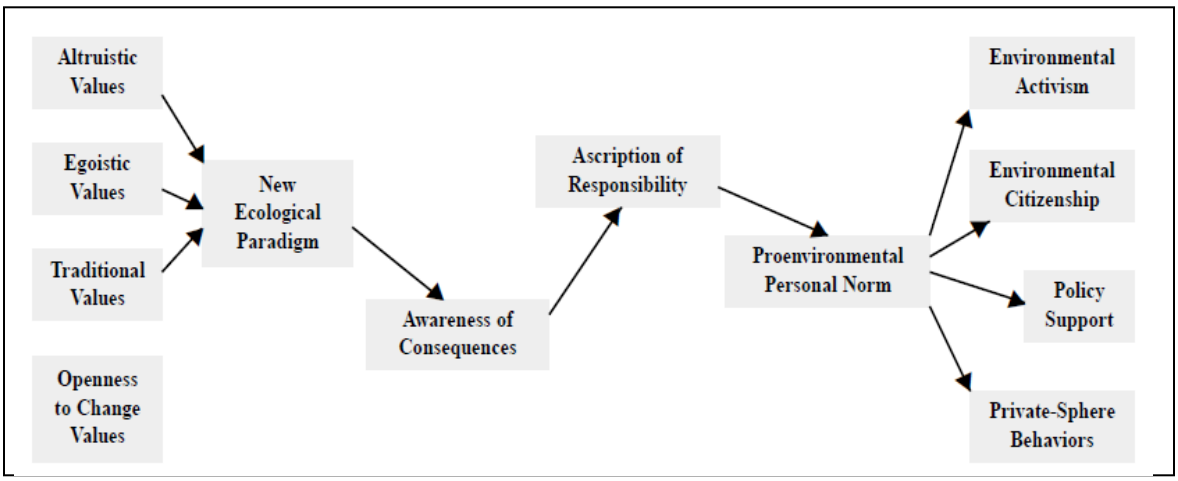

Figure 2.1. Value-Belief-Norm Model. Adapted from "A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism," by P.C. Stern, T. Dietz, T. Abel, G. A. Guagnano and L. Kalof, 1999, *Human Ecology Review*, *6* (2), p. 84.

2.5.1 Relationship Between Moral Norm and Intention

Scholars had showed significantly related relationship between moral norm and intention for instance, Parker, Manstead and Stradling (1995) showed in their study how moral norm was a stronger predictor of intention above the other factors such as attitude, subjective norm and perceived behavioral control. The role of moral norm across different cultures also showed a significant predictor to enhance behavioral intention, for example, Chan (2001) reported a significant relationship between values and intention to purchase green products in his research on Chinese consumers in China. Supporting that McCarty and Shrum (1994) found that values influences sustainable lifestyle as

consumers were willing to recycle and purchase environmental friendly products. Vermeir and Verbeke (2007) as well collaborated that those consumers who held traditional values were more inclined to purchase sustainable or green products. Mostafa's (2006) finding on Egyptian consumers' on green purchase intention showed a significant and positive standardized coefficient for social and biospheric values.

Further to this, McCarty and Shrum (1994) found that values influence behavior. Their study posited that the process of buying an environmentally friendly product starts with the conceptualization of the internal value to protect the environment as the predecessor to intention to buy green products. Besides that, Peattie (2001) rationalized consumers as pro-environment citizens wanting to make a difference to the environment and mankind when they purchase an environmentally friendly product and moral norm was an imperative predictor of this action. Anyhow, not many studies showed the significant relationship between the level of self involvement values of consumers in green activities, instead studies found the level of self-involvement amongst consumers' towards the protection of the environment to be relatively small thus explaining the low engagement of consumers in green behavior (Wiener & Sukhdial, 1990).

Nevertheless to overcome the above issue, Bei and Simpson (1995) came with a suggestion to address the low level of self-involvement values. The authors noted that the superfluous emphases on the degraded state of the environment need to be propagated to the consumers with the hope that it can motivate consumers' environmental behavior. One way to motivate consumers was to communicate with them on the significant impact

they would bestow on the environment, hence upgrading the welfare of the environment when they purchase environmentally friendly products (Laroche *et al.,* 2001). These scholars summarized that consumers need to be told about the impact of their decision on the eco-system and they need to constantly and continuously check on their personal value. But contrary to the above findings, Ramayah *et al.* (2010) found that self-enhancement values did not positively relate to purchase intention of green products, which was also consistent with the findings by both Oliver and Lee (2010) and Follows and Jobber (2000). This non-significant relationship goes to show that not everyone who was concerned about the environment would care to be a green consumer and this inaction is known as the value-action gap.

2.5.2 Relationship Between Moral Norm and Behavior

This value-action gap was explained by Kollmuss and Agyeman (2002) in an analysis of framework to identify the predictor variables that influence pro-environmental behavior. The authors found consumers daily decision making process to be contradictory and opposing from one to another and that no two individuals have the same influencing factors when deciding their behavior. They further concluded there is not a single definitive model that could adequately explain the gap between self values and pro-environmental behavior. Furthermore, Ohtomo and Hirose (2007) also rationalized that individuals who showed concern over the environment need not necessarily behave as a green consumer, for example, people when with other people would follow the actions of other to fit into the group's dynamics, for instance, when everyone around you is throwing rubbish all over the place, we tend to follow the same action as to feel not left

out of the group. But then again there is another conflicting factor that needs to be addressed in explaining the value-action gap. Karp (1996) raised the predicament of over zealous individuals who want to protect the environment with the belief that it would benefit everyone but unfortunately this action often lead to the exploitation of the environment. Ajzen (1991) showed that when pro-environmental behavior aligned with self-interest, individuals comply. Therefore when the product met consumers' needs and it was aligned with their values (e.g. emitting less carbon when using lead free fuel, or using biodegradable products), the chances of pro-environment behavior are higher among the consumers but on the other hand, there would be a value-action gap if the pro-environmental behaviors did not go along with self-interest. Therefore, this study found that further verification on the effect of moral norm as a factor that influences the behavior of a Malaysian consumer towards their intention to green consumerism to be tested.

2.6 Environmental Concern

An individual sees the risk he attaches to environmental problems as his concern towards the environment (Gould *et al.,* 1988). Others see environmental concern as part of a development occurrence, for instance, the concern over the excessive development that is not controlled (Brechnin & Kempton, 1994; Inglehart, 1992) or for some, environmental concern is the moral obligation of a human being which is a subset of their universal value (Stern *et al.,* 1995). Basically environmental concern is the individual's attitude towards the environment and Dunlap and van Liere (1978) suggested attitude to

be related to the consumers' evaluation of their concern about their environment and how they were able to protect their environment.

As posited by Laroche *et al.* (2001), importance and inconvenience were the two most studied attitudes in the ecological literature. A consumer who see's environmentally compatible behavior as part of their own responsibility and as well as the responsibility of the society is regarded as important and on the other hand, inconvenience was when a consumer finds it difficult to behave as a pro-environment individual and also finds it difficult to fit in the ecologically conscious group (Amyx, DeJong, Lin, Chakraborty & Wiener, 1994). Further to that, Bamberg (2003) revealed that the degree of environmental concern had a direct strong impact on people's behavior in especially in their behavior towards recycling, conservation behavior (energy saving, travel mode) and purchasing green product.

To fully apprehend the functions of attitude, Millar and Tesser (1986) suggested that attitude can be categorized into two types: cognitive and affective. As opposed to affective driven people who focus on emotions and perceptions, cognitively driven people rely on information and facts and thus shaping their attitude. In this present study, environmental concern used the cognitively driven approach to understand consumer's predictor to intention to green consumerism.

Attitude towards the environment had been researched for decades and carried out in various culture and nations. In the 90s, Elmer-Dewitt (1992) in his research mentioned

that conventional wisdom held that environmental concern was focused by a majority of those from rich industrialized countries from the Northern hemisphere compared to those from the Southern hemisphere's poorest nations. The justification of these was that the poorer nations were occupied worrying about their economic survival than worry about the environment whilst the richer nations were busy making profit and neglecting the environment. But this justification however has changed over the decades. As can be seen in the Global Summits, nations from third world countries, developing and developed countries participated together in battling issues regarding the degradation of the environment both globally and locally.

Gooch (1996) framed environmental concern into three distinctive elements: (i) perceived seriousness of threats to the local environment; (ii) perceived seriousness in the global environment; and (iii) past environmental friendly behavior. The first element, perceived seriousness of the threat to the local environment explains about an individual insight and awareness of their immediate surroundings. Their awareness was based on their own experience of the condition of the environment in their own backyards. Dunlap's (1994) work on environmental issues found that different cultures and personality react differently about their local environmental problems and most of the time, the environmental issues they were concerned were mostly on sewage treatment, water quality and air quality. In his study, Dunlap found that in a whole, Asians have a negative perception over their local environment as compared to their Western and European counterparts.

To add on further to Dunlap's work, Inglehart (1995, 1997) who surveyed respondents from 43 countries, ranging from rich countries to poor countries. His study found that respondents from rich countries such as Sweden, Denmark and Netherlands were mostly post-materialist as they were more concerned about the well-being of the environment and protecting the environment regardless the high expenses that would be incurred to ensure a cleaner and safer environment. On the other hand, the poor countries as observed by the researcher were still facing fundamental issues as regards to the environment – from water pollution to contaminated soil thus the environmental concern was more immediate to home rather than focusing on the greater issue of the environment from the global context (Inglehart, 1995). However, a more recent study by Khan and Zia-ud-Din (2010) based in Pakistan (a third world nation) revealed that threat to local environment was not as alarming as the threat to the global environment amongst the residents of the nation. The factors that supported such a contrasting findings from Inglehart (1995, 1997) was identified as first, the exposure of the mass media, which was creating awareness as regards to the global environmental concern, second, as the numerous appearance of environmental organizations in the Western world that were propagating environmental distress and hence were internalizing global environmental problems. The people of Pakistan according to Khan and Zia-ud-Din (2010) were more attuned to what was happening in the world rather than to what was happening in their own backyard. Thus it would be interesting to know Malaysian's attitude towards the intention to green consumerism since Malaysia is still in the developing country category.

2.6.1 Relationship between Environmental Concern and Intention

Follows and Jobber (2000) observed that the role of intentions in environmental concern and actual behavior of green consumer was dependent on the level of effort needed to perform the behavior. They further elaborated that the amount of effort required in the cognitive process translates to the intensity of the formation of intentions and thus it was expected that the effects of environmental concern on actual behavior of green consumerism will be mediated by intention. Nonetheless, scholars have supported that environmental concern reflects strongly on the attitude of the consumer and is a vital element in defining behavior (Ajzen, 1985; Nordlund & Garvil, 2002; Stern & Deitz, 1994).

Research over the past 30 over years had clarified the theoretical status of environmental concern in the intention and actual behavior of green consumerism model (Bamberg, 2003). Attitude has a significant relationship with intention (Ajzen, 1991) and Bagozzi, Yi and Baumgartner (1990) added on stating that intention plays a crucial role in the attitude and behavior relationship and whether the intention will be translated into action depends on the effort to perform the behavior. Werder (2002) posited environmental concern as to be significantly related to behavior intention. Werder went on to add that a person's beliefs and intention to perform an action reflects on the person's concern on the environment.

The concern over the environment had been a strong predictor to pro-environmental intentions (Bosnjak, Obermeier & Tuten, 2006; Joshi, 2003). The authors

found that environmental concern (attitude) has the highest total variance explained when regressed against intention as compared to other variables. This outcome was justified by Page and Luding (2003) who reasoned that most of the antecedents for behavioral intention were channeled through the construct attitude.

2.6.2 Relationship between Environmental Concern and Behavior

A meta-analysis by Glasman and Albarracín (2006) on a large sample size of respondents found that the factors that influenced the formation of an attitude were based on a guided future behavior. The statistical significance of the relationship between environmental concern and actual behavior had shown mixed results: low to moderate (Hines, Hungerford & Tomera, 1987) and an average correlation in the meta-analysis of 17 studies in Germany by Eckes and Six as mentioned by Bamberg (2003). A research carried out in the late 70s indicated that even when socio-demographic and psychographic variables shows significant correlation with verbal expressions of environmental concern by the sample population but conversely these variables had no or weak relationships with behavior of green consumerism (Weigel, 1977). However, in a different study in Germany by Balderjahn (1988) concluded that consumers in that nation were ecologically conscious and hence had a positive relationship between their attitude to the environment and their green product purchases. This was also supported by Mainieri's *et al.* (1997) study in Los Angeles which showed statistically significant positive relationship between attitude and green consumerism.

A study in Finland by Arvola *et al.* (2008) also revealed that Finnish respondents had positive affective attitudes towards buying environmentally friendly products. It was observed that some parts of the western society were displaying their concern over the environment from the late 90s till the present day. However in Malaysia, respondents did not show a statistically significant relationship between environmental consequences or attitude towards the environment and pro-environmental behavior (Ramayah *et al.,* 2010) and this finding was further supported by another study in the country whereby the researchers reported that there is no significant relationship between consumers' attitude and green products (Tan & Lau, 2010). In addition, there have been other studies in the past in other parts of the world showed that attitude has either very low or no significant relationship with their behavior towards the environment (Biswas, Licata, McKee, Pullig, & Daughtridge, 2000; Seligman *et al.,* 1979; Smith, Haugtvedt, & Petty, 1994).

Therefore this present study incorporated environmental concern to show that there is first a direct relationship between environmental concern and green consumer behavior secondly to show that intention to green consumerism mediates the relationship between environmental concern and green consumerism behavior.

2.7 Perceived Knowledge

Knowledge as defined in consumer research, is the characteristic that influenced all phases in the decision making process (Laroche *et al.,* 2001). How relevant and significant information is gathered and organized makes up as the core element of knowledge (Alba & Hutchinson, 1987), while Brucks (1985) posited knowledge as the

processed information that was to be used for decision making and researchers Muray and Schlater (1990) saw knowledge as the element that consumers use to evaluate products and services that the consumers' intent to purchase. From the environmental point of view, knowledge has been agreed as one of the significant predictor of environmentally friendly behavior (Chan, 1999) and as claimed by the past literature on environmental behavior, cognitively driven behavior had contributed to the increase in environmental knowledge and skills hence resulting higher commitment to pro-environmental behaviors (Hungerford & Volk, 1990).

It was argued that environmental knowledge evolves in two distinctive forms. The first form explains that consumers need to be educated to understand and comprehend the effect a product has on the environment whilst the second form states that consumers acknowledge that the product has been conceptualized and manufactured to be environmentally friendly (D'Souza *et al*., 2006a). The scholars further elaborated that many consumers seek the knowledge they require by reading product labels and by doing these their knowledge on environmental issues increases and therefore promote a positive attitude towards preserving the environment. This concept of environmental knowledge was also supported by Mostafa (2007) who reported university students in Egypt equipped with environmental knowledge had appreciation of the ecosystem and showed collective responsibility in sustaining the environment. Likewise, Conraud-Koellner and Rivas-Tovar (2009) in their study on Mexican consumers concluded that the general Mexican consumers have basic knowledge on the environment, their knowledge spans from ecological ethnocentrism to past behaviour and sensitivity on green products.

2.7.1 Relationship between Perceived Knowledge and Intention

Nevertheless, there were mixed reactions about the effectiveness of knowledge as a factor in the intention of green consumerism (Martin & Simintiras, 1995). Scholars, Arcury and Johnson (1987) described environmental knowledge as the facts that people know about the environment and the power that people have to take action on the environment. A study by Chan (1999) among respondents in China, showed a positive effect of knowledge as a variable in predicting green consumerism intention of a consumer and this supported Hines *et al.* (1987) study which mentioned that knowledge on environmental issues such as the problems, causes and solutions had a significant impact when predicting environmental action. In the same vein, Grunert (1993) who studied the purchasing behavior of consumers on green products found a statistically significant association between knowledge and intention to green consumerism. Furthermore, Nanere, D'Souza, Quazi and Rugimbana (2008) survey of Australian consumers discovered that knowledge was significantly important for the consumers to be savvy towards environmentally friendly products.

On the other hand, a study in the early 70s by Maloney and Ward's (1973) did not find any statistical significance between knowledge and intention to green consumerism. The authors however were intrigued with their results as literature argued that pro-environmental groups tend to have more positive environmental attitudes than compared to those who are not. Besides that, a longitudinal study from Australia which gathered data for knowledge, attitude, and intentions and behavior on the conservation of water and water management did not show any correlation between knowledge and intention to

environmental prevention. Even though it was posited that media and cost (water consumption cost) would play an influential element in changing the mindset of people to be pro-environment but alas it was concluded that behavior was better predicted by intention and not by knowledge as generally assumed (Watson, Murphy, & Moore, 1992).

2.7.2 Relationship between Perceived Knowledge and Behavior

Studies had presented that knowledge on ecology barely had any or no impact on the pro-environment behavior of consumers (Geller, 1981; Kaiser, 2003; Schahn & Holzer, 1990). Even though evidence in literature showed knowledge as not a predictor to intention and behavior, however, Tikka, Kuitunen and Tynys (2000) established knowledge to be associated with nature- or environment-related activity. But then again, the researchers were not able to answer their question if good knowledge leads to high levels of activity. In retrospective a Californian study among college students indicated a positive effect between knowledge and green consumerism (Kaiser *et al*., 1999) and further to that, a study by Abdul Wahid, Rahbar and Tan (2011) among pro-environment volunteers in Penang who participated in any environmental related activities, discovered that environmental knowledge had a positive but an insignificant relationship with green purchase behavior. Kaiser and Fuhrer (2003) also added on by stating that knowledge has minimum impact on pro-environmental behavior when other factors are more effective in predicting behavior.

With the mix findings about knowledge as being the predictor of intention and behavior of green consumerism, this present study intended to first test if there is a

significant relationship between perceived knowledge and green consumerism behavior and secondly to test the significance of the relationship between perceived knowledge and green consumerism behavior mediated by intention to green consumerism.

2.8 Perceived Environmental Responsibility

Stets and Burke (2000) described the sense of responsibility as the view of life one adopts which incorporates meanings and expectations associated with a relevant categorization into the self, thus forming a set of identity standards that guide identity-relevant behaviors. Added on to this was Gill's (2012) explanation on environmental responsibility that states responsibility is socially developed and manifested according to the individual's reflection on the social relationship, experiences and structures of the culture or society.

Studies had shown that consumers had acquired more environmental knowledge and awareness of environmental problems over the years (Lai, 2000; Lee, 2009). As in the case of a study in Hong Kong, Lai (2000) reported that the people of Hong Kong were hesitant to make individual sacrifices but instead they expected the government to take a more proactive public policy to protect the environment as well as eradicate environmental problems.

In another study, Zelezny, Chua and Alrich (2000) added that females had higher levels of perceived personal responsibility towards environmental problems and tend to be more responsible for the well-being of the environment compared to males. Lee

(2008) also revealed female students in Hong Kong to be more concerned over the environment and regarded it as their personal responsibility to keep the environment clean and safe for everyone. The author further elaborated that environmental behavior carried an altruistic meaning; individuals were willing to spend their precious time and set aside their preferred activities just to perform tasks to protect the environment. Female children in Hong Kong as reported by the author felt responsible to the environment and thus were willing to partake in projects that were pro-environmental. Generally, studies had also identified besides gender, age, education level, and the consumer's profession too plays a part in their decision making and sense of responsibility (Cheng *et al.,* 2008; Getzner & Grabner-Kräuter, 2004; Laroche *et al.,* 2001; Pickett-Baker & Ozaki, 2008).

Nonetheless, Hormuth (1999) argued that some people will perform certain acts or activity as part of a symbolic function that means something to the person. The author prescribed that a person might conform to certain activity as a symbol of status or even to create an impression upon others or just to acquire an identity especially in the adolescent stage of life. Because being pro-environment is a special kind of altruistic act, it carries symbolic functions and can be used for self-identity formation or self-presentation to others who one is (Hopper & Nielsen, 1991; Lee, 2009). Moreover, Babcock (2009) stressed that by taking responsibility over the environment, society will begin to stop blaming someone else for harming the environment.

However, Follows and Jobber (2000) raised concern that most of the research on environmentally responsibility was conducted in the 70s and 80s when evaluation of a

product's impact on the environment were hardly considered by most people and hence studies on this factor was mainly focused on non-consumption behaviors such as energy conservation and political activism. Therefore, there is a need to study environmental responsibility from a consumption behavior such as post-purchase behaviors, recycling and waste separation to name a few at this present time. This present study hence looked into environmental responsibility as past purchase behavior, recycling and conservation behavior.

Nevertheless, some scholars had provided evidence suggesting that the self-identity dimension can be useful in studying the motivations to behave as a green consumer (Mannetti, Pierro & Livi, 2004; Stets & Biga, 2003). For instance, Mannetti and friends had reported that an individual's personal identity of being an environmentally-responsible person contributed significantly to the explanation of intentions to recycle. It was noted that identity exploration was most salient in adolescence (Sharp, Coatsworth, Darlin, Cumsille & Ranieri, 2007). Furthermore, in recent studies on identity formation, it showed that individuals engaged in self-defining activities such as those activities that individuals identify as being important to who they are to explore, develop and reflect their own identities (Waterman, 2004). According to Coatsworth *et al.* (2005), the activities that were most significant to identity development were those that provided a sense of special meaning with lots of wisdom of importance or self-actualization to the individuals. In this regard, environmental behaviors could be considered as potentially self-defining activities because they often carry the symbolic meanings of morality, unselfishness, nature-orientation and eco-aspirations.

But on the other hand, customers may be willing to accept green consumerism but they were faced with constraints or conflicts that created resistance to adopting a green consumer behavior. One of the most common findings in the literature was that customers want to be environmentally responsible but at the same time, want to maintain their present lifestyle (Manaktola & Jauhari, 2007; McDaniel & Rylander, 1993). Some of them were not prepared to sacrifice convenience (Stern, 1999) or pay a price for green products (Peattie, 1999). This research therefore undertook the task to identify if perceived environmental responsibility was a social factor in predicting intention and behavior of green consumerism.

2.8.1 Relationship between Perceived Environmental Responsibility and Intention

Scholars have argued that self-identity should be taken into account in predicting behavior and empirical evidences had proved that self-identity does predict behavioral intention (Conner & Armitage, 1998; Sparks & Shepherd, 1992). In a recent study in Malaysia, Mohd Yusof, Bariam Singh and Abdul Razak (2013) mentioned that the growing trend over the years towards an ecological friendly environment has inadvertently increased consumers sense of responsibility towards greening the environment. According to Kim and Damhorst (1998), consumers who are positively inclined towards preserving the environment and have a strong sense of responsibility to the environment have higher intention and even willing to pay more for their merchandise. Similarly, scholars also mentioned that consumers who display strong sense of responsibility to environmental issues tend to have strong intention to be a green consumer (Kaiser *et al.*, 1999; Schultz & Oskamp, 1996).

2.8.2 Relationship between Perceived Environmental Responsibility and Behavior

Vandenbergh and Steinemann (2007) mentioned that people exercise a sense of responsibility towards the environment especially when they are exposed to relevant information on the health harms that is caused by pollution. Conforming to that, Babcock (2009) added that environmental responsibility induces behavioral change. Babcock went on to say that people assume environmental responsibility to improve the environment. Kuh (2011) reasoned that consumers conform to personal environmental responsibility when their action is visible, that is, when the individual's action towards the environment can be seen as harming or harmless to the environment.

Besides knowledge, control behavior, attitude, responsibility and personal values, subjective norm was also discovered by researchers as an element that shapes consumers' behavior towards green markets (Apaiwongse, 1994; Cheng *et al.*, 2008; Pickett-Baker & Ozaki, 2008) and this element is discussed in the next section.

2.9 Subjective Norm

Subjective norm as defined by Sparks and Shepherd (1992) is the perception of a person on how others would think about them if they did or did not carry out the intended behavior. Ajzen (1991) referred to subjective norm as the perceived social pressure that a person gets to either perform or not perform the behavior in matter. The social pressure and the behavioral influence of peers, parents, and society had shown an effect to environmental behavior (Chan, 2001; Tucker, 1999). To add on to the definition,

Venkatesh and Davis (2000) posit subjective norms to be found to have a direct impact on intention especially in mandatory setting.

Subjective norm was also known as the reference group norm in which a person or a group has the ability to influence someone else's decision. Normally reference groups are used as a platform for individuals to form affective and cognitive responses so that the individual feels they fit in the circle of people they are with (Peter & Olson, 1999). Numerous literature is available on the topic of reference group influences and it has been widely used in the social sciences to examine the impact of reference groups from the consumer's context as the role of reference groups can greatly impact behaviors. Besides that, consumers are known to refer to their reference groups for important source of product information, meaning and brand selection (Childers & Rao, 1992; Escalas & Bettman, 2005).

Those who had a group identity would normally purchase products as per the actions of the other group member and the sense of belonging to a group has a big impact in their decision making process. From literature, two outstanding types of reference group were usually discussed; normative referents and comparative referents (Robinson & Doss, 2011). Normative referents are parents, teachers and peers of which the individual has direct interaction with while comparative referents are entertainment or sports figures. It was rather common for marketers to use sports or television/movie icons or celebrities to endorse products. The marketers had gauged this idea from consumers who idolized their sports and or television/movie icons because for these consumers,

using the product that has been endorsed by their idol makes them belief that they belong to the same group as their idol. It was illustrated that those who wants to belong to a group to which of their idols actually aspire and enact self-concept development to be like their idol. In respect to this, scholars identified comparative referent group to contribute to the formation of values and attitudes and influence purchase decisions of consumers (Bearden & Etzel, 1982; Childers & Rao, 1992; Robinson & Doss, 2011; Sheth, Mittal & Newman, 1999).

On the other hand, Park and Lessig (1977) categorized reference group influence into three categories: informational, utilitarian and value-expressive. The first category, informational influence is when the reference group provides useful and important information which would directly enhance the individuals' knowledge and hence would influence the individual's decision making and behavior as well help the individual to cope with the environment. The second category, utilitarian influence, is the influence created by a reference group that focuses on rewards and punishment. The reference group will monitor the individual and make the individual belief that the individual's actions will be made public thus creating the sense of being observed and judged on the individual and given the appropriate consequences for the individual's behavior. The third category, value-expressive influence, is about an individual's self-concept. This value-expressive reference groups, usually bolsters individual's ego. The reason why an individual belongs to a value-expressive groups could be because he/she could identify themselves to that particular group. The outcome of any one of the three types of influence on an individual is the pressure on the individual to conform to the group,

basically a person is forced to alter his behavior which normally results either strengthening or lessening the attitude – behavior inconsistency.

It was a general perception that reference group would influence green consumerism behavior and this can be seen with the growing number of people joining the pro - environmental group as they feel they are fighting for a good cause. It was seen that if a group to which a person belonged or aspired to belong, displayed behaviors congruent with their pro-environmental attitude, the individual would be under more pressure to conform. In contrast when a reference group does not display congruent behaviors, the individual would less likely to translate their own behavior into action (Gupta & Odgen, 2009).

Furthermore, Gupta and Odgen (2009) stated that subjective norm as a social variable which explained that people were more likely to participate in similar activities if they expected others to do the same with them. In retrospect, some people would choose to participate in activities as they do not want to be feeling like an outsider and indirectly to protect themselves from being seen as an outcast. Why do people behave in such a manner was explained by van Lange, Liebrand, Messick and Wilke (1992) when the authors proclaimed that the expectation-choice relationship existed because (1) social norms play an instrumental role in social dilemma and individuals infer these norms when made aware of others' expectations; (2) the tendency to conform; (3) their own intended choice being the cause; and (4) post hoc justification to explain choice in terms of others' expectations.

2.9.1 Relationship between Subjective Norm and Intention

Numerous scholars posited that subjective norm had a positive significant correlation with behavioral intention and strongly supported the notion that reference groups had a great impact in the decision making process of an individual (e.g. Beale & Manstead, 1991; De Cannière *et al.*, 2009; Hillhouse, Turrisi & Kastner, 2000; Schlegel, d'Averna, Zanna, DeCourville & Manske, 1992). Subsequently, a positive strong correlation between subjective norm and intention to green consumerism were also reported in numerous studies (e.g. Bamberg, 2003; Kalafatis, Pollard, East & Tsogas, 1999; Tarkiainen & Sundqvist, 2005). A study by Robinson and Smith (2002) in Minnesota, United States of 550 urban and suburban consumers showed a positive relationship between subjective norm and intention to purchase green products and this was also supported by another study amongst non-academics in a university in the United States by Minton and Rose (1997) concluded in their research that subjective norm was positively related to intention to purchase sustainable green products. Moreover, the researchers tested the effects of environmental concern, personal norm and injunctive norm on the eco-friendly behavior and then on the behavioral intentions and reported significant overall effects.

2.9.2 Relationship between Subjective Norm and Behavior

Lee (2009) in the study based in Hong Kong, iterated from past studies that peer group influence is a strong determining factor in an adolescent's social context. Various scholars had suggested reference group influences in various dimensions, for instance, as reinforcing and punishing agents (Lamb, Easterbrooks & Holden, 1980); as modeling

agents (Sagotsky & Lepper, 1982); as objects for social comparison (Shaffer, 1994); and as value-setter for a particular idea or behavior (Shaffer, 1994). Further to that, Chen-Yu and Seock (2002) posited that conformity was a significant motivation for an adult to make a decision and Lascu and Zinkhan (1999) added that adults' decision making was often made in accordance with peer group opinions. These findings show that subjective norm has been an indicator in determining behavioral action. According to Taylor and Todd (1995) the influence of subjective norm on behavioral action is statistically significant and even more, their study further showed that the more positive the influence of peer and family, the stronger the behavioral tendency and vice versa.

Therefore the need to understand the extent to which reference group influence has an intention to green consumerism is inevitable. When individuals strongly identify with a group, they were more likely to make decisions that were driven by collective decision rather than self-interest. This present study firstly tested the relationship between subjective norm and intention and secondly the relationship between subjective norm and green consumerism behavior mediated by intention.

2.10 Perceived Behavioral Control

Ajzen (1991) described perceived behavioral control as the ease or difficulty of an individual performing a task of interest while Chen (2011) referred it to the extent of control that a person exerts on performing the behavior. Several studies (Berger & Corbin, 1992; Kinnear *et al.*, 1974; Roberts & Bacon, 1997) had discussed the notion that perceived control behavior is actually the belief of the consumer that he or she would be

able to convince a positive outcome on environmental issues. Basically scholars addressed perceived behavioral control as the attitude and responses to environmental issues by an individual, and the perception of individuals towards their intended action had been widely researched (D'Souza *et al.,* 2006a; D'Souza, Taghian, Lamb & Peretiatkos, 2006b; do-Paço & Raposo, 2009; Laroche *et al.*, 2001; Lee, 2008; Pickett-Baker & Ozaki, 2008).

A renowned psychologist, Bandura (1982) researched on human behavior excessively. According to him the concept of self-efficacy is submitted to the belief that once can successfully execute a behavior required to produce an outcome of the individual tells himself that the task to be done is going to be easy. This kind of self-control exists in everyone, it is the degree of what is easy and what is difficult that differs from one to another. Hence Bandura, as like other scholars had concluded that perceived behavioral control is the individual's belief and perception of the task at hand on whether it is easy or difficult to perform.

2.10.1 Relationship between Perceived Behavioral Control and Intention

Ever since the inclusion of perceived behavioral control variable to the theory of planned behavior by Ajzen (1985), scholars dutifully researched the effect of this variable to the behavior framework (Conner & Armitage, 1998; Hines *et al.,* 1987; Kaiser, Wolfing & Fuhrer, 1999). They found that generally the belief system of an individual to perform a behavior was influenced by internal and external factors, the internal factors would be the perceived control behavior that is ruled based on the easiness to perform the

task in hand whilst the external factors were the influence of peers and family or society to perform the task. In brief, perceived behavioral control was linked to control beliefs. Thus, the intention to perform a behavior was enhanced under conditions of favorable attitude towards the behavior, subjective norm and greater perceived behavioral control, which was in accord to Bandura's (1982) findings. Besides that, Ajzen (2002) also suggested that a person who has the intention to carry out a behavior normally will be the person who was given a certain degree of control over the behavior. It was therefore essential to identify whether Malaysians are perceived to be pro-environment based on the easiness of the tasks that is involved to be a green consumer.

Other research also from the United States, from the state of Minnesota by Robinson and Smith (2002), examined the psychosocial and demographic variables associated with consumer intention to purchase sustainably produced food amongst 550 respondents and found perceived behavioral control positively correlated with intention to green consumerism. These findings were then supported by von Borgstede and Biel (2002) who revealed a positive correlation between perceived behavioral control and willingness to act pro-environmental behavior when the situations to perform pro-environmental tasks were easy in contrast to when the situations to perform pro-environmental tasks were difficult. The researcher summarized that generally, behaviors that were perceived to be easier to perform will be completed over difficult behaviors. In the same vein, Ellen, Weiner and Cobb-Walgren (1991) also demonstrated that perceived consumer effectiveness made a unique contribution to predicting the intention to purchase green products and this was supported by McCarty and Shrum (2001) who

stated that it was the fundamental concept of humans that their beliefs on their ability to influence future outcomes and their desire to be beneficial to others that would influence their pro-environmental behavior especially when people believed they have more resources such as funds, time and proficiency to be a green consumer.

However, a study carried out in Australia showed that perceived control behavior had no effect on intention to purchase environmentally friendly products as per the findings by Ng and Paladino (2009) who studied on the significance of the relationship in intention to purchase green mobile phones among young consumers in Australia. This varied results from these two different continents evoked a question on why the diverse outcome, thus the question - do people from different cultural background have different perception of their control behavior?

2.10.2 Relationship between Perceived Behavioral Control and Behavior

The need to study this variable was also based on past studies which showed a mixed result on the role of perceived behavioral control on green behavior (De Cannière, De Pelsmacker & Geuens, 2009; Shamdasani, Chon-Lin & Richmond, 1993; Sparks & Shepherd, 1992; Straughan & Roberts, 1999). Berger and Corbin (1992) in their survey on Canadians and Americans concluded that people in general if think they can make a difference in saving the environment, they would actually do whatever it takes to make this earth a better place. The research found that the perceived consumer effectiveness had a significant relationship with consumer behavior.

It was also observed by Glasman and Albarracin (2006), that attitude correlates strongly to future behavior when the behavior was easy to recall and easy to execute. Therefore because of the ease of performing certain behaviors such as switching off the electricity as you leave the room, it forms strong predictors for future behavior especially when individuals have direct experience with the behavior.

In the Theory of Planned Behavior Ajzen (1985) attested that behavior intention mediates the relationship between perceived behavioral control and behavior and the theory also showed that perceived behavioral control has a direct relationship with behavior and this had been proven by research (Amireault, Godin, Vohl & Pérusse, 2008; Sheeran, 2002; Sheeran, Trafimow & Armitage, 2003). Thus this present study tested both the relationships, first the mediating effect of intention between perceived behavioral control and green consumerism behavior and next the direct relationship effect of perceived behavioral control and green consumerism behavior.

2.11 Theoretical Underpinning

A number of theories of consumer behavior had been discussed from various angles from the social sciences, psychology and economics perspective. In the marketing context, most theories provided an understanding of alternative brands or product comparison but they do not explain how such comparisons translate into buying decisions (Kalafatis *et al.,* 1999). This research looked at the consumers' intention to green consumerism and green consumerism behavior, to see if a consumer bridges the gap of intention to behavior with the moderation of green advertisement. To study consumer

behavior, many a theory was formed to explain attitude especially from the social psychology's point of view (Ajzen & Fishbein, 1980). Two famous theories, Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) were frequently discussed in various literatures when it comes to intention to purchase green products and the purchasing behavior of green consumers. Both these theories will be discussed here and the most suitable theory was adopted for this study.

The Theory of Reasoned Action (TRA) was developed in the late 1960s and was revised in the early 1970s but the derivation of the theory can be traced back to 1860s when psychologists began to develop theories of attitude and its impact to behavior. TRA was formalized by Fishbein and Ajzen (1975) with belief and attitude as the antecedents for intention and behavior. Figure 2.2 shows the schematic representation of effects of stimulus variables on intentions (Fishbein & Ajzen, 1975, p. 334).

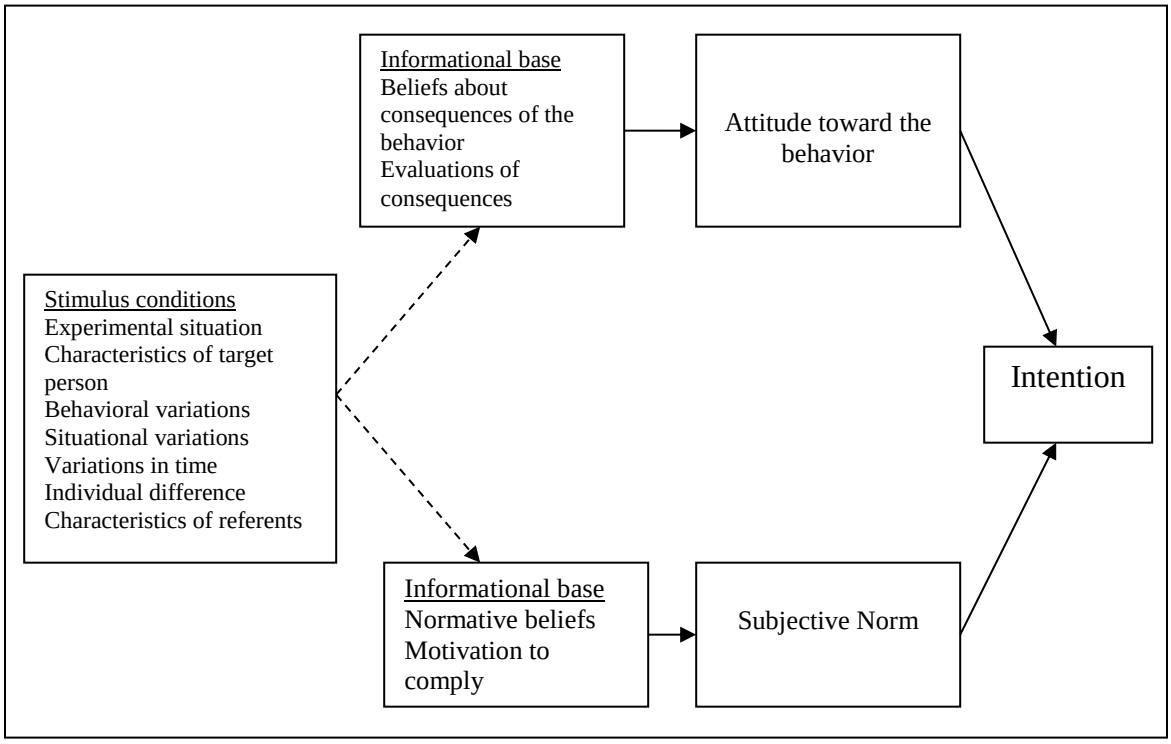

Figure 2.2. Schematic Representation of Effects of Stimulus Variables on Intentions. Adapted from *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research* (p. 334), by M. Fishbein and I. Ajzen, 1975, Reading, MA: Addison-Wesley.

Fishbein and Azjen theorized in 1975 stating that both personal factor and social factor have an influence on a person's intention and behavior to execute a certain action. The intention to perform an act from the personal factor was known as the attitude whilst from the social factor's point, the intention and the behavior of performing a certain act was identified as a social norm. This theory by them was further reinforced by more recent scholars who defined attitude as the consequence of a person's salient belief on the result of performing a particular behavior multiplied by the evaluation of those results (Suh & Han, 2003). Meanwhile, social norm refers to the influence to behave in a certain manner as the result of the perceived expectation of the person caused by his peers and surroundings which sometimes directly motivate the person to comply and conform with

other people (Manning, 2011). In a nutshell, the theory of reasoned action by Fishbein and Azjen deducts that firstly a person reason to perform an act is strongly linked to his intention to perform that behavior, and secondly the intention to perform the behavior intention was determined by both the person's attitude and social norms towards the behavior.

However, since the use of the theory of reasoned action, scholars revealed that the theory was lacking of certain elements and they posited the theory to be inadequate and had limitations and could not be absolutely used to predict behavior (Godin & Kok, 1996). In reviewing the theory, Fishbein (2008) explained that TRA was inadequate to explain behavior by rationalizing behavior as a composition effect of emotional, compulsion and other non-cognitive human behavior. Subsequently, to overcome the shortcomings of TRA, Azjen (1985) revised the theory and introduced a new element into TRA and thus extending TRA into a new theory called Theory of Planned Behavior (TPB). The new theory, TPB has perceived behavioral control as a new element which has the main objective of predicting an individual's behavior as to see if it has partial or full volitional control on intention and consequently to behavior. Thus the formation of a new backbone to the model which has first the belief, second the intention and finally the behavior.

The Theory of Planned Behavior asserts that an individual's actual behavior was influenced by the person's intention to the behavior. The intention however was initially influenced by the attitude towards the behavior, the subjective norms about performing

the behavior and also the perception whether an individual can successfully perform the behavior. The theory further explained that attitude was derived from the behavioral belief, whereas the consequences of the normative belief was subjective norms which was the resultant of the motivation to comply with others. Finally perceived behavioral control was determined by the control belief and perceived discernment that the task to perform was going to be easy.

In supposition, the difference between TRA and TPB was the introduction of the new variable, perceived behavioral control, to the existing model of TRA. Perceived behavioral control came about from Bandura's (1977) concept of perceived self efficacy whereby when a person believes he can do a task, he actually can do it (Azjen, 2002). Hence in the theory, perceived behavioral control means the level of perceived ease or difficulty an individual encounters when an individual performs the behavior. This theory further anticipated that intention to perform behavior was the proximal cause of such behavior as intentions represent motivational components of behavior, that is, the degree of conscious effort that a person will exert in order to perform a behavior. Nevertheless, Ajzen (1985) conceived the purpose of the theory to be able to predict and understand motivational influences on behavior especially behavior that was not under the individual's volitional control; to identify how and where to target strategies for changing behavior; and to explain virtually any human behavior, as in this present research why consumers choose to purchase green products, or recycle or practice conservation of the environment. Figure 2.3 shows the model of the Theory of Planned Behavior.

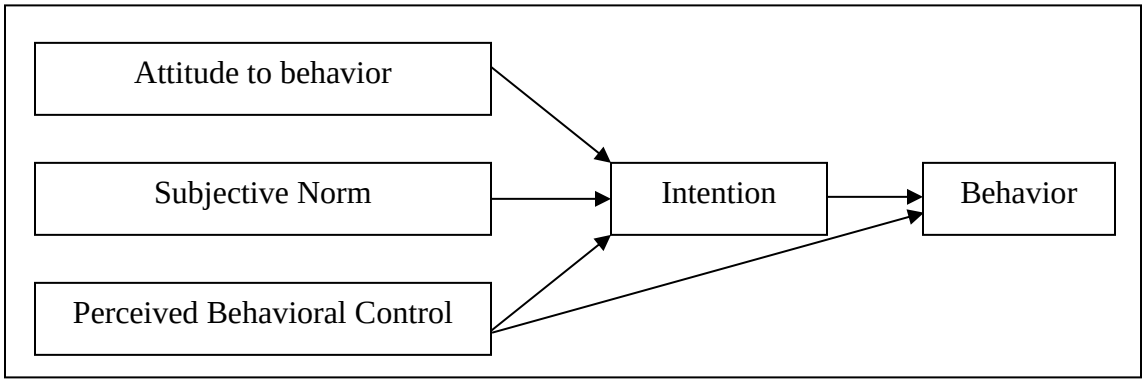

Figure 2.3. Model of Theory of Planned Behavior. Adapted from *From Intention to Actions: A Theory of Planned Behavior* by I. Ajzen, 1985, Heidelberg: Springer.

A number of researchers had used the Theory of Planned Behavior in their research on green consumerism. Chan and Lau (2001) used the Theory of Planned Behavior model to show an acceptable level of external validity in measuring green purchase behavior of American and Chinese consumers. Likewise, Mostafa (2006) also used the theory of planned behavior to empirically estimate an attitude-intention-purchase model to explain Egyptian green consumerism. This theory has been proven over time to be a robust theory to explain humans' behavior and has thus gained reliability and credibility when it comes to assess behavioral research.

Therefore, the conceptual framework for this research was formalized using Ajzen's (1991) Theory of Planned Behavior with the view that consumers' anticipated satisfaction with a product (and hence the intention to purchase the product) was determined by their attitude (environmental concern), perception on the ease of executing the task (perceived behavioral control) and the opinions of their peers and family (subjective norm). This present study further added three new variables, that is, moral norm, perceived knowledge and perceived environmental responsibility as predicting

factors for intention to green consumerism and one of the reasons for this is because TPB does not account for other variables that factor into behavioral intention such as fear, threat, mood or past experience besides not taking into account environmental factors that may influence a person's intention to perform a behavior. Moral norm in this present study addresses the lack of accountability of the altruistic values, egoistic values and traditional values which creates an awareness of consequences and responsibility in pro-environmental behavior. Perceived knowledge on the other hand was added in the present study to tackle the issue of TPB not taking into account environmental or economic factors that may influence a person's intention to perform a pro-environmental behavior. The addition of perceived environmental responsibility was to attend to the issues in TPB that was not touching on the responsibility which is socially developed and manifested according to the individual's reflection on the social relationship, experiences and structures of the culture or society when it comes to pro-environmental behavior.

TPB also lacks in addressing the time frame between "intent" and "behavioral action". The introduction of green advertisement as a moderator was to confirm if advertisements would play a vital role in bridging the time frame between intent and behavioral action. Over the past several years, researchers have used some constructs of the TPB and added other components from behavioral theory to make it a more integrated model for pro-environmental behavior.

2.12 Theoretical Framework

Based on the above arguments, the research model as seen in Figure 2.4 was formalized for this present study. The Theory of Planned Behavior had attitude, subjective norm and perceived control behavior as the independent variables, intention as the mediator and behavior as the dependent variable. This study introduced moral norm, environmental concern, perceived knowledge of the environment and perceived environmental responsibility as new independent variables. Green advertisement was introduced as the moderator to form a conceptual framework on factors influencing behavior of green consumerism among Malaysians in Penang.

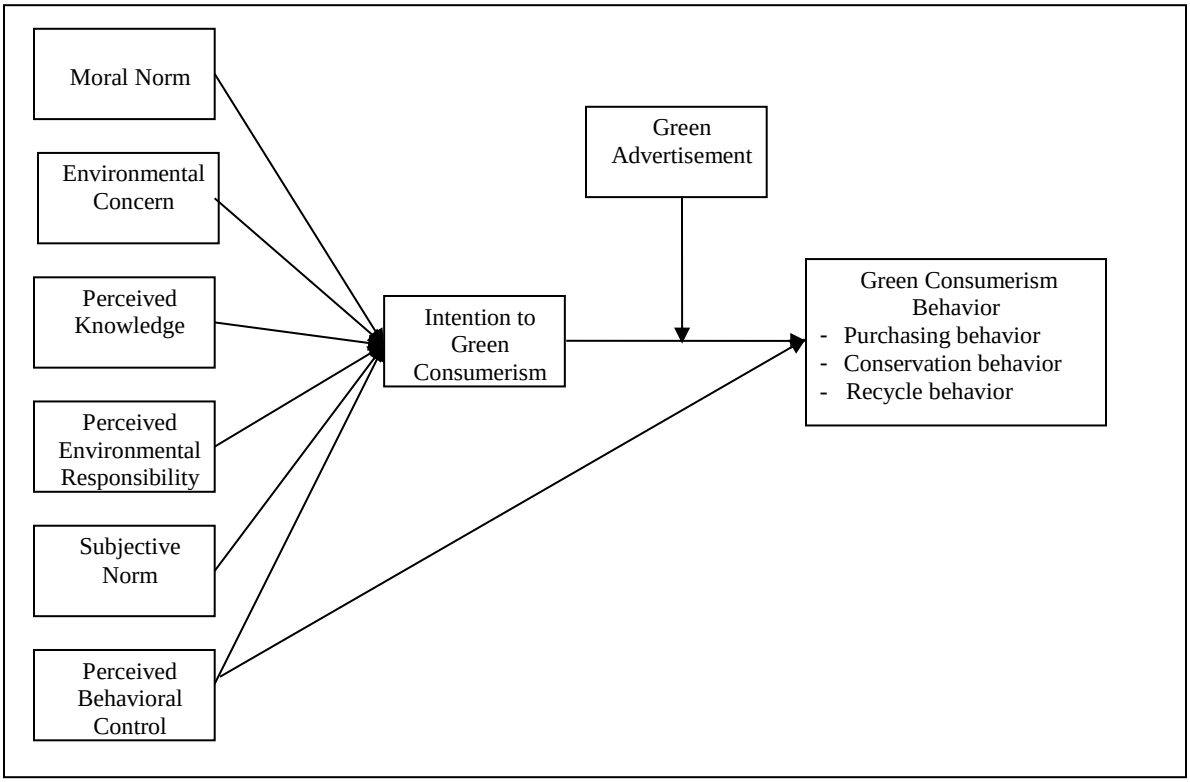

Figure 2.4. A Theoretical Framework on Factors Influencing Penangite's Green Consumerism Behavior

2.13 Hypotheses

The theory of planned behavior has over the years proved that attitude, perception and subjective norm are the predictors for intention. Based on past literature discussed in the earlier sections, it was noted that there were discrepancy in the significance of these predictors namely, environmental concern (Follows & Jobber, 2000; Nordlund & Garvil, 2002; Stern & Deitz, 1994), subjective norm (Beale & Manstead, 1991; De Cannière *et al.,* 2009; Hillhouse, Turrisi & Kastner, 2000) and perceived behavioral control (Conner & Armitage, 1998; Hines *et al.*, 1987; Kaiser, Wolfing & Fuhrer, 1999). Besides that, scholars have also discussed various other predictors of intention such as moral norm (Chan, 2001; Parker, Manstead & Stradling, 1995; Vermeir & Verbeke, 2007), perceived knowledge (Chan, 1999; Hines *et al*., 1987; Nanere, *et al*., 2008) and perceived

responsibility (Conner & Armitage, 1998; Mohd Yusof, Bariam Singh & Abdul Razak, 2013; Sparks & Shepherd, 1992). Therefore this study hypothesized the following to determine the significance of these factors on predicting intention to green consumerism.

H1a: There is a positive significant relationship between moral norm and intention to green consumerism.

H1b: There is a positive significant relationship between environmental concern and intention to green consumerism.

H1c: There is a positive significant relationship between perceived knowledge and intention to green consumerism.

H1d: There is a positive significant relationship between perceived environmental responsibility and intention to green consumerism.

H1e: There is a positive significant relationship between subjective norm and intention to green consumerism.

H1f: There is a positive significant relationship between perceived behavioral control and intention to green consumerism.

.

The relationship between intention and behavior has usually been yielding between 20 to 40 percent of variances in predicting behavior (Downs & Hausenblas, 2005; Godin & Kok, 1996; Hagger, Chatzisarantis, & Biddle, 2002) but anyhow, scholars still found this variance is too small (Kelley & Abraham, 2004; Sheeran, 2002). Besides that, there have been mixed findings on the significance of the relationship between intention and behavior. Scholars who had found significant relationship (Armitage & Conner, 2001; Gollwitzer & Sheeran, 2006) have been refuted by those who found non-

significant relationship between these two variables (Banerjee, Charles & Easwar, 1995) thus prompting the construction of the following hypotheses.

H2a: There is a positive significant relationship between intention to green consumerism and green purchase behavior.

H2b: There is a positive significant relationship between intention to green consumerism and green conservation behavior.

H2c: There is a positive significant relationship between intention to green consumerism and recycle behavior.

The present green consumer generation has actively been looking for environmentally friendly products as a better alternative in their everyday living. Consumers are more aware of the consequences of not being eco-friendly. The involvement by consumers on environmental issues shows strong relationship (Hartmann & Ibáñez, 2006). Scholars found values, beliefs, norms and habit are contributing factors that explain the green behavior of an individual (Carrete *et al.,* 2012; Hansla *et al.,* 2008; Jansson, Marell, & Nordlund, 2010). The following were hypothesized to examine the significance of the relationship between the independent variables and dependent variables mediated by intention to green consumerism.

H3a: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green purchasing behavior mediated by intention to green consumerism.

H3b: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green conservation behavior mediated by intention to green consumerism.

H3c: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and recycle behavior mediated by intention to green consumerism.

'To do or not to do' has always been a debate among us. We would perform a task if we find the task to do is easy or otherwise. According the theory of planned behavior, perceived behavioral control has both a direct relationship with behavior whilst at the same time perceived behavioral control has a significance relationship to behavior when mediated by intention. Even though the relationship has been proven in past research, the need to study this variable still arises as literature had showed a mixed result on the role of perceived behavioral control on green behavior (De Cannière, De Pelsmacker & Geuens, 2009; Shamdasani, Chon-Lin & Richmond, 1993; Sparks & Shepherd, 1992; Straughan & Roberts,1999). Therefore, the following hypotheses were developed to examine the direct relationship between perceived behavioral control and green behavior.

H4a: There is a positive significant relationship between perceived behavioral control and green purchase behavior.

H4b: There is a positive significant relationship between perceived behavioral control and green conservation behavior.

H4c: There is a positive significant relationship between perceived behavioral control and recycle behavior.

The gap between the intention-behaviour relationships was predicted to vary according to the modifier or moderator, the green advertisement. Advertisement has always played an important role in persuading consumers to actively participate pro-environmental behaviour (Cope & Winward, 1991; Fuller & Ottman, 2004; Kinnear, Taylor & Ahmed, 1974). This study therefore aimed to investigate the effectiveness of this moderator from the Malaysian content thus the following hypotheses were developed.

H5a: Green advertisement significantly moderates the relationship between intention to green consumerism and green purchase behavior.

H5b: Green advertisement significantly moderates the relationship between intention to green consumerism and green conservation behavior.

H5c: Green advertisement significantly moderates the relationship between intention to green consumerism and recycle behavior.

2.14 Chapter Summary

This chapter had provided the introduction to the literature on green consumerism behavior that has three dimensions: purchasing decision, conservation habits and recycling habits. Next the literature defined the intention and behavior gap and discussed further the role of green advertisement as the moderator to study the relationship between intention and behavior. The literature review had demonstrated the presence of mixed findings on six independent variables: moral norm, environmental concern, perceived

behavioral concern, perceived knowledge, perceived environmental responsibility and subjective norm. The chapter also discussed the underpinning theory, the theory of planned behavior and subsequently listed 18 hypotheses that were to answer the research questions as stated in Chapter One.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This study was designed to examine the first the relationships between moral norm, environmental concern, perceived control behavior, perceived knowledge, a perceived environmental responsibility and subjective norm towards intention to green consumerism, second the relationship between moral norm, environmental concern, perceived control behavior, perceived knowledge, a perceived environmental responsibility and subjective norm towards green consumerism behavior mediated by intention to green consumerism and finally this study also examined the impact of green advertisement as moderator between intention to green consumerism and green consumerism behavior. This chapter presents the methodology that was used to answer the research questions and discussions include the research design, sampling procedures, instrumentation, validity and reliability of the instruments, data collection and the data analysis methods that were used to test the hypotheses.

3.1 Research Design

This study adopted a quantitative method approach which enabled knowledge claims on pragmatic grounds. The present study is a cross-sectional as well as correlational in nature as this approach uses several basic procedures to obtain information from people in their natural environment (Graziano & Raulin, 1997). Further to that, Gravetter and Forzano (2009) mentioned that in a survey, it is not necessary to

observe directly the person's behavior, instead, participants response to the questions asked is deemed to be their account of their behavior. This approach is appropriate for the present study as the aim of the study was to understand the intention and green behavior of consumers.

Moreover, a survey based research has its advantages as the methodology can be controlled and inaccessible information can be obtained easier, besides the ability to generalize the findings (Leedy, 1997). Furthermore Kerlinger (1973) attested that a survey is best adapted to obtain personal and social facts, beliefs and attitudes. One other reason a self-imposed questionnaire was used in this research was because the questions which was adapted from literature and have a high level of validity, and as according to Lyon, Lumpkin and Dess (2000) such survey method has a relatively high level of validity since questions can be posed directly addressing the underlying nature of a construct. Additionally, Marshall (1996) presented quantitative sampling as the approach to draw representatives from the population which then can be generalized back to the population. The unit of analysis for this study was individuals living in Malaysia but limited to those shopping at the hypermarket or supermarket. Each individual data was treated as an individual data source.

3.2 Sampling Procedure

The sampling frame for this research was obtained from the Department of Statistics, Malaysia 2012 demographic indicators. The population projection was based on the adjusted data from the 2010 population and housing census. The projected

population for the year 2012 for the state of Penang was 1,611,100 with an annual population growth rate of 1.1%. Further to that, the demographic indicators reported that 71.0% of the Penang population is in the age group of 15 to 64 years old, however this research focused on respondents who were aged between 18 years and 60 years old as this age range would have the spending power and disposable income (Mohamed & Yusof, 2012).

3.2.1 Sample Size

This research used probability sampling method. According to Krejcie and Morgan (1970) and supported by Cavana, Delahaye and Sekaran (2001) and Saunders, Lewis and Thornhill (2007), a sample size of 384 is sufficient for a population of approximately 1,611,100. Besides, Roscoe's (1975) proposed rule of thumb which states that a sample size larger than 30 and less than 500 is appropriate for most studies, was also adhered to in this present study and this was attest by other authors who stated that a sample size of less than 100 is regarded as small, medium sample size is between 100 and 200 while large sample size is more than 200 (Hair, Anderson, Tatham & Black, 1995; Kline 1998). Therefore, in this study, a sample size of more than 385 was accepted as appropriate and sufficient for analysis.

The present study used a mall intercept technique to obtain samples. This method for data collection allowed the researcher to have a face-to-face contact with the respondents and to screen them for appropriateness (Green & Krieger, 1991). According to Bush and Hair (1985) a mall intercept technique is better in providing less distorted

responses and more complete responses, besides that, respondents who don't understand the terms were able to clarify their concern. Nevertheless to overcome one concern of ensuring that correct respondents are sampled, the present study used a systematic random sampling technique. According to Tesco's website it was approximated that on average 5000 visitors frequent the hypermarket daily. Based on this, it was estimated N=5000 and we need a sample size of n=385, thus the interval size, k, = N/n = 5000/385 which equals to approximately 13. Therefore the researcher randomly chose a customer who exited the hypermarket and approached the 13^{th} person to administer the questionnaire. Respondents were required to complete a questionnaire that contained measures of the constructs and concern and confidentiality was assured. In addition, the following factors were also considered by the surveyor whilst selecting samples for the study:

1. Respondents are adequately proficient in the English language to be able to answer the questions.
2. Respondents had purchased something from the hypermarket or supermarket on that particular day.
3. The respondents were comfortable and had time to complete the questionnaire at their own pace.

To ensure the questionnaire's reliability and validity, the questionnaire was pre-tested on 30 respondents who had just completed their shopping from two hypermarkets in Penang, TESCO Extra Sungai Dua and GIANT Bayan Baru. The researcher stood with the respondents while they completed the questionnaire to identify difficulties in wording,

to answer respondent's questions and to basically check on the ease of completing the questionnaire. The respondents took approximately 20 to 30 minutes to complete the questionnaire. From the feedback obtained from the respondents, the researcher made the amendments to the questionnaire and used the final version for distribution.

3.2.2 Data Collection Procedure

There are two hypermarkets (TESCO and GIANT) and five supermarkets (JUSCO, MYDIN, GAMA, SUNSHINE and COLD STORAGE) located on Penang island. The researcher identified both the hypermarkets (TESCO and GIANT) and all five of the supermarkets (AEON, MYDIN, GAMA, SUNSHINE and COLD STORAGE) in Penang as the sampling frame to collect data. The researcher's reason to choose hypermarkets and supermarkets was based on the fact that these hypermarkets and supermarkets had managed to be big crowd pullers on weekdays and weekends especially when these establishments are part of big and popular shopping malls. Consumers moreover find the convenience of shopping at these outlets as most of these outlets offer a good range of products from fresh produce to organic produce to electronics, houseware, merchandise products and brand choices under one roof. The green intention and behavior of the individual and family shopping at these hypermarkets and supermarkets was the primary unit of analysis.

The researcher identified 12 outlets in Penang: TESCO (three), GIANT (two), SUNSHINE (two), MYDIN (one), AEON (one), GAMA (one), COLD STORAGE (two) (address are attached as Appendix G) and went to all 12 of the outlets to distribute the

questionnaires. The researcher used research assistants (surveyors) to distribute the questionnaire. The questionnaires were distributed to respondents on all seven days of the week from Monday to Sunday from 5pm to 9pm. The researcher chose the timing from 5pm to 9pm after consulting a store manager from AEON who disclosed that sales were at the highest during these hours. Over the week (Monday to Sunday) five questionnaires were distributed at each outlet a day, thus a total of 35 questionnaires were distributed at an outlet. As mentioned earlier, the researcher and research assistants randomly picked a consumer who exited the outlet and approached the 13^{th} person to administer the questionnaire and thereafter the next 13^{th} person to distribute the following questionnaire.

The researcher explained to the participants of the purpose of the survey and if the participant agreed to answer the questions, the respondents were assured of their anonymity. Participations were entirely voluntary, data and responses did not contain any tags or information that would breach confidentiality. The respondents took approximately 20 to 30 minutes to complete the questionnaire. The researcher and the surveyors took one week to collect data from each outlet. Data collection took approximately three months from all the 12 outlets.

3.3 Operationalization of Variables

This study's framework comprises of six independent variables, a mediator, a moderator and a dependent variable. The independent variables are moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control. The mediator for this study is intention

to green consumerism, the moderator is green advertisement and the dependent variable, green consumerism behavior. In accordance with the theoretical framework, relevant measurements for each of the operational variables were identified in the following sections.

3.3.1 Dependent Variable

Green consumerism behavior was conceptualized into three dimensions in this study: first as the purchasing behavior; second as the conservation behavior; and thirdly as the recycling behavior. The measurement of the dependent variable was adopted from Gilg, Barr and Ford (2005) and Lee (2009). The measurements developed to define behavior of green consumerism were based on the selection from specific advice provided in the study by Gilg, Barr and Ford (2005) in Devon, UK. It was based on the advice of the authorities of the Devon County Council which focused green consumption as the following activities: purchasing products such as detergents that have a reduced environmental impact; avoiding products with aerosols; purchasing recycled paper products (such as toilet tissue and writing paper); buying organic produce; buying locally produced foods; purchasing from a local store; buying fairly traded goods; looking for products using less packaging; and, using one's own bag, rather than a plastic carrier provided by a shop. To further supplement Gilg, Barr and Ford (2005) measurement on the dependent variable, Lee (2009) based the idea of green purchasing behavior as the consumption of products that are benevolent/ beneficial to the environment; recyclable/ conservable; or sensitive/responsive to ecological concerns which was based from the

work of Mostafa (2007). Table 3.1 shows the questions adapted for this study for the dependent variable.

Table 3.1
Green Consumerism Behavior Items

No.	Items	Source
	Purchase behavior	
1.	I often buy organic products	Lee (2009)
2.	I often buy products that are labeled as environmentally-safe	
3.	I often buy products that are against animal testing	
4.	I often buy products that contain no or fewer chemical ingredients	
5.	When I consider buying a product, I will look for a certified environmentally-safe or organic stamp	
6.	I often buy products that support fair community trades	
7.	I often buy products that use recycled/recyclable packaging	
	Conservation behavior	
8.	I turn off tap when soaping up	Gilg, Barr and Ford (2005)
9.	I reduce the number of baths/showers	
10.	I reduce toilet flushes	
11.	I turn off tap when brushing my teeth	
12.	I turn off tap when soaping dishes	
13.	I reduce hot water temperature	
14.	I wait until there's a full load of washing	
15.	I switch off lights in unused rooms	
	Recycle behavior	
16.	I recycle glass	Gilg, Barr and Ford (2005)
17.	I recycle newspaper	
18.	I recycle cans, plastic bottles	
19.	I donate furniture to charity	
20.	I donate clothes to charity	

3.3.2 Independent Variables

There are six independent variables in this study and the discussions of each of the variables are as follows.

3.3.2.1 Moral Norm

Moral norm was conceptualized in this study as the personal values of the respondents to sustain the environment. The measurement of this variable was adapted from Tonglet *et al.* (2004) and von Borgstede and Anderson (2010). The questions on moral norm by Tonglet *et al.* (2004) were based on previous literatures on the Theory of Planned Behavior and information obtained from the elicitation interviews conducted by the authors on residents from Brixworth in UK. Further to that, von Borgstede and Anderson (2010) developed their questions based on the role of personal norms as personal moral norms in environmental behavior. The questions that were used to measure moral norm in this study are shown in Table 3.2.

Table 3.2
Moral Norm Items

No.	Items	Source
1.	I feel I should not waste anything if it could be used again	Tonglet, Phillips and Read (2004)
2.	It would be wrong of me not to recycle my household waste	
3.	I would feel guilty if I did not recycle my household waste	
4.	Not recycling goes against my principles	
5.	Everybody should share the responsibility to recycle household waste	
6.	I am concerned with maintaining a good place to live	
7.	I have a strong interest in the health and well being in the community in which I live	
8.	I believe I have a personal responsibility to recycle my waste	von Borgstede and Anderson (2010)
9.	I feel a personal obligation to contribute to environmentally friendly waste separation	
10.	I would react negatively if I discovered that waste could have been recycled had been disposed of in the wrong place	
11.	I feel bad if I don't recycle my waste	

3.3.2.2 Environmental Concern

Environmental concern was conceptualized in this study as the degree of concern over the environment the respondents were living in. The items to measure this independent variable was adapted from Bamberg (2003) who constructed the eight items developed by Preisendörfer (as cited in Bamberg, 2003, p. 25) who conceptualized environmental concern as a unidimensional general attitude. The scale had the additional advantage that it has been used to measure the environmental concern of representative German population samples. The items in this independent variable are presented in Table 3.3.

Table 3.3
Environmental Concern Items

No.	Items	Source
1.	The major part of the population does not act in an environmentally conscious way	Bamberg (2003)
2.	There are limits to economic growth which our industrialized world has crossed or will reach very soon	
3.	Environmental protection measures should be carried out even if this reduces the number of jobs in the economy	
4.	It worries me when thinking about the environmental conditions our children and grandchildren have to live under	
5.	When I read newspaper articles about environmental problem or view such TV-reports, I am annoyed and angry	
6.	If we continue as before, we are approaching an environmental disaster	
7.	It is still true that politicians do far too little for environmental protection	
8.	For the benefit of the environment, we should be prepared to restrict our present style of living	

3.3.2.3 Perceived Knowledge

Perceived knowledge was conceptualized in this study as the respondents' perceived knowledge about the environment such as the problems, the issues, the solutions on how the environment can be saved from destruction. This variable was

adapted from Mostafa (2006) who derived the measures from a scale developed by Ellen, Weiner and Cobb-Walgren. (as cited by Mostafa, 2006, p.106) and are presented in Table 3.4.

Table 3.4
Perceived Knowledge Items

No.	Items	Source
1.	I know that I buy products and packages that are environmentally safe	Mostafa (2006)
2.	I know more about recycling than the average person	
3.	I know how to select products and packages that reduce the amount of waste ending up in landfills	
4.	I understand the environmental phrases and symbols on product packages	
5.	I am very knowledgeable about environmental issues	

3.3.2.4 Perceived Environmental Responsibility

Perceived environmental responsibility was conceptualized in this study as how much the respondents feel they have to be responsible to the environment they are living in. The measurement of this variable was adapted from Lee (2009) who derived the questions from literature and the items for this independent variable are presented in Table 3.5.

Table 3.5
Perceived Environmental Responsibility Items

No.	Items	Source
1.	I should be responsible protecting our environment	Lee (2009)
2.	Environmental protection is the responsibility of the Malaysian government, not me (R)	
3.	Environmental protection is the responsibility of the environmental organization, not me (R)	
4.	Environmental protection starts with me	
5.	I have taken responsibility for environmental protection since I was young	
6.	I have much responsibility to protect the environment in Malaysia	
7.	I am willing to take up responsibility to protect the environment in Malaysia	

3.3.2.5 Subjective Norm

Subjective norm was conceptualized in this study as how the respondents' actions on being a green consumer depended on the influence and views of their family members, friends and peers. The measurement of this variable was adapted from Lee (2009), Tonglet *et al.* (2004) and Arvola *et al*. (2008). The questions adapted from Tonglet *et al.* (2004) used more specific measures based on the information from elicitation from past literatures (from Beck & Ajzen, 1991; Tonglet, 2000, 2004). Arvola *et al.* (2008) derived the questions based on the Theory of Planned Behavior, whereas Lee (2009) derived the questions from literature and the items for this independent are presented in Table 3.6.

Table 3.6
Subjective Norm Items

No.	Items	Source
1.	I learnt about environmental issues i.e. recycling from my friends	Lee (2009)
2.	I often discuss environmental issues i.e. recycling with my friends	
3.	My friends often recommend environmentally friendly products to me	
4.	I often go shopping for green products with my friend	
5.	I often share my green product experiences and information with my friends	
6.	Most people think I should recycle	Tonglet, Phillips and Read (2004) Arvola *et al.* (2008)
7.	Most people would approve of me recycling	
8.	Most people who are important to me would think that I should recycle	
9.	Most people I value, would recycle	

3.3.2.6 Perceived Behavioral Control

Perceived behavioral control was conceptualized in this study as respondents' perception on how easy or difficult it is for them to conserve the environment. The questions were adapted from Tonglet *et al.* (2004) who derived the items from the literature (from Tonglet, 2002, 2000; Beck & Ajzen, 1991). The authors (Tonglet *et al.*,

2004) used more specific measures based on the information from elicitation from past literatures. The items in this independent variable are presented in Table 3.7.

Table 3.7
Perceived Behavioral Control Items

No.	Items	Source
1.	I have plenty of opportunities to recycle my household waste	Tonglet, Phillips and Read (2004)
2.	Recycling my household waste is inconvenient (R)	
3.	Recycling is easy	
4.	The local council provides satisfactory resources for recycling	
5.	I know what items of household waste can be recycled	
6.	I know where to take my household waste for recycling	
7.	I know how to recycle my household waste	
8.	I would be able to buy green products	
9.	I have the resources to buy green products	
10.	Whether or not I will purchase eco-friendly products for personal use in the coming month is entirely up to me.	
11.	I have complete control over the number of eco-friendly products that I will buy for personal use in the coming month	

3.3.3 Mediator Variable

Intention to green consumerism was conceptualized in this study as the intention to be a green consumer in the near future. The measurement of this variable was adapted from Barr *et al*. (2001) and Jin and Kang (2011) who based their measurement on intention from Mathur (as cited in Jin and Kang, 2011, p. 191). The items of this mediating variable are presented in Table 3.8.

Table 3.8
Intention to Green Consumerism Items

No.	Items	Source
1.	I will buy few disposable products in my next shopping trip	Barr, Gilg and Ford (2001)
2.	I will reuse jars and bottles whenever possible	
3.	I will reuse paper, rather than buying it new	
4.	I will take old plastic bags shopping, rather than using new ones, or take a durable bag on my next shopping trip	
5.	I will look for wrapping that can be easily reused or recycled	
6.	I will reduce the amount of produce that's bought which has lots of packaging	
7.	I will buy certain produce without packaging, like fruits and vegetables	
8.	I will reuse old containers, like ice-cream tubs	
9.	I will wash and reuse certain items before disposing of them, like dish-cloths	
10.	I would absolutely plan to buy green products on my next shopping trip	Jin and Kang (2011)
11.	I will repair items before deciding they have to be thrown away	
12.	I would definitely buy green products on my next shopping trip	
13.	I would absolutely consider buying green products on my next shopping trip	
14.	I would definitely expect to buy green products on my next shopping trip	

3.3.4 Moderator Variable

Green marketing tool was conceptualized in this study as a green advertisement that was seen and read by people that had influenced their intention and translated that intention to their behavior. The measurements for this variable were adapted from Rahbar and Abdul Wahid (2011) and Abd Rahim *et al.* (2012) and are presented in Table 3.9.

Table 3.9
Green Advertisement Items

No.	Items	Source
1.	Environmental advertisement enhance my knowledge about green products	Rahbar and Abdul Wahid (2011)
2.	I enjoy watching broadcast environmental advertisement	
3.	Environmental advertisement guide customers to making an informed purchasing decision	
4.	The Government and NGOs are doing a good job in promoting the green living concept in Malaysia	Abd Rahim *et al.* (2012)
5.	Green advertising/campaigns are effective in educating and encouraging the public to go green	
6.	Green advertising/campaigns conducted by the Government are interesting and effective	
7.	I will adopt to a green lifestyle when exposed to persuasive green messages	
8.	Green advertising leads people to be more socially responsible	
9.	Green advertising/campaigns are interesting to see	

3.3.5 Measures and Instrumentation

All constructs included in this study was measured using established measures drawn from previous studies and the constructs were measured by various items using a 5-point Likert reflective measure scale (1 = 'Strongly Disagree' to 5 = 'Strongly Agree'). The collected data were cleaned, coded, tabulated, grouped and organized according to the requirement of the study and then entered into SPSS (Statistical package for social sciences) for analysis. Data was analyzed using SPSS 18.0 for Windows.

3.4 Data Analysis

Analysis of the response was conducted using SPSS statistical software version 18.0. The statistical techniques that were employed in the analyses included descriptive statistics to describe the characteristics of respondents and reliability analysis to test the goodness of measures, correlation analysis to describe the relationship between variables

and finally a hierarchical regression analysis to test the impact of the independent variables on the dependent variable as well as the influence of the mediating factor and the moderating factor on the dependent variable.

3.4.1 Goodness of Measure

In nearly all cases, measurement items should undergo the process of data testing to establish the goodness of data as it was imperative that all measurement items listed in the questionnaire accurately measure the variables used in the study (Cavana *et al.*, 2001). The authors further said that the use of good instruments has proven to ensure accurate and reliable results which will subsequently enhance the scientific quality of a research. Therefore to ascertain the accuracy of measurement in this study, all items had undergone the process of data testing to establish the goodness of data by applying the reliability analysis on them.

3.4.1.1 Reliability Analysis

Reliability analysis was used to test the internal consistency of all measurement items. Reliability was the degree to which a study's variable measures what it intends to measure or project its true value, therefore if the same measure was used repeatedly, more reliable measures will show greater consistency than less reliable measures (Hair, Anderson, Tatham & Black, 1998). The Cronbach alpha coefficient will assess the reliability of each variable. In general, a Cronbach alpha value less than .60 ($\alpha < .60$) is considered questionable or poor, alpha value of .70 ($\alpha > .70$) is acceptable and any alpha values above .80 are considered as good. Thus, the higher the alpha value or the closer

the reliability coefficient to 1.0, the higher the reliability of the measurement items will be (Sekaran, 2000).

3.4.1.1.1 Pilot Study

A pilot study was conducted on 30 respondents who were shopping in TESCO Extra and GIANT hypermarket from Penang and the result of the reliability analysis using Cronbach's alpha value as a determinant to accept the reliability of the variables is shown in Table 3.10. The statistical output using SPSS is attached as Appendix B.

Table 3.10
Cronbach Alpha for Pilot Study

Variables	Cronbach alpha
Moral norm	.929
Environmental concern	.799
Perceived knowledge	.849
Perceived environmental responsibility	.782
Subjective norm	.825
Perceived control behavior	.662
Intention to green consumerism	.886
Green advertisement	.769
Green consumerism behavior	.900

As seen in Table 3.10, the reliability scales of all the values except for one, perceived control behavior reached the usual accepted value of 0.7 which indicated that the items were homogenous and measuring the same constant (Hair *et al.,* 1998). Moss, Prosser and Costello (1998) suggested that an alpha score of 0.6 was generally acceptable however, Hair *et al.* (1998) posit that Cronbach's alpha values from 0.6 to 0.7 were deemed the lower limit of acceptability, although this criterion is not as stringent as the most widely recognized 0.7 threshold (Nunnally, 1978). One of the possible explanations for the lower alpha value of this variable could be the fact that it consisted of a smaller

number of items (Moss *et al.*, 1998). Furthermore, as Moss *et al.*, suggested, a low alpha value does not necessarily mean that the scale will not work well as a screening tool, where the aim was to indicate the perceived control behavior and not actual behavior control. The following are the explanation of each of the variable in this present study.

3.4.1.1.1.1 Moral Norm

In total 11 items were used to measure this independent variable, moral norm. A Cronbach alpha reliability test for the pilot test for the independent variable to moral norm was at $\alpha = .929$ and thus all the 11 items were accepted for further analysis.

3.4.1.1.1.2 Environmental Concern

In total eight items were used to measure this independent variable, environmental concern. A Cronbach alpha reliability test for the pilot test for the independent variable environmental concern was at $\alpha = .799$ and thus all the eight items were accepted for further analysis.

3.4.1.1.1.3 Perceived Knowledge

In total five items were used to measure this independent variable, perceived knowledge. A Cronbach alpha reliability test for the pilot test for the independent variable perceived knowledge was at $\alpha = .849$ and thus all the five items were accepted for further analysis.

3.4.1.1.1.4 Perceived Environmental Responsibility

In total seven items were used to measure this independent variable, perceived environmental responsibility. A Cronbach alpha reliability test for the pilot test for the independent variable perceived environmental responsibility was at $\alpha = .782$ and thus all the seven items were accepted for further analysis.

3.4.1.1.1.5 Subjective Norm

In total nine items were used to measure this independent variable, subjective norm. A Cronbach alpha reliability test for the pilot test for the independent variable subjective norm was at $\alpha = .825$ and thus all the nine items were accepted for further analysis.

3.4.1.1.1.6 Perceived Control Behavior

In total 11 items were used to measure this independent variable, perceived control behavior. A very low Cronbach alpha reliability test for the pilot test for the independent variable environmental concern was obtained, after dropping item number four (The local council provides satisfactory resources for recycling) the Cronbach alpha value was at $\alpha = .662$ and thus the rest 10 items were accepted for further analysis.

3.4.1.1.1.7 Intention to Green Consumerism

In total 14 items were used to measure this mediating variable, intention to green consumerism. A Cronbach alpha reliability test for the pilot test for the mediating

variable intention to green consumerism was at α = .886 and thus all the 14 items were accepted for further analysis.

3.4.1.1.1.8 Green Advertisement

In total nine items were used to measure this moderating variable, green marketing tool. A Cronbach alpha reliability test for the pilot test for the moderating variable green marketing tool was at α = .769 and thus all the nine items were accepted for further analysis.

3.4.1.1.1.9 Green Consumerism Behavior

In total 20 items were used to measure the dependent variable, behavior to green consumerism and two items were dropped, item number six (I often buy products that support fair community trades) and item number 19 (I donate furniture to charity). A Cronbach alpha reliability test showed a stronger value, α = .900, after dropping these two items. Thus 18 items were adopted for green consumerism behavior.

As the reliability analysis in the pilot study presented a Cronbach alpha value of greater than .60, thus all nine variables were adopted in the questionnaire and data collection was thereon proceeded to be carried out.

3.4.1.2 Factor Analysis

A measure is valid when it actually measures what it is intended to measure (Nunnally, 1978) therefore the measures used in this study is necessary to be valid too.

The measures become invalid due to the presence of non random error which prevents the measures from representing what they are intended for (Carmines & Zeller, 1979). Instead these measures may represent something other than the intended concept or even a different concept entirely. The two most common types of validity used in many research are content validity and construct validity. Content validity is described as appropriateness of measure (Churchill, 1979), and as mainly subjective and based essentially on judgment (Green, Tull & Albaum, 1994). Construct validity can be assessed using two approaches (Bohrnstedt, 1970) that is the discriminant validity which assesses the adequacy with which a measure is distinct from related measures. Discriminant validity is achieved when items do not correlate highly with items that should theoretically be different (Gerbing & Anderson, 1988).

The second approach is the convergent validity which refers to the extent that different items within a scale measure the same construct. Convergent validity is achieved when two instruments that are valid measures of a given construct correlate highly with each other (Nunnally & Bernstein, 1994). Construct validity in this study was determined by using exploratory factor analysis (EFA). Exploratory factor analysis could be described as orderly simplification of interrelated measures. EFA, traditionally, has been used to explore the possible underlying factor structure of a set of observed variables without imposing a preconceived structure on the outcome (Child, 1990). By performing EFA, the underlying factor structure is identified, and composite scores from the original variables were created. All 91 variables were submitted to factor analysis. Only the factor loading scores with an acceptable value are considered significant in

describing the factor and Hair *et al*. (1995) suggested that factor loadings greater than 0.30 are considered to meet the minimal level, loadings of 0.40 are considered more important and if the loadings are 0.50 or greater, they are considered practically significant. Comrey and Lee (1992) suggest that loadings in excess of 0.71 are considered excellent, 0.63 very good, 0.55 good, 0.45 fair and 0.32 poor, meanwhile Tabachnick and Fidell (2001) state that for the choice of the cutoff for loading size is the preference of the researcher. Based on this guideline, a cutoff point of 0.50 and greater was considered as significant factor loadings for this study. The results of the EFA analysis are discussed in Chapter Four.

3.4.1.3 Descriptive Statistic

The next step after the reliability analysis was to compute the items into a collective sum. Descriptive statistics such as frequency and percentage were used to get a feel for the data and to fully understand the profile of the respondents. The measurement of the items for these variables was by using five-point Likert scales. There were 387 valid cases being analyzed for all the nine variables.

3.4.1.4 Correlational Analysis

Pearson correlation analysis was used to describe the strength and direction of the bivariate relationships of all the variables. In this study, the Pearson correlation coefficient was performed to understand the relationship between four main variables: independent, mediator, moderator and dependent. The values of the correlation coefficient (r) imply the strength of the relationship between the variables under

investigation. A positive correlation indicates that as one variable increases, the other variable will also increase and subsequently, a negative correlation indicates that as one variable increases, the other decreases (Hair *et al.,* 1998; Sekaran, 2003). All the nine constructs of this study were tested for correlation analysis. The underlying reason for conducting this particular analysis was to verify whether multicollinearity among variables existed as well as to investigate the bivariate relationship between the variables (Hair *et al*., 1998; Sekaran, 2003). Multicollinearity normally represents the degree to which a variable can be explained by other variables in the analysis. According to Hair *et al.,* (1998) it was important to verify the degree of multicollinearity before running a regression analysis as it may complicate the interpretation of the variation as it was difficult to determine the effect of any single variable. Furthermore, as multicollinearity increases, it may complicate the interpretation of the variation as it was more difficult to ensure the effect of any single variable in the study (Hair *et al.,*1998) hence multicollinearity existed whenever the correlation coefficient (r) exceeds .80 (Berry & Feldman, 1985).

The correlation analysis used in this study was subjected to one-tailed test for statistical significance ($p<0.05$). To measure the strength of the relationship i.e. correlation coefficient (r) between the variables, Rowntree (1981) guideline was used which is as follows: 0 to 0.2 – very weak, negative; 0.2 to 0.4 - weak, low; 0.4 to 0.7 – moderate; 0.7 to 0.9 – strong, high marked; and 0.9 to 1.0 – very strong, very high.

3.4.1.5 Multiple Regression

As correlation analysis does not provide the answer as to how much the variance in a dependent variable can be explained when several independent variables are theorized to concurrently influence it, a multiple regression analysis was normally used to serve that purpose. Furthermore, multiple regression analysis appears to be the most extensively used multivariate technique to answer two main research problems- to predict and/or explain (Hair *et al.,* 1998).

Subsequently, as compared to the standard multiple regression, hierarchical multiple regression analysis was considered as a more suitable method for determining whether a quantitative variable has a mediating as well as moderating effect on the relationship between two other quantitative variables (Baron & Kenny, 1986; Mathieu & Taylor, 2006).

3.4.1.6 Hierarchical Multiple Regressions

In this study, hierarchical type of multiple regression analyses were used to test the hypothesized relationships between the four main variables involved in the study: independent variables, mediating variable (intention to green consumerism), moderating variable (green advertisement) and dependent variable (green consumerism behavior: green purchase behavior, green conservation behavior, recycle behavior) as it was found to be more applicable to study the effect of the mediating variable between the independent variables and dependent variable and also to study the effect of moderating

variable between the mediating variable and the dependent variable by using hierarchical multiple regression as compared to standard multiple regression.

3.4.1.6.1 Mediating Variable

Mediating variable or intervening variable is a variable which functions to mediate any correlation between independent variable and dependent variable (Baron & Kenny, 1986). To test the influence of the mediating variable, the path analysis method was used. Path analysis is the extension of regression analysis to measure inter-variable causality correlation settled by the theory. In this study, the mediating variable (intention to green consumerism) is tested between the independent variables and the dependent variable. Baron and Kenny (1986) laid out several requirements that must be met to determine the mediating relationship. Figure 3.1 represents the mediating relationship of this study.

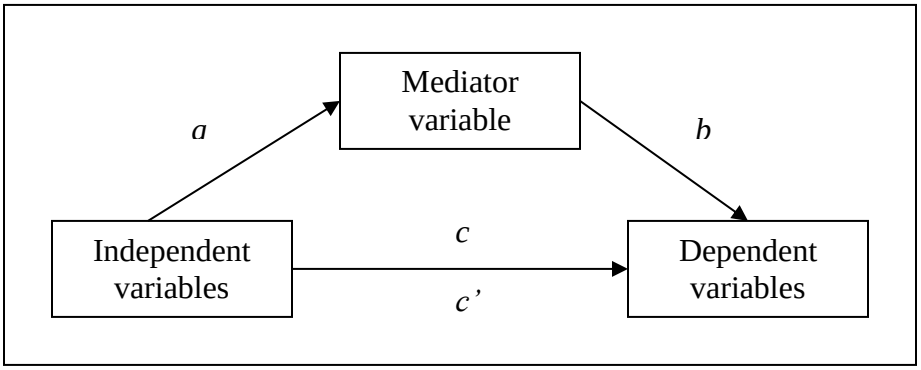

Figure 3.1. Mediator Relationship. Adapted from "The Moderator-Mediator Variable distinction in social psychology research: Conceptual, strategic, and statistical considerations," by R. M. Baron and D. A. Kenny, 1986, *Journal of Personality and Social Psychology, 51* (6).

From the diagram above the predominant relationship that is explained is labeled 'c' which is the path from the independent to the dependent variable. The mediating path

has two parts, '*a*' path connecting the independent variable to the mediator and '*b*' the path connecting the mediator to the dependent variable. Baron and Kenny (1986) argued that for the study to claim a mediating relationship, it first needs to show that there is a significant relationship between the independent variable and the mediator. The next step is to show that there is a significant relationship between the mediator and the dependent variable and then to show there is a significant relationship between the independent and dependent variable. Basically, the procedures are: (1) the independent variables (X) should be significantly related to the dependent variable (Y), *path c*, (2) the independent variables (X) should be significantly associated with the mediating variable (M), *path a*, (3) the mediator (M) should be significantly related to the dependent variable (Y), *path b*, and (4) to establish whether the mediator (M) completely mediates the independent (X)–dependent (Y) relationship, the effect of the independent variables on the dependent variable controlling for the mediating variable should be zero (full mediation) or become significantly smaller (partial mediation). The effects in both step 3 and step 4 are estimated in the same regression equation. Further to that, researchers often test whether there is complete or partial mediation by testing whether the *c* coefficient is statistically significant, which is a test of whether the association between the independent and dependent variable is completely accounted for by the mediator (James, Mulaik & Brett, 2006). If the *c* coefficient is statistically significant and there is significant mediation, then there is evidence for partial mediation but however Judd and Kenny (1981) commented that behaviors have a variety of causes, it is often unrealistic to expect that a single mediator would be explained completely by an independent variable to dependent variable relation. Hence in this present study, a hierarchical regression analysis using the

stepwise method was used to determine the independent variables that have an effect on the intention and green consumerism behavior.

3.4.1.6.2 Moderating Variable

A moderator variable is regarded as a variable that can systematically modify either the form and/or strength of the relationship between predictor and criterion variables (Sharma, Durand & Gur-Arie, 1981). In this study, the moderating influences of green advertisement between intention to green consumerism (predictor) and green consumerism behavior (criterion) was tested. As a consequence, the power of green advertisement onto each hypothetical relationship as either pure or quasi moderator could be studied (Baron & Kenny, 1986). Green advertisement is classified as a quasi moderator if the direct effect and the interaction terms were both significant. On the contrary, if the direct effect is not significant but the interaction term is significant, green advertisement will then be treated as a pure moderator of the relationship.

Subsequently, in conducting the regression analyses, two 3-steps hierarchical regression analyses were applied to determine the differences with respect to the main effects, moderating (direct) effects and the interaction effects. Sets of variables were entered consecutively, where variables in step 1 consisted of the predictor variable (intention to green consumerism); in step 2, the moderator variable was included in the regression equation (green advertisement) and finally in step 3, the interaction effects between the moderator and predictor variables (the product of the moderator and predictor variables) were introduced accordingly. Ergo, data were used on this occasion

to illustrate an analysis designed to test that the relationship between behavior of green consumerism pattern and intention to green consumerism was moderated by green advertisement. The interaction can be tested by creating an interaction term (*intention to green consumerism*green advertisement*) and entering it after entry of intention to green consumerism and green advertisement. Then, if the addition of the new *intention to green consumerism*green advertisement* variable resulted in a significant increase in R^2, it can be claimed that a moderating effect of green advertisement on the relationship between intention to green consumerism and behavior to green consumerism has been confirmed. However, generating a new variable by multiplying together two existing variable risks creating a multicollinearity problem but this problem can be avoided by converting intention to green consumerism and green advertisement to *z* scores, that have mean zero ($M = 0$) and standard deviation one ($\sigma = 1$). This process is called standardizing and the result is that the effect of the transformed variable, *zintention* to green consumerism on green consumerism behavior, for example would be tested in relation to the influence of green advertisement which be considered more reasonable. This procedure has the additional advantage of reducing the problem of multicollinearity by reducing the size of any high correlation of the predictor or the moderator variable with the new interaction variable. The two standardized variables (*zintention* and *zadvertisement*) are then multiplied together to create the interaction variable (*zintention*zadvertisement*).

3.5 Chapter Summary

This chapter provided justification for the quantitative method approach used in this study. The sampling frame and data collection strategy was also briefed here. A detailed explanation was given for the operationalization of each of the variables, the measurements and the instrumentation for each variable. An in depth rationalization was also given for the statistical analysis to be undertaken in this research. The chapter ended with the step by step instruction on how to analyze the moderating variable.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.0 Introduction

The chapter presents the results of data analysis performed on descriptive statistics to understand the profile of the respondents as well as the characteristics of the variables. Next, the chapter presents the inferential statistics to answer the main objectives of the present study and the statistical analysis done were reliability analysis with Cronbach alpha, exploratory factor analysis, Pearson correlation and regression analysis. Discussions in this chapter were divided into three main sections (1) the overview of data collected comprising of rate of response, preliminary examination of data and demographic profile of respondents; (2) the goodness of measures for the research variables to test their reliability; and (3) the results of the hypothesized model.

4.1 Overview of Data Collected

4.1.1 Response Rate

For data collection purposes, 420 questionnaires were distributed to the general public who visited hypermarkets in Penang. Out of these 420 questionnaires, 387 questionnaires were usable for analysis, yielding a response rate of 92.14 percent. Less than 8% (33 questionnaires) were incomplete and thus were not included in data coding and analysis. A sample of the questionnaire is enclosed in Appendix A**.**

4.1.2 Preliminary Examination of Data

Data was first screened and cleaned before it was analyzed. As per the suggestions by Hair, Money, Samouel and Page (2007) and Tabachnick and Fidell (2001), data was assessed for violation of statistical assumption, such as the accuracy of the data input, missing, observation, and outliers, and distribution issues such as normality. Screening of the data sets was conducted through an examination of basic descriptive statistics i.e. mean, standard deviation, maximum value and minimum value and frequency distributions. Values that were found to be out of range or improperly coded were detected with straight forward checks. In this dataset there were no cases of illegal responses were noted. The statistical output is attached as Appendix C.

4.1.3 Demographic Profile of Respondents

Table 4.1 illustrates the demographic profile of the respondents. From the total of 420 respondents who completed the questionnaire only 387 of it were useable. There were 224 female respondents making up 57.9% and 163 male respondents (42.1%). This situation arose because there were more female shoppers frequenting hypermarkets and supermarkets as compared to male shoppers.

There are three main ethnic groups in peninsular Malaysia which are Malays, Chinese, and Indians. The ethnic profile of the respondents for this research were mainly of Chinese shoppers consisting of 183 respondents (47.3%) followed by Malays shoppers consisting of 102 respondents (26.4%) and Indians, making up to 72 respondents (18.6%). The rest of the respondents were coded as ‘others’ category which made up to 30

respondents (7.8%). This ethnic profile does fall into the general race denomination of Penang residents (population) which is predominantly made up of Chinese (41%) and followed by Malays.

Age was categorized into six groups. Respondents below the age of 20 consisted of 18 respondents (4.7%) followed by 56 respondents who were aged between 20 and 25 (14.5%), 65 respondents were between the ages 26 and 30 (16.8%) and 79 respondents were from the age range of 31 to 35 (20.4%). Those who fell in the category of 36 to 40 consisted of 69 respondents (17.8%) and the almost over a quarter of the respondents fell in the above 40 category (25.8%). The shopper profile falls predominantly in the older age range (above 40 age group) as most of the time household goods are purchased by adults who run the family expenses. For the demographic profile of number of family members in the household, 253 respondents reported to have 4 to 6 family members living together (65.4%) whereas 109 respondents came from small families (28.2%). Only a handful of the respondents, 25 of them, came from a big family which consisted of 7 and above family members living together (6.5%). Out of the 387 respondents, 166 were single (42.9%), 3 were divorced (0.8%) and 6 were widow/widower (1.6%) and the majority, 212 respondents were married consisting of 54.8% of the total.

As for household income, 16.3% of respondents came from a household income of less than RM2000 (63 respondents) whilst the largest number of respondents came from a household income bracket of RM2000 to RM4000 (123 or 31.8%). Those from the category of RM4001 to RM6000 accounted for 25.1% (or 97 respondents), RM6001

to RM8000 (47 or 12.1%), and finally the remaining number of respondents with household income of above RM8000 were at 14.7% (or 57 respondents).

Table 4.1
Demographic Profile of Respondents (n =387)

		Frequency (n)	Percentage
Gender	Male	163	42.1%
	Female	224	57.9%
Race	Malay	102	26.4%
	Chinese	183	47.3%
	Indian	72	18.6%
	Others	30	7.8%
Age	Below 20	18	4.7%
	21 to 25	56	14.5%
	26 to 30	65	16.8%
	31 to 35	79	20.4%
	36 to 40	69	17.8%
	Above 41	100	25.8%
Family members	1 to 3	109	28.2%
	4 to 6	253	65.4%
	7 and above	25	6.5%
Marital status	Single	166	42.9%
	Married	212	54.8%
	Divorced	3	0.8%
	Widow/widower	6	1.6%
Household income	Below RM2000	63	16.3%
	RM2001 to RM4000	123	31.8%
	RM4001 to RM6000	97	25.1%
	RM6000 to RM8000	47	12.1%
	Above RM8001	57	14.7%

Most studies concerning consumer behavior especially the influential characteristics of attitudes and behaviors towards the environment concentrated on adult behaviors (Geller, 1995; Kals, Schumacher & Montada, 1999; Mayer & Frantz, 2004). According to Diamantopoulos, Bohlen and Schlegelmilch (1994), socio-demographic variables are

to a certain extend used to profile consumers for their environmental knowledge and attitudes. They however argued that socio-demographic variables do not support much on behavioral aspects of the environmental consciousness and added that these may be partly accounted for by country-specific factors. For instance, Widegren (1998) in a nationwide study conducted in Sweden found that gender and age had shown no significant influence over behavior but however, education and social class showed a positive relationship to green consumerism behavior. But on the other hand, these findings were opposite to the earlier findings of Webster (1975) and van Liere and Dunlap (1981) who found age and gender to have a positive impact on behavior in a study conducted in two different states in the United States of America. Various scholars also found that females present themselves to have higher concern for the environment as compared to men (Davidson & Freudenburg, 1996; Lee, 2009) and participate more frequently in various types of green behavior (e.g., energy conservation, recycling, or political action). Anyhow, this study did not include a demographic profile of the respondents as one of the factors to be considered in their motivation to be a green consumer.

4.2 Descriptive Statistics for the Green Consumerism Behavior Model

The green consumerism behavior model involved nine factors which included green consumerism behavior, moral norm, environmental concern, perceived behavioral control, perceived knowledge, perceived environmental responsibility, subjective norm, intention to green consumerism and green advertisement. The SPSS output is attached as Appendix C.

4.2.1 Moral Norm

Moral norm was measured using 11 items. Based on Table 4.2 the mean score ranges from 3.55 to 4.19 and the standard deviation score ranges from .67 to .93, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent. The respondents gave a score of more than 4.0 for "I feel I should not waste anything if it could be used again" (*M*=4.19, *SD*=.721), "Everybody should share the responsibility to recycle household waste" (*M*=4.12, *SD*=.746), "I am concerned with maintaining a good place to live" (*M*=4.19, *SD*=.670), and "I have a strong interest in the health and well-being in the community in which I live in" (*M*=4.09, *SD*=.772). The lowest score was given to the item "not recycling goes against my principles" (*M*=3.55, *SD*=.927). The mean scores for the variable Moral Norm are above the average value of 3.0, which shows that the respondents skewed more towards strongly agree and agree options to the statements.

Table 4.2
Descriptive Statistics for Moral Norm

Moral Norm (*n*=387)		**Mean**	**SD**
1.	I feel I should not waste anything if it could be used again	4.19	.721
2.	It would be wrong of me not to recycle my household waste	3.86	.836
3.	I would feel guilty if I did not recycle my household waste	3.67	.923
4.	Not recycling goes against my principles	3.55	.927
5.	Everybody should share the responsibility to recycle household waste	4.12	.746
6.	I am concerned with maintaining a good place to live	4.19	.670
7.	I have a strong interest in the health and well-being in the community in which I live	4.09	.772
8.	I believe I have a personal responsibility to recycle my waste	3.94	.831

Table 4.2 (Continued)

9.	I feel a personal obligation to contribute to environmentally friendly waste separation	3.82	.826
10.	I would react negatively if I discovered that waste could have been recycled had been disposed of in the wrong place	3.59	.899
11.	I feel bad if I don't recycle my waste	3.74	.931

4.2.2 Environmental Concern

Environmental concern was measured with eight items. Referring to Table 4.3, the mean ranges from 3.43 to 4.03 and the standard deviation score ranges from 1.024 to .884, which shows that the mean scores for the variable environmental concern are above the average value of 3.0, which shows that the respondents responses skewed more towards strongly agree and agree options to the statements. The respondents were concerned that "If we continue as before, we are approaching an environmental disaster" (*M*=4.03, *SD*=.884), hence they gave a score of higher than 4.0. The lowest score was given to "When I read newspaper articles about environmental problem or view such TV-reports, I am annoyed and angry" (*M*=3.43, *SD*=1.024).

Table 4.3

Descriptive Statistics for Environmental Concern

Environmental Concern (*n*=387)		**Mean**	**SD**
1.	The major part of the population does not act in an environmentally conscious way	3.71	.802
2.	There are limits to economic growth which our industrialized world has crossed or will reach very soon	3.56	.816
3.	Environmental protection measures should be carried out even if this reduces the number of jobs in the economy	3.51	.834
4.	It worries me when thinking about the environmental conditions our children and grandchildren have to live under	3.99	.847
5.	When I read newspaper articles about environmental problem or view such TV-reports, I am annoyed and angry	3.43	1.024
6.	If we continue as before, we are approaching an environmental disaster	4.03	.884

Table 4.3 (Continued)

7.	It is still true that politicians do far too little for environmental protection	3.93	.940
8.	For the benefit of the environment, we should be prepared to restrict our present style of living	3.87	.803

4.2.3 Perceived Knowledge

Perceived knowledge was measured with five items. Table 4.4 shows that the mean range is from 3.32 to 3.56 and the standard deviation score ranges from .799 to .791, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent. The highest mean which is still below 4.0 showed respondents saying that "I know I buy products and packages that are environmentally safe" (*M*=3.56, *SD*=.791). The lowest mean is for the item "I know more about recycling than the average person" (*M*=3.32, *SD*=.799). The mean scores for the variable perceived knowledge are above the average value of 3.0, which shows that the respondents skewed more towards strongly agree and agree options to the statements.

Table 4.4
Descriptive Statistics for Perceived Knowledge

Perceived Knowledge (*n*=387)		**Mean**	**SD**
1.	I know that I buy products and packages that are environmentally safe	3.56	.791
2.	I know more about recycling than the average person	3.32	.799
3.	I know how to select products and packages that reduce the amount of waste ending up in landfills	3.45	.830
4.	I understand the environmental phrases and symbols on product packages	3.50	.812
5.	I am very knowledgeable about environmental issues	3.33	.848

4.2.4 Perceived Environmental Responsibility

Seven items were used to measure perceived environmental responsibility. Table 4.5 shows that the mean range is from 3.28 to 3.93 and the standard deviation score ranges from .923 to .745, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent. The highest mean which is still below 4.0 showed respondents saying that "I should be responsible protecting my environment" (*M*=3.93, *SD*=.745). The lowest mean is for the item "I have taken responsibility for environmental protection since I was young" (*M*=3.28, *SD*=.923). The mean scores for the variable perceived environmental responsibility are above the average value of 3.0, which shows that the respondents skewed more towards strongly agree and agree options to the statements.

Table 4.5
Descriptive Statistics for Perceived Environmental Responsibility

Perceived Environmental Responsibility (*n*=387)		**Mean**	**SD**
1.	I should be responsible protecting our environment	3.93	.745
2.	Environmental protection is the responsibility of the Malaysian government, not me (R)	3.35	1.145
3.	Environmental protection is the responsibility of the environmental organization, not me (R)	3.44	1.112
4.	Environmental protection starts with me	3.88	.834
5.	I have taken responsibility for environmental protection since I was young	3.28	.923
6.	I have much responsibility to protect the environment in Malaysia	3.68	.788
7.	I am willing to take up responsibility to protect the environment in Malaysia	3.72	.794

4.2.5 Subjective Norm

Nine items were used to measure subjective norm. Table 4.6 shows that the mean range is from 2.95 to 3.55 and the standard deviation score ranges from .971 to .860, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent.. The highest mean which is still below 4.0 showed respondents saying that "Most people would approve of me recycling" (*M*=3.55, *SD*=.860). The lowest mean is for the item "I often go shopping for green products with my friend" (*M*=2.95, *SD*=.971).

Table 4.6
Descriptive Statistics for Subjective Norm

Subjective Norm (*n*=387)		Mean	SD
1.	I learnt about environmental issues i.e. recycling from my friends	3.17	.918
2.	I often discuss environmental issues i.e. recycling with my friends	3.06	.949
3.	My friends often recommend environmentally friendly products to me	3.00	.963
4.	I often go shopping for green products with my friend	2.95	.971
5.	I often share my green product experiences and information with my friends	3.06	.943
6.	Most people think I should recycle	3.25	.965
7.	Most people would approve of me recycling	3.55	.860
8.	Most people who are important to me would think that I should recycle	3.35	.911
9.	Most people I value, would recycle	3.41	.854

4.2.6 Perceived Behavioral Control

Perceived behavioral concern was measured with 10 items. Table 4.7 shows that the mean range is from 2.98 to 3.87 and the standard deviation score ranges from 1.109 to .762. The mean scores for the variable perceived behavioral control are just about the average value of 3.0, which shows that the respondents responses were centered around

neither agree nor disagree options to the statements. The highest mean which is still below 4.0 showed respondents saying that "I know what items of household waste can be recycled" (*M*=3.87, *SD*=.762). The lowest mean is for the item "Recycling my household waste is inconvenient" (*M*=2.98, *SD*=1.109).

Table 4.7
Descriptive Statistics for Perceived Behavioral Control

Perceived Behavioral Control (n=387)		**Mean**	**SD**
1.	I have plenty of opportunities to recycle my household waste	3.66	.844
2.	Recycling my household waste is inconvenient (R)	2.98	1.109
3.	Recycling is easy	3.70	.889
4.	I know what items of household waste can be recycled	3.87	.762
5.	I know where to take my household waste for recycling	3.72	.914
6.	I know how to recycle my household waste	3.71	.839
7.	I would be able to buy green products	3.75	.777
8.	I have the resources to buy green products.	3.55	.875
9.	Whether or not I will purchase eco-friendly products for personal use in the coming month is entirely up to me.	3.63	.864
10.	I have complete control over the number of eco-friendly products that I will buy for personal use in the coming month.	3.63	.894

4.2.7 Intention to Green Consumerism

Intention to green consumerism was measured with 14. Table 4.8 shows that the mean range is from 3.45 to 3.94 and the standard deviation score ranges from .839 to .830, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent.. The highest mean which is still below 4.0 showed respondents saying that "I would reuse jars and bottles whenever possible" (*M*=3.94, *SD*=.733). The lowest mean is for the item "I will buy few disposable products in my next shopping trip" (*M*=3.345, *SD*=.839).

Table 4.8

Descriptive Statistics for Intention to Green Consumerism

	Intention to Green Consumerism (*n*=387)	Mean	SD
1.	I will buy few disposable products in my next shopping trip	3.45	.839
2.	I will reuse jars and bottles whenever possible	3.94	.733
3.	I will reuse paper, rather than buying it new	3.87	.778
4.	I will take old plastic bags shopping, rather than using new ones, or take a durable bag on my next shopping trip	3.91	.814
5.	I will look for wrapping that can be easily reused or recycled	3.69	.819
6.	I will reduce the amount of produce that's bought which has lots of packaging	3.60	.796
7.	I will buy certain produce without packaging, like fruits and vegetables	3.66	.845
8.	I will reuse old containers, like ice-cream tubs	3.89	.819
9.	I will wash and reuse certain items before disposing of them, like dish-cloths	3.91	.830
10.	I would absolutely plan to buy green products on my next shopping trip	3.76	.819
11.	I will repair items before deciding they have to be thrown away	3.56	.801
12.	I would definitely buy green products on my next shopping trip	3.73	.798
13.	I would absolutely consider buying green products on my next shopping trip	3.54	.855
14.	I would definitely expect to buy green products on my next shopping trip	3.62	.860

4.2.8 Green Advertisement

Nine items were used to measure green advertisement. Table 4.9 shows that the mean range is from 3.25 to 3.80 and the standard deviation score ranges from .961 to .764, which is lower than 1.0 as suggested for data variability (Sekaran & Bougie, 2010). According to Hair *et al.* (2006), this result shows that the respondents' opinions are consistent.. The highest mean which is still below 4.0 showed respondents saying that "Environmental advertisements enhance my knowledge about green products" (*M*=3.80,

SD=.764). The lowest mean is for the item "Green advertising/campaigns conducted by the Government are interesting and effective" (*M*=3.25, *SD*=.981).

Table 4.9
Descriptive Statistics for Green Advertisement

Green Advertisement (*n*=387)		Mean	SD
1.	Environmental advertisements enhance my knowledge about green products	3.80	.764
2.	I enjoy watching broadcast environmental advertisement	3.62	.825
3.	Environmental advertisement guide customers to making an informed purchasing decision	3.75	.790
4.	The Government and NGOs are doing a good job in promoting the green living concept in Malaysia	3.28	.961
5.	Green advertising/campaigns are effective in educating and encouraging the public to go green	3.58	.839
6.	Green advertising/campaigns conducted by the Government are interesting and effective	3.25	.981
7.	I will adopt to a green lifestyle when exposed to persuasive green messages	3.67	.760
8.	Green advertising leads people to be more socially responsible	3.78	.770
9.	Green advertising/campaigns are interesting to see	3.61	.855

4.2.9 Green Consumerism Behavior

Green consumerism behavior was measured with 18 items. Table 4.10 shows that the mean range is from 3.14 to 4.29 and the standard deviation score ranges from 1.223 to .885. The respondents scored a high mean for "I switch off lights in unused rooms" (*M*=4.29, *SD*=.885), "I recycle newspaper" (*M*=4.21, *SD*=.927), "I should turn off tap when brushing my teeth" (*M*=4.12, *SD*=.960)., "I donate clothes to charity" ((*M*=4.10, *SD*=.958) and finally "I recycle cans, plastic bottles" (*M*=4.06, *SD*=.969), hence the mean is greater than 4.0. The lowest mean is for the item "I reduce toilet flushes" (*M*=3.14, *SD*=1.223).

Table 4.10

Descriptive Statistics for Green Consumerism Behavior

Green Consumerism Behavior (*n*=387)		Mean	SD
1.	I often buy organic products	3.15	.908
2.	I often buy products that are labeled as environmentally-safe	3.39	.902
3.	I often buy products that are against animal testing	3.35	.971
4.	I often buy products that contain no or fewer chemical ingredients	3.50	.900
5.	When I consider buying a product, I will look for a certified environmentally-safe or organic stamp	3.22	.951
6.	I often buy products that use recycled/recyclable packaging	3.37	.908
7.	I turn off tap when soaping up	3.94	1.074
8.	I reduce the number of baths/showers	3.16	1.209
9.	I reduce toilet flushes	3.14	1.223
10.	I turn off tap when brushing my teeth	4.12	.960
11.	I turn off tap when soaping dishes	4.02	.989
12.	I reduce hot water temperature	3.46	1.106
13.	I wait until there's a full load of washing	3.75	1.113
14.	I switch off lights in unused rooms	4.29	.885
15.	I recycle glass	3.50	1.210
16.	I recycle newspaper	4.21	.927
17.	I recycle cans, plastic bottles	4.06	.969
18.	I donate clothes to charity	4.10	.958

4.2.10 Summary of Descriptive Statistics

There are nine variables in this present study and the means and standard deviation for each of the factors are shown in Tables 4.2 to 4.10. The mean scores of less than 2.00 was treated as low; mean score of more than 4.00 was treated as high and values between 2.00 and 4.00 were treated as moderate. There were only two items (questions) that had a mean value of less than 3.00 (Perceived behavioral control – Recycling my household waste is inconvenient (R), M=2.98, SD=1.109; and Subjective norm- I often go shopping for green products with my friend, M=2.95, SD=.971). The results for the individual items ranged from M=2.95 (moderate) to M=4.29 (high) with the overall items falling in the moderate category ($2.00<M<4.00$).

4.3 Goodness of Measures

As mentioned earlier, goodness of data involved testing the validity and reliability of the questionnaire development. In this study this was done by running a reliability analysis Cronbach alpha. According to Gefen and Straub (2005) and Hair *et al*. (1998), goodness of measure had proven to enhance the credibility of measurement scales which duly measured the intended variables and therefore increased the level of reliability of the following analyses and findings.

An exploratory factor analysis (EFA) was conducted to identify the dimensionality of all the nine variables in the Green Consumerism Behavior model. EFA, traditionally, has been used to explore the possible underlying factor structure of a set of observed variables without imposing a preconceived structure on the outcome (Shur, 2006; Child, 1990). By performing EFA, the underlying factor structure is identified, and composite scores from the original variables were created.

To iterate from chapter three, the result of Kaiser-Meyer-Olkin (KMO) and Bartlet's Test of Sphericity need to be considered as satisfactory before factor analysis can be proceeded. According to Coakes, Steed and Ong (2009) to assume factorability the KMO must be greater than 0.60, the Bartlet's Test of Sphericity must be large and significant, anti-image correlation matrix and communality values must be greater than 0.50 and Eigenvalue must be greater than 1.

4.3.1 Dependent Variable

First, 18 items describing the dependent variable, green consumerism behavior, were subjected to factor analysis in order to determine the factor variables of dependent variable. After subjecting the data to Varimax rotation and removing problematic items, three factor variables (before this known as factors) of consumer's green behavior were observed in this study. A high correlations show among the items with Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) recorded 0.845. It was supported by Bartlett's test (approx Chi-square = 2759.685, df=153, *p*-value = 0.000). All anti-image correlations items for the dependent variable of this study showed values greater than 0.50 and the communality values were between 0.374 to 0.684. Meanwhile, the Eigenvalue for this analysis was at 5.605 at the 1st iteration and 1.725 at the 3rd iteration. This indicates that the results have met all the requirements, which is in line with Coakes, Steed and Ong. (2009). Table 4.11 shows the results of the factor analysis for the dependent variable. The SPSS output is attached as Appendix D.

Table 4.11
EFA for Dependent Variable

	Component		
	1	2	3
1. I often buy organic products		.717	
2. I often buy products that are labeled as environmentally-safe		.825	
3. I often buy products that are against animal testing		.593	
4. I often buy products that contain no or fewer chemical ingredients		.652	
5. When I consider buying a product, I will look for a certified environmentally-safe or organic stamp		.720	
6. I often buy products that use recycled/recyclable packaging		.692	

Table 4.11 (Continued)

7. I turn off tap when soaping up			.584
8. I turn off tap when soaping dishes			.805
9. I reduce hot water temperature			.566
10. I wait until there's a full load of washing			.532
11. I reduce the number of baths/showers			.814
12. I reduce toilet flushes			.805
13. I switch off lights in unused rooms	.694		
14. I turn off tap when brushing my teeth	.579		
15. I recycle glass	.528		
16. I recycle newspaper	.805		
17. I recycle cans, plastic bottles	.781		
18. I donate clothes to charity	.685		
Eigenvalue	5.605	2.268	1.725
% of variance explained	31.139	12.599	9.583
KMO: 0.845			
Bartlett's Test of Sphericity: 2759.685, p = .000			

Three groups were formed which were *Recycle Behavior* (Eigenvalue=5.605, percentage of variance explained=31.139) (question 13 to question 18, 6 items), second is *Purchase Behavior* (Eigenvalue=2.268, percentage of variance explained=12.599) (question 1 to question 6, 6 items) and third is *Conservation Behavior* (Eigenvalue=1.725, percentage of variance explained=9.583) (question 7 to question 12, 6 items).

4.3.2 Mediator Variable

A total of 14 items describing the mediator variable, intention to green consumerism behavior, were subjected to factor analysis in order to determine the factor variables of the mediator variable. After subjecting the data to Varimax rotation and removing problematic items, one factor variable (before this known as factors) of intention to green behavior were observed in this study. A high correlations show among the items with Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA)

recorded 0.896. It was supported by Bartlett's test (approx Chi-square = 2815.380, df=91, *p*-value = 0.000). All anti-image correlations items for the dependent variable of this study showed values greater than 0.50 and the communality values were between 0.102 to 0.563. Meanwhile, the Eigenvalue for this analysis was at 6.114 at the 1st iteration. This indicates that the results have met all the requirements, which is in line with Coakes, Steed and Ong. (2009). Table 4.12 shows the results of the factor analysis for the mediator variable. The SPSS output is attached as Appendix D.

Table 4.12
EFA Mediator

		Component
		1
1.	**I will buy few disposable products**	**.319**
2.	I will reuse jars and bottles whenever possible	.637
3.	I will reuse paper, rather than buying it new	.629
4.	I will take old plastic bags shopping, rather than using new ones, or take a durable bag	.632
5.	I will look for wrapping that can be easily reused or recycled	.679
6.	I reuse old containers, like ice-cream tubs	.667
7.	I wash and reuse certain items before disposing of them, like dish-cloths	.703
8.	I repair items before deciding they have to be thrown away	.709
9.	I reduce the amount of produce that's bought which has lots of packaging	.676
10.	I buy certain produce without packaging, like fruits and vegetables	.567
11.	I would definitely buy green products	.714
12.	I would absolutely consider buying green products	.734
13.	I would definitely expect to buy green products	.720
14.	I would absolutely plan to buy green products	.751
Eigenvalue		6.114
% of variance explained		43.674
KMO: 0.896		
Bartlett's Test of Sphericity: 2815.380, p = .000		

One group was formed which was *Intention* (Eigenvalue=6.114, percentage of variance explained=43.674). One item (question 1) which is "I will buy few disposable products" with a low communalities value (.319) failed to load on its hypothesized factor variable, and was finally deleted in the final analysis.

4.3.3 Moderator Variable

A total of nine items describing the moderator variable, green advertisement, were subjected to factor analysis in order to determine the factor variables of the moderation variable. After subjecting the data to Varimax rotation and removing problematic items, one factor variable (before this known as factors) of green advertisement were observed in this study. A high correlations show among the items with Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) recorded 0.852. It was supported by Bartlett's test (approx Chi-square = 1399.204, df=36, *p*-value = 0.000). All anti-image correlations items for the dependent variable of this study showed values greater than 0.50 and the communality values were between 0.396 to 0.568. Meanwhile, the Eigenvalue for this analysis was at 4.269 at the 1st iteration. This indicates that the results have met all the requirements, which is in line with Coakes, Steed and Ong. (2009). Table 4.13 shows the results of the factor analysis for the moderator variable. The SPSS output is attached as Appendix D.

Table 4.13
EFA Moderator

		Component
		1
1.	Environmental advertisement enhance my knowledge about green products	.633
2.	I enjoy watching broadcast environmental advertisement	.725
3.	Environmental advertisement guide customers to making an informed purchasing decision	.734
4.	I will adopt to a green lifestyle when exposed to persuasive green messages	.629
5.	Green advertising leads people to be more socially responsible	.717
6.	The Government and NGOs are doing a good job in promoting the green living concept in Malaysia	.664
7.	Green advertising/campaigns are effective in educating and encouraging the public to go green	.631
8.	Green advertising/campaigns conducted by the Government are interesting and effective	.698
9.	Green advertising/campaigns are interesting to see	.754
Eigenvalue		4.269
% of variance explained		47.436
KMO: 0.896		
Bartlett's Test of Sphericity: 2815.380, p = .000		

One group was formed which was *Green Advertisement* (Eigenvalue=4.269, percentage of variance explained=47.436).

4.3.4 Independent Variables

A total of 47 items describing the independent variables, were subjected to factor analysis in order to determine the factor variables of the independent variables. After subjecting the data to Varimax rotation and removing problematic items, 6 factor variables (before this known as factors) of independent variables were observed in this study. A high correlations show among the items with Kaiser-Meyer-Olkin (KMO)

measure of sampling adequacy (MSA) recorded 0.903. It was supported by Bartlett's test (approx Chi-square = 10646.659, df=1128, *p*-value = 0.000). All anti-image correlations items for the dependent variable of this study showed values greater than 0.50 and the communality values were between 0.181 to 0.748. Meanwhile, the Eigenvalue for this analysis was at 12.668 at the 1st iteration and 1.764 at the 6th iteration. This indicates that the results have met all the requirements, which is in line with Coakes, Steed and Ong. (2009). Table 4.14 shows the results of the factor analysis for the independent variables. The SPSS output is attached as Appendix D.

Table 4.14

EFA Independent Variables

		Components					
		1	2	3	4	5	6
1.	The major part of the population does not act in an environmentally conscious way					.613	
2.	There are limits to economic growth which our industrialized world has crossed or will reach very soon					.625	
3.	**Environmental protection measures should be carried out even if this reduces the number of jobs in the economy**					**.382**	
4.	It worries me when thinking about the environmental conditions our children and grandchildren have to live under					.656	
5.	When I read newspaper articles about environmental problem or view such TV-reports, I am annoyed and angry					.565	
6.	If we continue as before, we are approaching an environmental disaster					.706	
7.	It is still true that politicians do far too little for environmental protection					.749	
8.	For the benefit of the environment, we should be prepared to restrict our present style of living					.667	
9.	I feel I should not waste anything if it could be used again	.626					
10.	It would be wrong of me not to recycle my household waste	.760					
11.	I would feel guilty if I did not recycle my household waste	.730					
12.	Not recycling goes against my principles	.671					
13.	Everybody should share the responsibility to recycle household waste	.664					
14.	I am concerned with maintaining a good place to live	.639					
15.	I have a strong interest in the health and well being in the community in which I live	.682					
16.	I believe I have a personal responsibility to recycle my waste	.767					
17.	I feel a personal obligation to contribute to environmentally friendly waste separation	.730					

Table 4.14 (Continued)

	Components					
	1	2	3	4	5	6
18. I would react negatively if I discovered that waste could have been recycled had been disposed of in the wrong place	.682					
19. I feel bad if I don't recycle my waste	.750					
20. I have plenty of opportunities to recycle my household waste			.592			
21. Recycling my household waste is inconvenient (R)			**-.015**			
22. Recycling is easy			.581			
23. I know what items of household waste can be recycled			.673			
24. I know where to take my household waste for recycling			.732			
25. I know how to recycle my household waste			.763			
26. I would be able to buy green products			.565			
27. I have the resources to buy green products.			.610			
28. Whether or not I will purchase eco-friendly products for personal use in the coming month is entirely up to me.			.597			
29. I have complete control over the number of eco-friendly products that I will buy for personal use in the coming month.			.586			
30. I know that I buy products and packages that are environmentally safe						**.456**
31. I know more about recycling than the average person						.680
32. I know how to select products and packages that reduce the amount of waste ending up in landfills						.646
33. I understand the environmental phrases and symbols on product packages						.601
34. I am very knowledgeable about environmental issues						.654
35. I should be responsible protecting our environment				.664		
36. Environmental protection starts with me				.692		
37. I have taken responsibility for environmental protection since I was young				**.493**		

Table 4.14 (Continued)

	Components					
	1	2	3	4	5	6
38. I have much responsibility to protect the environment in Malaysia				.721		
39. I am willing to take up responsibility to protect the environment				.682		
40. I learnt about environmental issues i.e. recycling from my friends		.608				
41. I often discuss environmental issues i.e. recycling from my friends		.724				
42. My friends often recommend environmentally friendly products to me		.781				
43. I often go shopping for green products with my friend		.803				
44. I often share my green product experiences and information with my friends		.694				
45. Most people think I should recycle		.696				
46. Most people would approve of me recycling		.452				
47. Most people who are important to me would think that I should recycle		.685				
48. Most people I value, would recycle		.596				
Eigenvalue	12.668	4.759	3.017	2.281	2.095	1.764
% of variance explained	26.391	9.915	6.285	4.751	4.365	3.675
KMO: 0.903						
Bartlett's Test of Sphericity: 10646.659, p = .000						

The first factor is *Moral Norm* (Eigenvalue=12.668, percentage of variance explained=26.391) (from question 9 to question 19, 11 items) whereby all the items loaded successfully in the hypothesized factor. The second factor is *Subjective Norm* (Eigenvalue=4.759, percentage of variance explained=9.915), (from question 40 to question 48, 9 items). Third factor is *Perceived Behavioral Control* (Eigenvalue= 3.017, percentage of variance explained=6.285), (from question 20 to 29, 10 items). One item (question 21) which is "Recycling my household waste is inconvenient" has a low communality value (-.015) failed to load on its hypothesized factor variable and consequently deleted in the final analysis.

The fourth factor was *Perceived Environmental Responsibility* (Eigenvalue=2.281, percentage of variance explained=4.365) (from question 35 to question 39, 5 items). One item (question 37) which is "I have taken responsibility for environmental protection since I was young" has a low communality value (.493) failed to load on its hypothesized factor variable and consequently deleted in the final analysis. The fifth factor is *Environmental Concern* (Eigenvalue=2.095, percentage of variance explained=4.365) (from question 1 to question 8, 8 items). One item (question 3) which is "Environmental protection measures should be carried out even if this reduces the number of jobs in the economy" with a low communalities value (.298) failed to load on its hypothesized factor variable, and was finally deleted in the final analysis. The final factor, factor six, *Perceived Knowledge* (Eigenvalue=1.764, percentage of variance explained=3.675) (from question 30 to question 34, 5 items)) had one item (question 30) which is "I know that I buy products and packages that are environmentally safe" with a low

communalities value (.456) failed to load on its hypothesized factor variable, and was finally deleted in the final analysis with all the items loaded successfully into their hypothesized factor variable.

4.3.5 Reliability Analysis of Variables

The reliability analysis (Cronbach alpha) was performed to determine the reliability and consistency of each of the measurements of constructs. Table 4.15 shows the alpha value for all the variables. The SPSS output is attached as Appendix D.

Table 4.15
Cronbach Alpha (n=387)

Variable	Cronbach's alpha value pilot test n=30	Number of items pilot test	Cronbach's alpha value n=387	Number of items
Moral norm	.929	11	.922	11
Environmental concern	.799	8	.809	7
Perceived knowledge	.849	5	.858	4
Perceived environmental responsibility	.782	7	.831	4
Subjective norm	.825	9	.887	9
Perceived control behavior	.662	10	.873	9
Intention to green consumerism	.886	14	.903	13
Green advertisement	.769	9	.858	9
Green consumerism behavior	.866	20	.866	18

From the table, it was noted that the coefficient alphas of the variables after running EFA were within the range of .809 to .922, indicating that the internal consistency reliability of the measurement scales used for the variables were considerably reliable and acceptable as accordance to Sekaran (2003). Further to that, Gliem and

Gliem (2003) and Hair *et al*. (1998) also posited that the reliability of a measure is considered stronger if the coefficient alpha value is closer to 1.

4.4 Hypotheses Testing

The hypotheses for this study were examined by first using correlation analysis to determine there is no multicollinearity and next regression analysis to answer research questions one to five.

4.4.1 Correlation Analysis

The Table 4.16 presents the correlational matrix of all the variables in this research. Based on Rowntree (1981) guidelines, environmental concern showed almost non-existence or a very weak relationship with green purchase behavior (r=.082); green conservation behavior (r=-.040); and recycle behavior (r=.093) but showed a weak and low correlation value at r = .342 to intention of green consumerism. Moral norm showed a moderate relationship with green purchase behavior (r=.400); green conservation behavior (r=.411); and recycle behavior (r=.536), perceived behavioral control showed a moderate relationship with green purchase behavior (r=.427); green conservation behavior (r=.343); and recycle behavior (r=.414), perceived knowledge showed a moderate relationship with green purchase behavior (r=.402); green conservation behavior (r=.284); and recycle behavior (r=.277), perceived environmental responsibility showed a weak relationship with green purchase behavior (r=.169); green conservation behavior (r=.089); and recycle behavior (r=.175), subjective norm displayed a moderate relationship with green purchase behavior (r=.431); green conservation behavior

(r=.282); and recycle behavior (r=.257). Intention to green consumerism had a moderate correlation with green purchase behavior (r=.360); green conservation behavior (r=.301); and recycle behavior (r=.296). Accordingly, the following variables, moral norm (r=.498), perceived knowledge (r=.471), environmental concern (r=.342), perceived environmental responsibility (r=.552), subjective norm (r=.470) and perceived behavioral control (r=.460), showed a moderate correlation with intention to green consumerism.

As exhibited in Table 4.16 the overall correlation coefficient values of the study variables are in the range between -.040 to .541 ($p < 0.01$), thus implying that the values are in between low and moderate level. Most importantly, multicollinearity did not exist in the study as all the correlation coefficient values were less than .80 (Berry & Feldman, 1985), and thus, the variables were ready for the subsequent regression analyses. The SPSS output is attached as Appendix E.

Table 4.16
Pearson Correlations (n=387)

	MN	EC	PBC	PK	PER	SN	Int	Ad	PB	CB
MN	1									
EC	.319**	1								
PBC	.541**	.155**	1							
PK	.463**	.149**	.531**	1						
PER	.383**	.342**	.313**	.308**	1					
SN	.327**	.020	.478**	.476**	.282**	1				
Int	.498**	.342**	.460**	.471**	.552**	.470**	1			
Ad	.491**	.190**	.485**	.454**	.279**	.446**	.463**	1		
PB	.400**	.082	.427**	.402**	.169**	.431**	.360**	.360**	1	
CB	.411**	-.040	.343**	.284**	.089	.282**	.301**	.301**	.326**	1
RB	.536**	.093	.414**	.277**	.175**	.257**	.296**	.296**	.376**	.522**

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

Note:

MN- Moral Norm
EC- Environmental Concern
PBC- Perceived Behavioral Control
PK – Perceived Knowledge
PER – Perceived Environmental Responsibility
SN – Subjective Norm
Ad – Green Advertisement
Int – Intention to Green Consumerism
PB- Purchase Behavior
CB- Conservation Behavior
RB- Recycle Behavior

From the Pearson correlation analysis, it was found that only environmental concern showed a very weak and non-significant correlation to green consumerism behavior (purchase behavior, recycle behavior and conservation behavior), however all the other variables showed a low to moderate and significant relationship to green consumerism behavior and intention to green consumerism behavior.

The non-significant correlation relationship between environmental concern and green consumerism behavior was explained by the general behavior of mankind who thinks that bad things will happen to others and not to them. Malaysians generally are not inclined in the preservation and sustainability of the environment. The concern level of the environment is low. Malaysians tend to see global warming or ice melting as something that would happen somewhere else and not here. It has always been the case of blaming another, for example, issues of open burning and hotspots would only happen in a neighboring country and thus Malaysians tend to blame the others for the poor air condition. Furthermore, Malaysians do not take environmental concern as a major issue as compared to their counterparts in the Western world. One of the reasons behind this can be caused by our lackadaisical attitude; environmental concern was never a significant subject to be talked about. As such, we don't even have many of our political leaders championing for a green culture, whereas in some of the developed western

society, a political campaign's main agenda would be emphasizing greatly on green culture and green consumerism.

4.4.2 Regression Analysis

The overall inspection on the data disclosed that there were no serious violations of the three main assumptions namely the linearity issue, homoscedasticity and normality of the error term distribution and therefore the data was ready to be regressed.

4.4.2.1 Regression Analysis on the influence of Intention on Moral Norm, Environmental Concern, Perceived Knowledge, Perceived Environmental Responsibility, Subjective Norm and Perceived Behavioral Control

Six independent variables: moral norm, environmental concern, perceived behavioral control, perceived knowledge, perceived environmental responsibility and subjective norm regressed against the mediator variable, intention, and the analysis is presented in Table 4.17.

Table 4.17
Independent Variables Regressed with Intention

Predictors	Standard Coefficient Beta(β)	p
Moral norm	.153	.000
Environmental concern	.151	.001
Perceived knowledge	.131	.005
Perceived environmental responsibility	.313	.000
Subjective norm	.230	.000
Perceived behavioral control	.076	.115
R^2	.505	
Adjusted R^2	.497	
F Change	64.688	
Sig. F Change	.000	

Based on Table 4.17, it was found that all factors influenced behavioral intention. The overall result shows that the independent variables explained 50.5 percent (R^2= .505) of the variance of behavioral intention. The results of this regression between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control and intention to green consumerism answered the following hypotheses as summarized in Table 4.18.

Table 4.18
Hypotheses Testing for Research Question 1

Hypothesis		Result
H1a	There is a positive significant relationship between moral norm and intention to green consumerism.	**Supported**
H1b	There is a positive significant relationship between environmental concern and intention to green consumerism.	**Supported**
H1c	There is a positive significant relationship between perceived knowledge and intention to green consumerism.	**Supported**
H1d	There is a positive significant relationship between perceived environmental responsibility and intention to green consumerism.	**Supported**
H1e	There is a positive significant relationship between subjective norm and intention to green consumerism.	**Supported**
H1f	There is a positive significant relationship between perceived behavioral control and intention to green consumerism.	**Not Supported**

4.4.2.2 Regression Analysis between Intention and Green Consumerism Behavior

Intention was regressed against the green consumerism behavior and as green consumerism behavior was operationalized as a multivariate, this step was done three times, first with purchase behavior, second with conservation behavior and lastly with recycle behavior. The results are presented in Table 4.19.

Table 4.19

Intention Regressed with Green Consumerism Behavior

Predictors	Standard Coefficient Beta(β)	p
Intention to Purchase Behavior	.357	.000
R^2	.127	
Adjusted R^2	.125	
F	56.220	
Sig. F	000	
Intention to Conservation Behavior	.262	.000
R^2	.068	
Adjusted R^2	.066	
F	28.311	
Sig. F	.000	
Intention to Recycle Behavior	.364	.000
R^2	.132	
Adjusted R^2	.130	
F	58.664	
Sig. F	.000	

The results from the regression illustrated that intention was significantly related to the dependent variable, purchase behavior ($\beta = .357$, $p < .001$), conservation behavior ($\beta = .262$, $p < .001$), and recycle behavior ($\beta = .364$, $p < .001$). The results of this regression between intention to green consumerism and green consumerism behavior answered the following hypotheses as summarized in Table 4.20.

Table 4.20
Hypotheses Testing for Research Question 2

Hypothesis		Result
H2a	There is a positive significant relationship between intention to green consumerism and green purchase behavior.	**Supported**
H2b	There is a positive significant relationship between intention to green consumerism and green conservation behavior.	**Supported**
H2c	There is a positive significant relationship between intention to green consumerism and recycle behavior.	**Supported**

4.4.2.3 Mediation

In order to answer the third research question of the study, that is to investigate if intention to green consumerism mediated the relationship between the independent variables (moral norm, environmental concern, perceived behavior control, perceived knowledge, perceived environmental responsibility and subjective norm) and green consumerism behavior, the following analyses were done. Iterating from chapter three, Baron and Kenny's (1986), 4 steps were used; Step 1: the relationship between the independent variable and dependent variable, green consumerism behavior, was established; Step 2, the relationship between the independent variable and the mediator variable, intention to green consumerism was established; and, Step 3, both independent variable and intention to green consumerism was regressed against green consumerism behavior. As there were three dimensions identified in green consumerism behavior, the mediating process for each independent variable was done three times: first using purchase behavior, second using green conservation behavior and third using recycled behavior. Table 4.21 shows the outcome of the multiple regression process.

Table 4.21

Mediation Steps

Step 1:

Predictors	Standard Coefficient Beta(β)	p
Moral norm	.153	.000
Environmental concern	.151	.001
Perceived knowledge	.131	.005
Perceived environmental responsibility	.313	.000
Subjective norm	.230	.000
Perceived behavioral control	.076	.115
R^2	.505	
Adjusted R^2	.497	
F Change	64.688	
Sig. F Change	.000	

Step 2:

Predictors	Standard Coefficient Beta(β)	p
Intention to Purchase Behavior	.357	.000
R^2	.127	
Adjusted R^2	.125	
F	56.220	
Sig. F	000	
Intention to Conservation Behavior	.262	.000
R^2	.068	
Adjusted R^2	.066	
F	28.311	
Sig. F	.000	
Intention to Recycle Behavior	.364	.000
R^2	.132	
Adjusted R^2	.130	
F	58.664	
Sig. F	.000	

In Step 3, the independent variables were regressed first with purchase behavior, followed by conservation behavior and recycle behavior. The results are presented in Table 4.22, Table 4.23 and Table 4.24, respectively.

4.4.2.3.1 Regression between Independent Variables and Purchase Behavior

In this section, the six independent variables were regressed against purchase behavior. The results are shown in Table 4.22.

Table 4.22
Independent Variables Regressed with Purchase Behavior

Predictors	Standard Coefficient Beta(β)	p
Moral norm	.255	.000
Environmental concern	-.010	.828
Perceived knowledge	.168	.002
Perceived environmental responsibility	-.057	.250
Subjective norm	.284	.000
R^2	.282	
Adjusted R^2	.272	
F	29.898	
Sig. F	.000	

From Table 4.22, it can be observed that two independent variables, environmental concern (β=-.010, p>.05) and perceived environmental responsibility (β=-.057, p>.05) had a non-significant relationship with the dependent variable, purchase behavior, and therefore dropped in the next step for mediation analysis. The rest of the independent variables (moral norm, perceived knowledge and subjective norm) had significant relationship with the dependent variable, purchase behavior and were included in the next step of the regression. The independent variables explained 28.2 percent (R^2=.282) of the variance of purchase behavior.

4.4.2.3.2 Regression between Independent Variables and Conservation Behavior

In this section, the six independent variables were regressed against conservation behavior. The results are shown in Table 4.23.

Table 4.23
Independent Variables Regressed with Conservation Behavior

Predictors	Standard Coefficient Beta(β)	p
Moral norm	.411	.000
Environmental concern	-.159	.001
Perceived knowledge	.076	.172
Perceived environmental responsibility	-.076	.144
Subjective norm	.136	.010
R^2	.228	
Adjusted R^2	.218	
F	22.503	
Sig. F	.000	

From Table 4.23, it can be observed that three independent variables, perceived knowledge (β=.076, p>.05) and perceived environmental responsibility (β=-.076, p>.05 had a non-significant relationship with the dependent variable, conservation behavior, and therefore dropped in the next step for mediation analysis. The rest three of the independent variables (moral norm, environmental concern, subjective norm) had significant relationship with the dependent variable, conservation behavior, and were included in the next step of the regression. The independent variables explained 22.8 percent (R^2=.228) of the variance of conservation behavior.

4.4.2.3.3 Regression between Independent Variables and Recycle Behavior

In this section, the six independent variables were regressed against recycle behavior. The results are shown in Table 4.24.

Table 4.24
Independent Variables Regressed with Recycle Behavior

Predictors	Standard Coefficient Beta(β)	p
Moral norm	.540	.000
Environmental concern	-.071	.136
Perceived knowledge	.006	.914
Perceived environmental responsibility	-.035	.475
Subjective norm	.089	.077
R^2	.301	
Adjusted R^2	.292	
F	32.874	
Sig. F	.000	

From Table 4.24, it can be observed that three independent variables, environmental concern (β=-.071, p>.05), perceived knowledge (β=-.006, p>.05), perceived environmental responsibility (β=-.035, p>.05) and subjective norm (β=.089, p>.05) had a non-significant relationship with the dependent variable, recycle behavior, and therefore dropped in the next step for mediation analysis. Only moral norm had significant relationship with the dependent variable, recycle behavior, and was included in the next step of the regression. The independent variable explained 30.1 percent (R^2=.301) of the variance of recycle behavior.

In the final step, Step 4, according to Baron and Kenny (1986) and Judd and Kenny (1981), was to ascertain whether full mediation or partial mediation had occurred. The independent variables were regressed against the dependent variable while mediated by intention. The hierarchical regression analysis was carried out thrice, first with

purchase behavior, second with conservation behavior and finally with recycle behavior. The summary and results for the mediating effect are discussed in the following sections.

4.4.2.3.4 Mediation Effect of Intention on the Relationship between Independent Variables and Purchase Behavior

In lieu with Baron and Kenny (1986) to test the mediation effect, all the variables must produce a significant result and any insignificant result was to be dropped. Therefore to test the mediating effect of intention on purchase behavior, three independent variables were dropped, environment concern, perceived behavioral control and perceived environmental responsibility. The result of the hierarchical regression analysis is shown in Table 4.25.

Table 4.25
The Mediation Effect of Intention on the Relationship between IV and Purchase Behavior

Variables	Dependent Variable: Purchase Behavior		
	Model 1 (without mediation) Std Beta	Model 2 (with mediation) Std Beta	Result
Independent Variable			
Moral Norm	.235*	.217*	No mediation
Perceived Knowledge	.161*	.151*	No mediation
Subjective Norm	.278*	.263*	No mediation
Mediating Variable			
Intention		.054 (p=.328)	
R^2	.279	.281	
Adjusted R^2	.273	.273	
R^2 Change	.279	.002	

Note: Significance levels * p<.05

To test the mediation effect, Baron and Kenny (1986) stated that full mediation takes place when the impact of the independent variables on the dependent variable controlled by the mediating variable is insignificant. Partial mediation on the other hand takes place when the standardized coefficient beta value reduces and is significant. In

Table 4.25, the results presented shows there's no changes in both the beta value and p-values. Thus it can be concluded that intention did not mediate between the independent variables (moral norm, perceived knowledge, subjective norm) and the dependent variable, purchase behavior.

4.4.2.3.5 Mediation Effect of Intention on the Relationship between Independent Variables and Conservation Behavior

In lieu with Baron and Kenny (1986) to test the mediation effect, all the variables must produce a significant result and any insignificant result dropped. Therefore to test the mediating effect of intention on conservation behavior, three independent variables were dropped, perceived knowledge, perceived environmental responsibility and perceived behavioral control. The result of the hierarchical regression analysis is shown in Table 4.26.

Table 4.26
The Mediation Effect of Intention on the Relationship between IV and Conservation Behavior

Variables	Dependent Variable: Conservation Behavior		
	Model 1 (without mediation) Std Beta	Model 2 (with mediation) Std Beta	Result
Independent Variable			
Moral Norm	.418**	.396**	No mediation
Environmental Concern	-.176**	-.194**	No mediation
Subjective Norm	.149*	.122*	No mediation
Mediating Variable			
Intention		.074 (p=.209)	
R^2	.221	.224	
Adjusted R^2	.214	.216	
R^2 Change	.221	.003	

Note: Significance levels * p<.05, **p<.001

To test the mediation effect, Baron and Kenny (1986) stated that full mediation takes place when the impact of the independent variables on the dependent variable controlled by the mediating variable is insignificant. Partial mediation on the other hand takes place when the standardized coefficient beta value reduces and is significant. In Table 4.26 the results presented shows there's no changes in both the beta value and p-values. Thus it can be concluded that intention did not mediate between the independent variables (moral norm, environment concern, subjective norm) and the dependent variable, conservation behavior.

4.4.2.3.6 Mediation Effect of Intention on the Relationship between Independent Variables and Recycle Behavior

In lieu with Baron and Kenny (1986) to test the mediation effect, all the variables must produce a significant result and any insignificant result was to be dropped. Therefore to test the mediating effect of intention on recycle behavior, five independent variables were dropped, environment concern, perceived knowledge, perceived environmental responsibility, perceived behavioral control and subjective norm. The result of the hierarchical regression analysis is shown in Table 4.27.

Table 4.27
The Mediation Effect of Intention on the Relationship between IV and Recycle Behavior

Variables	Dependent Variable: Recycle Behavior		
	Model 1 (without mediation)	Model 2 (with mediation)	Result
Independent Variable			
Moral Norm	.536**	.472**	No mediation
Mediating Variable			
Intention		.129 (p=.009)	
R^2	.287	.300	
Adjusted R^2	.285	.296	
R^2 Change	.287	.012	

Note: Significance levels * p<.05, **p<.001

To test the mediation effect, Baron and Kenny (1986) stated that full mediation takes place when the impact of the independent variables on the dependent variable controlled by the mediating variable is insignificant. Partial mediation on the other hand takes place when the standardized coefficient beta value reduces and is significant. In Table 4.27 the results showed that there are no changes in both the beta value and p-values. Thus it can be concluded, intention did not mediate between the independent variable (moral norm) and the dependent variable, recycle behavior.

The results of this regression between the independent variables and green consumerism behavior mediated by intention to green consumerism answered the following hypotheses as summarized in Table 4.28.

Table 4.28
Hypotheses Testing for Research Question 3

Hypothesis		Decision
H3a	There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green purchasing behavior mediated by intention to green consumerism.	**Not Supported**
H3b	There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green conservation behavior mediated by intention to green consumerism.	**Not Supported**
H3c	There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and recycle behavior mediated by intention to green consumerism.	**Not Supported**

4.4.2.4 Regression Analysis between Perceived Behavioral Control and Green Consumerism Behavior

In order to answer the fourth research question of this study, perceived behavioral control was regressed against green consumerism behavior. As green consumerism behavior was operationalized as purchase behavior, conservation behavior and recycle behavior, this regression was done thrice. Table 4.29 shows the results of the regression.

Table 4.29

Perceived Behavioral Control Regressed with Green Consumerism Behavior

Predictors : Perceived Behavioral Control	Standard Coefficient Beta(β)	p
Purchase Behavior	.427	.000
R^2	.182	
Adjusted R^2	.180	
F	85.871	
Sig. F	000	
Conservation Behavior	.343	.000
R^2	.118	
Adjusted R^2	.115	
F	51.378	
Sig. F	.000	
Recycle Behavior	.414	.000
R^2	.171	
Adjusted R^2	.169	
F	79.587	
Sig. F	.000	

The results from the regression illustrated that perceived behavioral control was significantly related to the dependent variable, purchase behavior ($\beta = .427$, $p < .001$), conservation behavior ($\beta = .343$, $p < .001$), and recycle behavior ($\beta = .414$, $p < .001$). The results of this regression between perceived behavioral control to green consumerism behavior answered the following hypotheses as summarized in Table 4.30.

Table 4.30
Hypotheses Testing for Research Question 4

Hypothesis		Result
H4a	There is a positive significant relationship between perceived behavioral control and green purchase behavior.	**Supported**
H4b	There is a positive significant relationship between perceived behavioral control and green conservation behavior.	**Supported**
H4c	There is a positive significant relationship between perceived behavioral control and recycle behavior.	**Supported**

4.4.2.5 Moderator

In order to answer the final research question that is to examine if green advertisement moderates the relationship between intention to green consumerism and green consumerism behavior, the following analysis was conducted. In testing the presence of the moderator, interaction effects were first developed by multiplying the value of the predictor variable and the moderating variable. As mentioned in the methodology in Chapter Three, the three-step hierarchical regression process was administered. First the dependent (criterion) variable (green consumerism behavior) was regressed with the predictor variable (intention to green consumerism) and this was followed by the moderator (green advertisement) and finally the interaction term (product of intention to green consumerism and green advertisement) was regressed. As the dependent variable has three dimensions, this moderation process was run three times, first with green purchase behavior, second with green conservation behavior and third with recycle behavior. The results of the three step regression are displayed in Table 4.31.

Table 4.31

Results of Moderator Effect on Green Purchase Behavior

Variables	Standard Beta Step 1	Standard Beta Step 2	Standard Beta Step 3
Predictor variable: Intention	.357*	.242*	.440 (p=.083)
Moderating variable: Green advertisement		.247*	.453(p=.085)
Interaction terms: Intention *green advertisement			-.476 (p=.263)
R^2	.127	.175	.177
Adjusted R^2	.125	.171	.170
R^2 Change	.127	.048	.001
F Change	56.220*	22.386*	.639(p=.425)

Note: Significance levels *p<.001

In step 2, standardized green advertisement (moderator) was entered into the equation. The R^2 increased from 12.7% to 17.5% indicating a change of 5.2% which was significant at $p < .001$. Next in the third step, the interaction term was entered into the model and the additional variance explained by the interaction term (5.2%) was not significant at p=.263, implicating that there is no moderating effect of green advertisement on the relationship between intention to green consumerism and green purchase behavior. This relationship can be better explained by portraying the interaction of green advertisement between intention to green consumerism and purchase behavior. To draw the graph, green advertisement was recorded into two main categories (below median = low moderation of green advertisement and above median = high moderation of green advertisement). Figure 4.1 illustrates a relationship which implies that green advertisement strengthened the relationship between intention to green consumerism and purchase behavior for the low group of green advertisement but however showed a weaken relationship for the high group of green advertisement. The impact of green advertisement on intention to green consumerism is slightly lower than the opposite

group. Consequently, this finding indicates that green advertisement can act as a better moderator to the relationship between intention and purchase behavior among consumers with low effect of green advertisement.

Therefore, the graphical lines seems not to be in tandem with the hypothesis which stated that positive relationship between intention and purchase behavior will be stronger when impact of green advertisement is high. This is because the relationship between both study variables appears to be weaker instead of stronger when green advertisement is high. Hence, in this case, green advertisement cannot be considered as a moderator to the hypothetical relationship. With respect to this conclusive remark, hypothesis H5a is not supported.

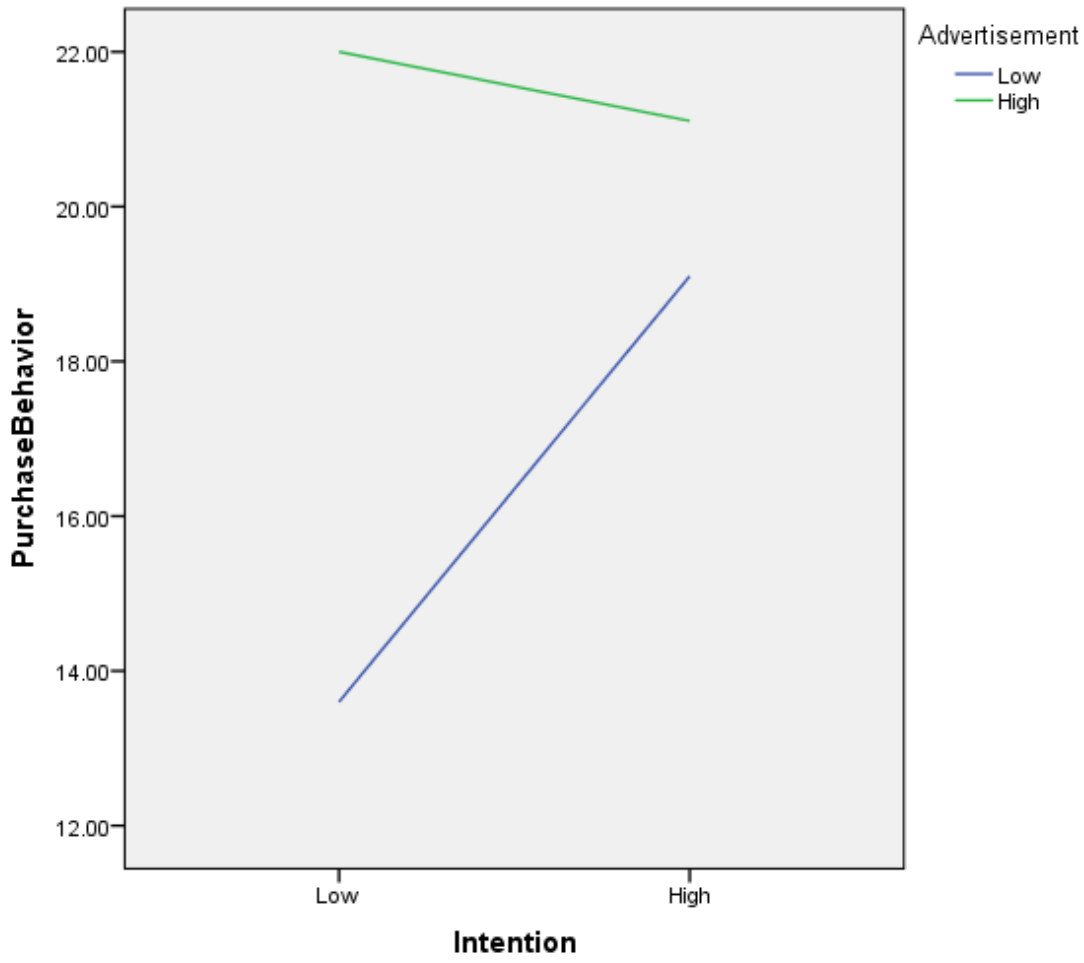

Figure 4.1
Moderating Effect of Green Advertisement on Green Purchase Behavior

Table 4.32 shows the moderating effect of green advertisement between intention to green consumerism and green conservation behavior.

Table 4.32
Results of Moderator Effect on Green Conservation Behavior

Variables	Standard Beta Step 1	Standard Beta Step 2	Standard Beta Step 3
Predictor variable: Intention	.262*	.156*	1.178*
Moderating variable: Green advertisement		.229*	1.292*
Interaction terms: Intention*green advertisement			-1.794*
R^2	.068	.110	.146
Adjusted R^2	.066	.105	.140
R^2 Change	.068	.041	.037
F Change	28.311*	17.728*	16.415*

*p<.001

In step 2, standardized green advertisement (moderator) was entered into the equation in order to gauge the impact of the moderator. The R^2 increased from 6.8% to 11.0% indicating a change of 4.2% which was significant at $p < .001$. Next in the third step, the interaction term was entered into the model and the additional variance explained by the interaction term (16.42%) was evidently significant at $p < .001$, implicating that there was a quasi **moderating** effect of green advertisement on the relationship between intention to green consumerism and green conservation behavior. Furthermore, R^2 Change was .037 when the interaction term was added (model 3) to the predictor and moderator variables. This change was significant, $F(3,386) = 21.861$, $p < .001$.

Figure 4.2 illustrates a mix relationship which implies that green advertisement strengthened the relationship between intention to green consumerism and conservation

behavior for the low group of green advertisement but however showed a weaken relationship for the high group of green advertisement.. Furthermore, the impact of green advertisement on intention to green consumerism is much lower than the opposite group. Consequently, this finding indicates that green advertisement can act as a better moderator to the relationship between intention and conservation behavior among consumers with low effect of green advertisement.

Therefore, the graphical lines seems not to be in tandem with the hypothesis which stated that positive relationship between intention and conservation behavior will be stronger when impact of green advertisement is high. However, the relationship between the study variables appears to be stronger when green advertisement is low. Hence, in this case, green advertisement can be considered as a quasi moderator to the hypothetical relationship. With respect to this conclusive remark, hypothesis H5b is supported.

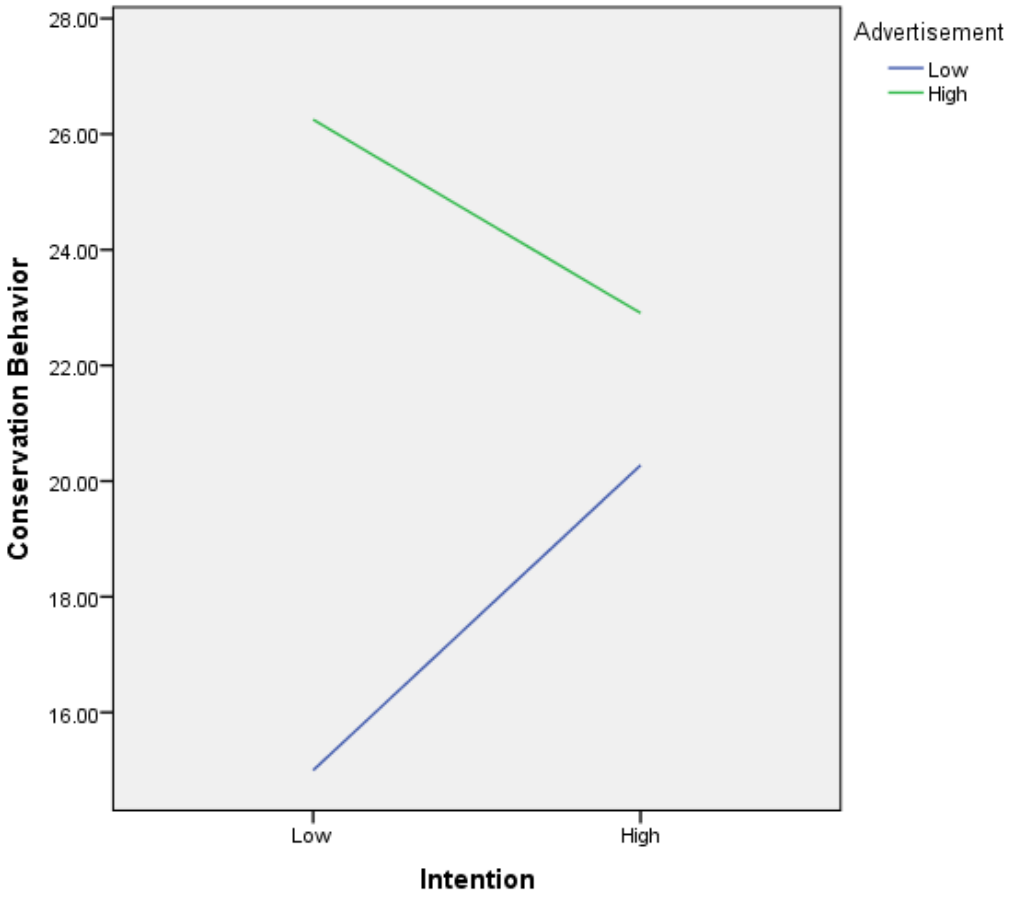

Figure 4.2
Moderating Effect of Green Advertisement on Conservation Behavior

Table 4.33 shows the moderating effect of green advertisement between intention to green consumerism and recycle behavior.

Table 4.33
Results of Moderator Effect on Recycle Behavior

Variables	**Standard Beta Step 1**	**Standard Beta Step 2**	**Standard Beta Step 3**
Predictor variable: Intention	.364*	.288*	1.143*
Moderating variable: Green advertisement		.163*	1.052*
Interaction terms: Intention *green advertisement			-1.501*
R^2	.132	.153	.179
Adjusted R^2	.130	.149	.172
R^2 Change	.132	.021	.026
F	58.664*	9.419*	11.934*

Note: Significance levels *p<.001

In step 2, standardized green advertisement (moderator) was entered into the equation in order to gauge the impact of the moderator. The R^2 increased from 13.2% to 15.3% indicating a change of 2.1% which was significant at $p < .001$. Next in the third step, the interaction term was entered into the model and the additional variance explained by the interaction term (15.0%) was evidently significant at $p < .001$, implicating that there was a quasi moderating effect of green advertisement on the relationship between intention to green consumerism and recycle behavior. Furthermore, R^2 Change was .026 when the interaction term was added (model 3) to the predictor and moderator variables. This change was significant, $F(3,386) = 27.758$, $p < .001$.

Figure 4.3 illustrates a mix relationship which implies that green advertisement strengthened the relationship between intention to green consumerism and recycle behavior for the low group of green advertisement but however showed a weaken

relationship for the high group of green advertisement.. Furthermore, the impact of green advertisement on intention to green consumerism is much lower than the opposite group. Consequently, this finding indicates that green advertisement can act as a better moderator to the relationship between intention and recycle behavior among consumers with low effect of green advertisement.

Therefore, the graphical lines seems not to be in tandem with the hypothesis which stated that positive relationship between intention and recycle behavior will be stronger when impact of green advertisement is high. However, the relationship between the study variables appears to be stronger when green advertisement is low. Hence, in this case, green advertisement can be considered as a quasi moderator to the hypothetical relationship. With respect to this conclusive remark, hypothesis H5c is supported.

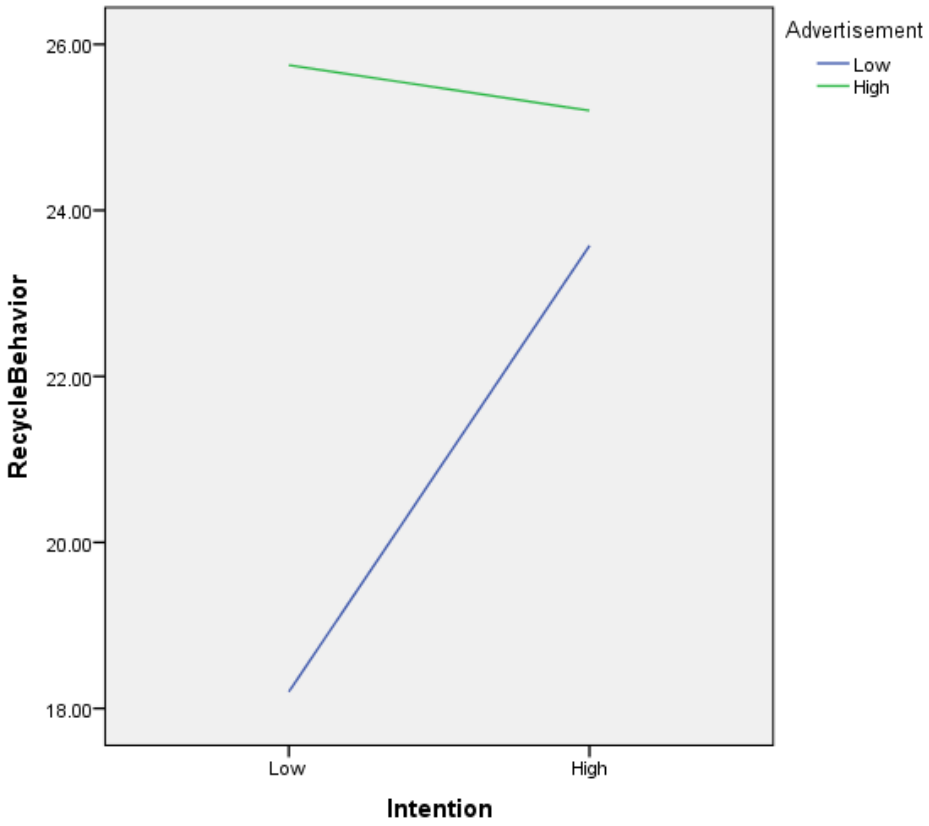

Figure 4.3
Moderating Effect of Green Advertisement on Green Recycle Behavior

The outcome of this analysis answered the following hypotheses as summarized in Table 4.34.

Table 4.34
Moderation Summary

Hypothesis		Decision
H5a	Green advertisement significantly moderates the relationship between intention to green consumerism and green purchase behavior.	**Not Supported**
H5b	Green advertisement significantly moderates the relationship between intention to green consumerism and conservation behavior.	**Supported**
H5c	Green advertisement significantly moderates the relationship between intention to green consumerism and recycle behavior.	**Supported**

4.4 Chapter Summary

This chapter presented the results of data analysis. Data obtained from 386 respondents were used in a series of analysis in this study. The demographic profile of the respondents was presented at the beginning of this chapter. A total number of 91 questions were asked to the participants. Data was screened and reduced by running exploratory factor analysis and was followed by the reliability analysis. Green consumerism behavior was then operationalized as a multivariate: purchase behavior, conservation behavior and recycle behavior. All the other factors were moral norm, environment concern, perceived behavioral control, perceived knowledge, perceived environmental responsibility, subjective norm, intention to green consumerism and green advertisement. The Cronbach alpha values for all the items were higher than .60, which found all the measurements of the variables were above the recommended value suggested from the literature and by Sekaran (2003). The correlation analysis verified that multicollinearity did not exist in the study as all the correlation coefficient was less than r=.08 for all the variables. The hierarchical regression analysis for mediator effect supported none of the 18 hypotheses presented in this study. Finally the regression model for moderator effect supported two out of the three hypotheses presented in this study. A summary of the research questions, research objectives, hypotheses and results is shown in Table 4.35.

Table 4.35
Summary of the Research Questions, Research Objectives, Hypotheses and Results

Research Question	Research Objective	Hypothesis	Result
Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism	To determine if there is a relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism	H1a: There is a positive significant relationship between moral norm and intention to green consumerism	**Supported**
		H1b: There is a positive significant relationship between environmental concern and intention to green consumerism	**Supported**
		H1c: There is a positive significant relationship between perceived knowledge and intention to green consumerism	**Supported**
		H1d: There is a positive significant relationship between perceived environmental responsibility and intention to green consumerism	**Supported**
		H1e: There is a positive significant relationship between subjective norm and intention to green consumerism	**Supported**
		H1f: There is a positive significant relationship between perceived behavioral control and intention to green consumerism	**Not Supported**

Table 4.35 (Continued)

Is there a significant relationship between intention to green consumerism and green consumerism behavior	To determine if there is a significant relationship between intention to green consumerism and green consumerism behavior	H2a: There is a positive significant relationship between intention to green consumerism and green purchase behavior	**Supported**
		H2b: There is a positive significant relationship between intention to green consumerism and green conservation behavior	**Supported**
		H2c: There is a positive significant relationship between intention to green consumerism and recycle behavior	**Supported**
Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior mediated by intention to green consumerism	To determine if there is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior mediated by intention to green consumerism	H3a: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green purchasing behavior mediated by intention to green consumerism	**Not Supported**
		H3b: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green conservation behavior mediated by intention to green consumerism	**Not Supported**
		H3c: There is a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and recycle behavior mediated by intention to green consumerism	**Not Supported**

Table 4.35 (Continued)

Is there a significant relationship between perceived behavioral control and green consumerism behavior	To determine if there is a significant relationship between perceived behavioral control and green consumerism behavior	H4a: There is a positive significant relationship between perceived behavioral control and green purchase behavior	**Supported**
		H4b: There is a positive significant relationship between perceived behavioral control and green conservation behavior	**Supported**
		H4c: There is a positive significant relationship between perceived behavioral control and recycle behavior	**Supported**
Does green advertisement moderate the relationship between intention to green consumerism and green consumerism behavior	To examine if green advertisement moderates the relationship between intention to green consumerism and green consumerism behavior	H5a: Green advertisement significantly moderates the relationship between intention to green consumerism and green purchase behavior	**Not Supported**
		H5b: Green advertisement significantly moderates the relationship between intention to green consumerism and green conservation behavior	**Supported**
		H5c: Green advertisement significantly moderates the relationship between intention to green consumerism and recycle behavior	**Supported**

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.0 Introduction

This final chapter discusses the research findings and draw conclusions out of them. In addition, interpretation of the results and their theoretical and practical implications of green consumerisms behavior were also substantially elaborated. The chapter is divided into several sections: recapitulation of the study findings, discussion, implication of the study, limitations of the study, recommendations for future research and finally, the conclusion of the study.

5.1 Recapitulation of the Study Findings

The motivation of this study was to determine the factors that contribute to green consumerism behavior among Malaysians. The three main objectives of this study were: (1) to determine the factors that contribute to intention to green consumerism behavior; (2) to determine the mediating effect of intention on green consumerism behavior on factors contributing to green consumerism behavior and (3) to decide if there is a moderating effect of green advertisement on the relationship between intention to green consumerism and green consumerism behavior.

Six independent variables were introduced in the framework of this study namely moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control. Intention to green

consumerism was the mediator variable between the aforementioned variables and the dependent variable, green consumerism behavior. The moderator, green advertisement was adapted from Rahbar and Abdul Wahid (2011) and Abd Rahim *et al.* (2012).

The sampling frame for the present study was consumers who frequented hypermarkets and supermarkets in Penang island and the population size was 1,611,100 residents in Penang. Data was collected from 420 respondents of which 387 were useable from visiting 12 outlets of hypermarkets and supermarkets on the island. The self-administered was distributed everyday over a week at each outlet and it took approximately three months for data collection.

Ultimately the findings of the present study answered the following research questions as stated in chapter one as follows:

1. Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism?
2. Is there a significant relationship between intention to green consumerism and green consumerism behavior?
3. Does intention to green consumerism mediate the relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior?

4. Is there a significant relationship between perceived behavioral control and green consumerism behavior?
5. Does green advertisement moderate the relationship between intention to green consumerism and green consumerism behavior?

To answer these research questions, 18 hypotheses were postulated. The results from the analysis as presented in Chapter 4 demonstrated positive and moderate relationship between the six dependent variables (moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control) and intention to green consumerism as indicated in the correlation analysis using Pearson correlation. Moreover, the correlational relationship between intention to green consumerism and the dependent variable, green consumerism behavior (with the three dimensions, namely, purchase behavior, conservation behavior and recycle behavior) also showed a positive and moderate relationship.

Subsequently, multiple regression analysis was run to test the hypotheses and the results showed that 12 hypotheses were supported (H1a, H1b, H1c, H1d, H1e, H1f, H2a, H2b, H2c, H4a, H4b, H4c). Hierarchical regression analysis was run next to test the moderation effect of green advertisement on the intention to green consumerism and green consumerism behavior gap. The results presented two supporting hypotheses (H5b and H5c) as moderator.

5.2 Discussion of the Findings

Chapter One of this present study stated five research questions and this segment provides discussion on each of the research questions presented in this research. The empirical investigation on the relationship between the six independent variables (moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control) and the mediation between these aforementioned variables and green consumerism behavior have been presented in the earlier sections, the detail discussion and critical evaluation of the findings are addressed as follows. The present study presented 18 hypotheses to answer the five research questions. The following discussions concentrate on each of the research questions of this present study.

The first research question of this present study is: *Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and intention to green consumerism?*

To answer this question all the six independent variables (moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm and perceived behavioral control) was regressed against intention to green consumerism. The results showed all the independent variables except one (perceived behavioral control) showed a positive significant relationship.

Moral norm explains the personal obligation one feels about issues that they have to confront or face every day in their life. How a person translates the importance of his surroundings, whether it is polluted or not, whether the environment is hazard free to live in, or whether the air is clean is a very personal subject to the person. This moral obligation differs from one to another; some might see the present problem faced in the degradation of the environment as not a personal issue but as a global view while another find it otherwise. In this study, moral norm showed a significant relationship with intention to green consumerism. This finding from the present study supports similar studies on environmental behavior done in China by Chan (2001) and in Egypt by Mostafa (2006). However, in the local environment, here in Malaysia, there were contrasting outcomes, Tan and Lau (2010) reported that moral norm has a significant relationship with intention in their study but on the contrary, Ramayah *et al*. (2010) concluded that self-enhancement values did not positively relate to intention of green products. Anyhow, Malaysians are generally compassionate people, we feel for others and as such we do care for our surroundings. More and more people are aware of the environment and the happenings of their surrounding as the age of internet has helped to spread the deterioration of the environment. The younger generation are more akin to global warming; greenhouse effects; the necessity to keep pollution down; the effects of open burning and such hence the high moral obligation to keep the environment safe for the next and future generations to come.

The second independent variable, environment concern, showed a positive significant relationship when regressed with intention to green consumerism. Attitude

towards the environment or the concern for the environment has always been a predictor to intention (Aman, Harun & Hussein, 2013; Arvola *et al.,* 2008; Bamberg, 2003; Godin, Conner & Sheeran, 2005). The relationship between environmental concern and intention to green consumerism is statistically significant in this study and thus supporting literature on green intention. This finding can be explained as following. The positive attitude to protect the environment has been greatly influenced in the last couple of decades in Malaysia. More and more campaigns to save our forest, hills, the flora and fauna has been actively promoted and demonstrated by the people and this concern has been positively translated in the present study. Importance and convenience were regarded as two important factors to save the environment, more ecologists have emerged, public universities have jumped on the bandwagon to offer environmental sustainability courses and degrees, thus priming ecologically conscious individuals.

The third independent variable, perceived knowledge, showed a positive significant relationship when regressed with intention to green consumerism. Knowledge is a big factor in decision making. Consumers generally make their decision based upon the information on the goodness of the products they intend to purchase or on the activity they intend to act on. Scholars had mentioned that to determine a certain behavior of consumers, both descriptive and injunctive normative information is required to have a significant effect on a consumer's behavior (Aman, Harun & Hussein, 2013; Cialdini, 2003; Edwards & Fasolo, 2001; Vlek & Keren, 1992). People want to know if whatever they are doing will have a positive outcome for the environment (descriptive norm) and they are also aware of the consequences of their actions (injunctive norm). The

knowledge they acquired from whatever medium they come across, whether it is the mass media, newspapers, government policies, or lessons from learning institutions, helps them to analyze their behavior outcome that would either harm or help the environment. This present study's finding also supports literature that showed a significant relationship between perceived knowledge and intention (e.g. Chan, 1999; Darby & Obara, 2005; Grunert, 1993; Hines *et al.,* 1987) and between perceived knowledge and behavior (e.g. Nanere *et al.,* 2008). The reason behind a statistically significant relationship could be contributed to the effort by the Malaysian government and environmentalist in providing exposure on our ecology and conservatism to the everyday people. Information is easily available and accessible. Besides, the internet has made information gathering as an easier task to apprehend these days.

The next independent variable that was regressed against intention to green consumerism, perceived environmental responsibility, also resulted in a statistical positive significant value. Feeling responsible towards the environment is also influenced by the surroundings and the social norm of the people in the location. If the social culture of the group has a strong awareness of ecological need, then the person in the group will have an equal amount of awareness of conservation of the environment but at the end of the day, the sense of responsibility is still uniquely dependent on the individual. It is observed generally people tend to be more responsible as we can see there are more active campaigning for a cleaner, healthier and greener Penang in specific and Malaysia in general. The findings of this study showed a statistical significant relationship between

perceived environmental responsibility and intention to green consumerism which is also supported by the literature (e.g. Kaiser *et al.,* 1999; Lee, 2008).

The fifth independent variable, subjective norm, showed positive significant relationship when regressed with intention to green consumerism. Literature substantiated that parents, peers and friends' influence have a considerable impact on the behavior of an individual though the intensity of impact from each group differs from one person to another (e.g. Lee, 2008; Robinson & Smith, 2002; Sparks & Shepherd, 1992). People have a sense of belonging; they have this need to fit into society. Maslow's hierarchy of needs explains this phenomenon well. Societal acceptance is a paramount factor to some people and hence they do what their friends or peers do. Likewise, to be environmentally conscious would have been a collective decision of the group that the person belongs to and the need to be accepted as one of them could be a major factor in the decision to be pro-environment. This finding is in congruent with literature that showed that subjective norm has a significant relationship with intention to green consumerism (e.g. Childers & Rao, 1992; Robinson & Doss, 2011; Sheth, Mittal & Newman, 1999).

The final independent variable, perceived behavioral control, did not show a significant relationship when regressed against intention to green consumerism. In accordance to the theory of planned behavior, perceived behavioral control has (1) a significant relationship with behavior intention, (2) a significant relationship with behavior mediated by intention and (3) a direct relationship with behavior. This research finding failed to support the first two rules of the theory, i.e. the relationship with

behavior intention and relationship with behavior mediated by intention. These findings are not with accordance to the theory of planned behavior and past research with showed a significant relationship with intention and perceived control behavior (e.g. Amireault *et al.*, 2008; Sheeran, 2002; Sheeran, Trafimow & Armitage, 2003). This goes to show that Malaysians lack the empathy to be environmentally conscious, they do mind to have to put effort in to be environmentally conscious. The self-efficacy in believing they can make a difference is not seen amongst Malaysians. Further to this, the findings of this present analysis is in tandem with Ng and Paladino (2009), Kaiser (2003), Schahn and Holzer (1990) and Geller (1981) who also did not find any significant relationship between perceived behavioral control and intention.

This study substantiated six variables (moral norm, environmental concern, perceived knowledge, perceived environmental responsibility and subjective norm) to be predictor to intention to green consumerism. The respondents in the survey showed statistical significance with the independent variables explaining 50.5 percent (R^2= .505) of the variance of behavioral intention. The behavioral intentions of the respondents were consistent with the findings from literature (e.g. Albayrak, Caber & Aksoy, 2010; Chan, 2001; Chiou, 1998; Schlegelmilch, Bohlen & Diamantopoulos, 1996).

The second research question of this present study is: *Is there a significant relationship between intention to green consumerism and green consumerism behavior?*

The theory of planned behavior established that intention is the key predictor of behavior (Ajzen, 1991) and this was supported by literature that showed a significant relationship between intentions in predicting behavior (Bentler & Speckart, 1979; Downs & Hausenblas, 2005; Fredericks & Dossett, 1983; Godin & Kok, 1996; Hagger, Chatzisarantis, & Biddle, 2002). The findings of this present study supports the existing literature, intention to green consumerism explained 18.2 percent (R^2=.182) of the variance of purchase behavior, 11.8 percent (R^2=.118) of the variance of conservative behavior and 17.1 percent (R^2=.171) of the variance of recycle behavior. In congruent with D'Souza, Taghian and Lamb's (2006a) finding of the consumers' intention to purchase environmentally safe products that transformed to actual purchase even with the fact that they have to pay more for green products, the respondents in this study too made the same commitment to their intention and pro-environmental behavior. Nonetheless, the findings of this study also showed that the intention to conserve energy and water did translate into action which is in line with the responses from Portuguese consumers (do-Paço & Raposo, 2009). The positive significant relationship of intention and behavior in this study can be attributed to the fact that consumers have greater experience in choosing what is environmentally friendly and to reject what harms the environment. Besides consumers these days might expect the products in the market to meet their expectations and suppliers are trying their best to comply to the needs and wants of these environment conscious consumers. The formation of pro-environmental groups too has contributed into a positive group norm, and as a collectivist society, we tend to do things together. Furthermore, it has become easier these days to come across more environmentally friendly products, from energy saving bulbs to organic food, hence the greater availability

helped to transform intention to action. Finally consumers are more equipped with knowledge these days, whatever they need to know on the environment, on the product or the consequences of using harmful products is easily obtained from the internet.

The third research question of this present study is: *Is there a significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior mediated by intention to green consumerism?*

The mediation analysis followed the guidelines of Baron and Kenny (1986) and the results of the data analyzed showed that there is no significant relationship between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral control and green consumerism behavior mediated by intention to green consumerism. Based on Ajzen's (1991) work, intentions were supposed to capture the determining factors that would influence behavior, intention was supposed to demonstrate how hard people were willing to put in effort to exert to perform the behavior. On the contrary, Abraham and Sheeran (2000) recounted that intention only measures less than 25% of behavior and they argued that this was caused by an overestimation on the nature of the relationship between intention and behavior and thus creating a substantial gap between intention and the subsequent behavior (Abraham, Sheeran, Norman, Conner, de Vries & Otten, 1999). Besides, it was purported that non-significant findings were hardly published into journals, hence the existence of publication biasness (Luszczynska, Cao, Mallach, Pietron, Mazurkiewicz &

Schwarzer, 2010). The above findings were iterated by Sheeran (2002) whose review indicated less than 50% of participants with positive intention failed to translate the intention to intended behavior. Scholz, Nagy, Göhner, Luszczynska and Kliegel (2009) further attested that people often do not behave according to their intentions. This was further and a similar review of consumer behaviour indicated that intention failed to perform into action in less than 62% of cases (Young, DeSarbo & Morwitz, 1998).

Corroborating from past research, the findings of this present study did not reflect the mediation effect of intention to behavior. Moral norm was not a predictor in this present study to green behavior as opposed to literature that showed that showed a significant relationship (McCarty & Shrum, 1994; Poortinga, Steg, & Vlek, 2004; Stern, *et al.,* 1995). The contrasting finding from literature and the present study could be explained that Malaysians do regard it as their personal obligations to care for the environment; they have the intention but could not materialize the intention to behavior. This could be because they are not motivated by the intrinsic moral duty to have positive outlooks on being an environmentally conscious consumer. Furthermore the present study also did not find any statistical significance in the mediating role of intention between environmental concern and green behavior. This finding is in line with past research done in Malaysia which showed a non-significance relationship between environmental concern and green behavior mediated by intention (Ramayah *et al.,* 2010; Tan & Lau, 2010). The reason for this could be because the consumers did not see concern for the environment and being responsible for the environment is not part of their problem. They might regard these issues to be greater than they can cope and thus it is the

government's responsibility to care for the environment. It could also be that the seriousness of the environmental problems around them had not reached a dangerous level to activate awareness and self-interest to salvage and sustain their environment.

The third variable perceived knowledge also showed a non-significant relationship relation to green behavior mediated by intention. This outcome reiterates literature which showed that environmental knowledge has minimum impact on pro-environmental behavior when other factors are more effective in predicting behavior (Abdul Wahid, Rahbar & Tan, 2011; Kaiser & Fuhrer, 2003). Next the results of the analysis showed that perceived environmental responsibility did not show any significance relationship to green consumerism behavior with intention as the mediator. This finding is in contrast with the work of Kuh (2011), Babcock (2009) and Fraj and Martinez (2006) who found environmental responsibility to be a strong predictor to pro-environmental behavior. This contrasting result obtained from the present study as compared to past studies can be factored to the perception of ownership. Who owns the responsibility to the environment? Malaysians should look at environmental responsibility as theirs, however, it seems that ownership on the environment is seen as the responsibility of the government and municipality.

Subjective norm was also not a predictor of green behavior mediated by intention. This finding is supported by Gupta and Odgen (2009) who found subjective norm as a non-predictor of behavior. Nevertheless, this present study was in congruent with a study held in Penang by Abdul Wahid *et al.* (2011) which indicated the self-identity of

Penang's green volunteers did not reflect in their green behavior. The study found ecological effect to have a negative and non-significant relationship with green behavior. In this present study, it is concluded that the six predictors (moral norm, environmental concern, perceived behavioral control, perceived knowledge, perceived environmental responsibility and subjective norm) also showed a non-significant relationship with green behavior whilst mediated by intention.

More to the point, this study illustrated showed that moral norm, perceived knowledge and subjective norm explained 27.9 percent (R^2=.279) of the variance of purchase behavior and 28.1 percent (R^2=.281) of the variance of purchase behavior when mediated by intention (R^2 Change=.002). As for conservation behavior, moral norm, environmental concern and subjective norm explained 22.1 percent (R^2=.221) of the variance of conservation behavior and 22.4 percent (R^2=.224) of the variance of conservation behavior when mediated by intention (R^2 Change =.003). Finally for recycle behavior only moral norm explained 28.7 percent (R^2=.285) of the variance of recycle behavior and 30.0 percent (R^2=.300) of the variance of recycle behavior when mediated by intention (R^2 Change=.015). As the R^2 Change for all three mediation showed less than 20 percent change and thus it was concluded there was no significant mediation effect of intention between the variables and green consumerism behavior.

A recent study in Malaysia by Mohd Yusof, Bariam Singh and Abdul Razak (2013) which corresponds to the findings of this present study concluded that moral value, environmental responsibility and perceived knowledge were vital predictors of their

behavior intention. Besides that, their findings also showed that consumer's perception of environmental advertisement had a significant effect on behavior intention. Further supporting the present study is Rise, Sheeran and Hukkelberg (2010) research which showed that moral norm (value) environmental concern (attitude) and subjective norm has enhanced the prediction of intention and behavior. To summarize the mediation effect, it can be concluded the findings of this study supports the theory of planned behavior and literature in green intention and behavior.

The fourth research question of this present study is: *Is there a significant relationship between perceived behavioral control and green consumerism behavior?*

The theory of planned behavior shows that perceived behavioral control has a direct relationship with behavior and the present study developed hypotheses to answer the fourth research question to test the direct effect.

A regression analysis was run and the results from the analysis showed that there is a statistically positive significant relationship between perceived behavioral control and green consumerism behavior. In accordance to the theory of planned behavior, perceived behavioral control has (1) a significant relationship with behavior intention, (2) a significant relationship with behavior mediated by intention and (3) a direct relationship with behavior. This research finding however did not support the first two relations i.e. the relationship with behavior intention; and relationship with behavior mediated by intention. These outcomes from the present study can be interpreted by stating that

Malaysian's see the easiness of performing a pro-environmental related behavior as a task that is easy to be carried out. The contribution factor to this is that people in this generation were more exposed to the simple steps that they can take and do to conserve the environment. Readily available and accessible information on what to do as a pro-environmentalist were made easy for the ordinary people to follow. The steps to take and be a green consumer is made effortless, and once these steps were planted into the minds of the people, their perception of the easiness of the task would materialize and hence the inclination to be pro-environment increases, as well their action to be pro-environment. Eventually, people observe green activities as not a burden but instead something easy to do. The finding of this study was also supported by literature in the past that showed a significant relationship between perceived behavioral control and green behavior (e.g. De Cannière *et al.*, 2009; Robinson & Smith, 2002; Straughan & Roberts, 1999).

The fifth and final research question of this present study is: *Does green advertisement moderate the relationship between intention to green consumerism and green consumerism behavior?*

The role of advertisement had always been relied on by marketers if they want their products and services to be fast known to consumers as the competitive world of marketing is always hyper. It was perceived that the critical role of green advertisement would bridge the conversion of intention to purchasing green products to purchasing the green product. Three hypotheses were developed to analyze the role of green advertisement as the moderator to intention and behavior of green consumerism:

H5a: Green advertisement significantly moderates the relationship between intention to green consumerism and green purchase behavior.

H5b: Green advertisement significantly moderates the relationship between intention to green consumerism and conservation behavior.

H5c: Green advertisement significantly moderates the relationship between intentions to green consumerism and recycles behavior.

Hypothesis H5a was not supported in this study as the results of this research showed that green advertisement was not a moderating factor in translating intention to behavior when it comes to making purchase decisions. Several possibilities can be discussed on why green advertisement did not show any significant relationship when it comes to intention and purchasing green products. One of the reasons that can be explained is the lack of green advertisements in Malaysia when it comes to green product sales. The marketing of green products is not done aggressively in Malaysia for example there is a lack of information on organic products and benefits of green products being promoted vigorously in print media nor electronic media. Besides that, marketers in Malaysia are still lacking in targeting this segment of people who wants to live a green lifestyle, the focus by marketers are however more towards the conventional products. This is evident because not all the hypermarkets or supermarkets in this country have a section for organic products and even if the hypermarket or supermarket has one, it is normally not a big section as compared to the conventional products. Furthermore, the prices of green products are much higher compared to non-organic products and for big families, it is not economical to buy organic products as the cost of purchasing could be

double or more when compared to buying the same amount of conventional produce. The findings of this study mirror that of Kangun and Polonsky's (1995) work that found that there was no understanding towards green advertising or green labels that was attached as eco-labels to products by consumers. Consumers either do not reckon the benefits of consuming green products or their perception of green products were way too expensive for them to purchase. Green advertisement basically failed to make any difference in the purchasing decision of the consumers.

Another reason of the failure of green advertisements could be explained by the lack of endorsements from celebrities, according to Miciak and Shanklin (1994) a celebrity endorsement on a product could stimulate interest and familiarity of a product and once a consumer's familiarity of a product increases, their confidence on the product increases and thus their intention increases and hence the purchase of the product. This was further supported by Chi, Yeh and Tsai (2011) who explored the effectiveness of advertising endorsers and concluded that advertising endorsers significantly affected purchase intention of the consumers but in Malaysia, green advertisements using celebrities to promote is lacking in number and stature.

However, past literature had presented opposing findings when compared to this study, as green advertisement had shown a significant relationship with intention and behavior. According to Baldwin (1993), environmental advertisements do help to form a consumer's trust on the product and eventually translate this trust to purchase of green products. Similarly, other scholars too have found green advertisement to be a positive

effect in guiding consumers to purchase green products (Chan, 2004; Chase & Smith, 1992; D'Souza *et al.*, 2006; Davis, 1993; Rahbar & Abdul Wahid, 2011). The contrasting finding from literature and this present study is concluded by the researcher was due to the difference in culture found in different part of the world. Besides that, the perception on the effectiveness of advertisement on purchasing green products by the respondents of this study is differing as compared to respondents in different parts of the world.

Nevertheless interestingly the outcome for both hypotheses H5b and H5c was supported in this present study. The moderating effect was statistically significant for both recycle activity and conservation activity. As supported by a more recent study by Mohd Helmi, Ros Zayanah, Fauziah and Lyndon (2012) on Malaysian's awareness and perception of green living through the use of advertising, showed the respondents in the study had positive concern about the environment where the respondents stated that they would willingly adopt a green lifestyle when exposed to persuasive green messages. The authors further added that the perception that the level of green awareness in Malaysia is still low but nonetheless, they were very positive that green advertising/campaigns were effective in educating and encouraging Malaysians to go green.

These positive outcomes from both hypotheses H5b and H5c show that Malaysians are more agreeable to change into a green lifestyle when it comes to recycling and conserving habits. They are willing to recycle and conserve the environment and one of the factors that drove them to a green lifestyle is the role of green advertisement that encourages people to recycle, reuse and reduce. Especially in the state of Penang, the

state government's drive to enforce green living is seen everywhere, the message "Cleaner & Greener Penang" can be noticed almost all over the island. People in general belief that recycling and conservation habits would save the environment and they are motivated to lead a green lifestyle. As per the findings of Mat Said, Ahmadun, Paim and Masud (2003) on Malaysian consumers, they stated that Malaysians viewed environmental advertisements as a point to increases their knowledge about green products and mass media, television and newspapers are a few of the major media in Malaysia for consumers to gather their information. Studies do show that generally the Malaysian public are influenced by green marketing tools and their decision making process to be pro-environment are subjective to green advertising, green labels and green branding (Mat Said *et al.*, 2003; Mohammad Reza, Mohammad Sadeghi, Amirreza, Norsida & Hamidreza, 2012; Rahbar & Abdul Wahid, 2011). Therefore it was only natural that consumers in this study who were exposed to elements of green advertisements to have their intention to be a green consumer converted to be a green consumer.

5.3 Implication of the Study

This study sets out to understand whether the consumer's value orientations explain their environmentally conscious behaviors, including their responses to environmental claims in advertising and intentions to green consumerism. The purpose of this research was to determine the behaviors that consumers experience when formulating an intention to green consumerism, and to determine if green advertisement expectations of consumers are realistic.

5.3.1 Practical Implications

The findings of this study revealed that six factors influenced consumer's intention to green behavior: moral norm, subjective norm, perceived behavioral control, environmental concern, perceived environmental responsibility and perceived knowledge, which are all based on the individual's own personal values and sphere. How then does this result implicate the study? To answer this question, it would be pertinent to refer to a seminal paper by Samuelson (1938) which stated that the approach to consumer theory says that consumers actually follow a preferred pattern in his behavior, especially when it comes to purchasing. The conclusion from the analysis of this study showed that, a consumer's purchasing pattern could actually be based by firstly his knowledge of the product and the impact it might cause to the environment, secondly the perception on how easy or difficult the task is going to be to purchase certain items, thirdly his own personal belief on his purchasing decision to see whether his purchasing actions have any negative impact to the environment and finally the opinion of others on his purchasing decision, on how his family and friends would say about the purchasing choices that he had made. Based on the above, practitioners such as green marketers and policy makers, can use this knowledge to package their product to fulfil the requirements of the users, that is, provide sufficient information to enrich the purchasers' knowledge on the conception till the disposal of the product to be environmentally friendly. It would be important for green marketers to engage this information to their customers.

Besides that, this present study also found that green advertisement does aid in converting intention to behavior. These findings specifically would help marketers to change their marketing strategy as to focus more on the four factors that influence behavior. Marketers would be able to give importance in strategizing their approach in encouraging consumers to embark on their green journey. It is clear that consumers need to have sufficient information to make good decisions and the route to obtain green products and to live a green lifestyle should be made easier and accessible. Besides that, the state government of Penang, can now vigorously campaign green living via advertisements and more social media exposures. This present study does show that green advertisement as a moderator does have an impact gapping intention to behavior, especially conservation behavior and purchase behavior. As Penang truly wants to move into the greener, healthier and cleaner island, it is possible to bring back the shine to the Pearl of the Orient by tackling the people here by using advertisements and subtle messages on green lifestyle and sustainability.

This study had used three measurements to operationalize green consumerism behavior, i.e. purchasing behavior, conservation behavior and recycle behavior. It was hoped that this study would help to recognize from the Malaysian context which among the three measurements actually define the green behavior of Malaysians. From the findings, it was noted that all the three measurements carried equal weight in distinguishing the factors that influence intention to green consumerism and green consumerism behavior. The chosen sample was also generally from those who actually make household purchase decisions. As such, analysis of the relationship between

specific aspects of the chosen variables with green consumerism intentions does provide richer data for marketers to make more informed decisions and strategies their marketing.

This study had also helped in profiling consumers when it comes to their intention and behavior as a green consumer. As elucidated by Lee (2008), an adult consumer is still looking for approval and acceptance from his peers and family to be acknowledged as a green consumer. An adult is motivated to perform better when the recognition as being environmentally responsible is given as there is always a need for self-identity and self-focus as a conscientious individual (Shaffer, 1994). This study had to a certain extend profiled the consumers who frequented hypermarkets and supermarkets in Penang when it comes to their intention and green behavior. With this profiling, it would enable the local authorities and/or green marketers to target the appropriate age groups to launch their go green propaganda. The shopper profile falls predominantly in the older age range (above 40 age group) which is more than 60% of the respondents, and thus, with this knowledge, green advertisements targeting this age group should be increased as the impact of these green advertisements do help in translating intention to behavior.

The role of green advertisement to bridge intention to behavior had been of the objectives of this study and the findings showed that green advertisement did not have any significance in influencing a consumer from their intention to purchase green products to actually purchase them. However, the findings showed that green advertisement did have an impact in the recycling and conservation habits of the consumers. The outcome of this is the creation of opportunity for marketers to change

their marketing strategy of using green advertisements to promote their green products. Manufacturers developing green market need to aggressively promote and find new venues in the Malaysian context to promote their products. By focusing more on consumers' needs besides understanding why there is a gap between intention and purchasing green products would greatly facilitate these manufacturers of green products to fully understand consumer's psychology in purchasing green. It is suggested from the findings of this study the right mix of eco-friendly products and services, advertising and eco-labeling, and sales and marketing expertise is needed to target and attract consumers who may be willing to buy green products. Green manufacturers and marketers should identify these segmented consumers and design and market accordingly with suitable branding and price levels. Furthermore the study also suggests that retailers might try to change consumers' perceptions of higher prices to affordable prices using marketing strategies (e.g. discount, advertisement, new product development), which would make consumers believe that they are capable to buy green products. Nevertheless the findings of this study will be useful to local organizations of green firms who are interested to know the underlying behavior of prospective green purchasers of their products.

In practical terms, the findings of this study offer suggestions for marketers and public policy makers who promote green products or programs for pro-environmental behavior. This research helped in contributing to the knowledge of marketers in identifying significant psychographic and behavior to be employed in their marketing strategy and hence enabling marketers to define their target and segment of the population. All in, the results of this study also advocate the importance to increase

consumer awareness of the environmental issues and enhance the perceived efficacy of their contribution to the environment, as this study showed an almost a non existence support on environmental concern and environmental responsibility, henceforth as targeting strategy, it would be suggested that promotional messages on the environment be tailored to people to emphasize their role and participation in improving the state of the environment for the present and future society's well-being. As for those who are already environmentally concerned, the reinforcement of their involvement in sustaining the environment might be effective for promoting to them environmentally friendly purchases and consumption and hence leading a healthier life or a green life.

5.3.2 Theoretical Implications

From the theoretical point of view, using the TPB construct is a sound approach for marketers who wish to gauge the insights of intentions and behaviors of consumers in the context of green marketing. Literature had suggested that models predicting buying behavior should use all three categories of variables: the attitude to intentions, the buying intentions, and repeated past behavior. With respect to the three existing components of TPB (environmental concern (attitude), perceived behavioral control and subjective norm) and the introduction of three new variables to form the framework of this study (moral norm, perceived knowledge and perceived environmental responsibility) appeared to be relevant indicators of green consumerism intention and behavior. In future, a consumer research aimed at the predicting green behavior should pay close attention of all the measurement of that was used in the framework of this study as all the independent variables had statistically significant relationship with intention to green

consumerism. Furthermore, it is advisable to present green behavior as a multivariate as this study showed that each of the components of green behavior (purchase behavior, recycle behavior and conservation behavior) had different outcomes during statistical analysis. The inclusion of green advertisements as a moderator to the model had also added better perspective on bridging the translation between intention and behavior of the TPB model.

In conclusion, green living is more widespread now and is continuing to have an influence on global business, organizations and governance. Multinational corporations embarked on green living as part of their corporate social responsibility because their business activities have social, ethical and environmental impacts to the nation. Probably one of the most critical issues in green marketing is the factor dealing with the perception of individual benefit for most consumers. From the findings of this study, moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, perceived behavioral control and subjective norm showed a significant relationship in predicting intention to green consumerism. These factors are tied closely to the individualism perception of the consumer, the challenge therefore for green marketers is to increase the perception of individual benefits and that can be done by introducing a new element, emotional value, to green brands. As for green advertisers, the findings of this study showed that green advertisement does not show significance in moderating the relationship between intention and purchase behavior, thus it is pertinent that green marketers to look into increasing positive environmental messages to the public to entice them into purchasing green products. Both manufacturers and producers of green

products would benefit in their financial performances probably by presenting the pro-environmental attributes of their products and/or by designing advertising messages that take into account the perceptual and cultural characteristics of their target audience. Likewise, green marketers should extend their analysis on how to motivate environmental behavior and hence introduce those factors that would motivate pro-environmental behavior amongst the conservative consumers and encourage them to be green consumers.

5.4 Limitations of the Study

Some limitations of the present research must be addressed. This study was limited to the use of sample obtained from hypermarket and supermarket patrons in Penang. As such, their responses may not be representative of all consumers of different age brackets, residing in diverse geographic locations. While this impedes the generalizability of the study, it must be acknowledged that this is indeed a common limitation of most survey research which has constraints on time and budget.

A second limitation is that the data are correlational and the important factor in the interplay of shaping a pro-environmental behavior was not sufficiently identified. Questions arise on the issue of trust i.e. do people trust that others will cooperate because they themselves have internalized a norm about proper behavior? Are norms amongst the consumers in Penang were established because the state government is promoting a sustainable lifestyle hence influencing a larger share of the respondents to perform a new behavior? Besides that, under the conditions where people experience a behavioral

change that implies self-sacrifice, the norms for environmentally benign behavior may not be developed and this benign behavior was not investigated in this study.

The third limitation of this study was the predictive power of the respondent's intentions of green consumer on real behavior of green consumerism was not explored, which clearly leaves room for improvement of the model. It would have been better if this study had embarked on identifying of intention actually translates into actual behavior of green consumerism. The more likely explanation that was obtained from this study was that consumers' responses were reflecting the state of sustainable practices in the community where their homes were located. Thus, in regards to where the consumers reside, their personal commitment to sustainability was an extension of practices they were already engaged in which were being supported by their community. Therefore the consumers' intentions and behavior of green consumerism were not totally comprehended and therefore the need for further research to shed light on the above issues and other possible explanations of any commitment gaps.

5.5 Recommendations for Future Research

This study raised many questions and uncertainties that would benefit from further research. First of all, demographic variables were not taken into account as one of the predicting factors for intention to green consumerism and green consumerism behavior. There have been past research that has used demographic variables as one of the factors for intention in green consumerism. This research would benefit further with

the incorporation of a demographic variable besides the psychological and social variables that have been tested here.

A second suggestion would be to include trust, needs and motivation as independent variables as the present study suggests that there are important differences in the factors which affect various forms of green behaviors. Trust on the manufacturers and producers of green products could be a factor in predicting intention and behavior as trust reflects an individual's belief that his needs are fulfilled by the producers of the green products and thence environmental responsibility should be partly the accountability of the providers of the products (Zaheer & Venkatraman, 1995) and is viewed as a necessary condition for relational governance (McKnight, Cummings & Chervany, 1998). Other than that, McCarty and Shrum (1994) also found that the perception of inconvenience has a great influence on consumers' action; hence needs and motivation would be a predicting factor in green consumer behavior. It was seen in past research even when using social-environmental benefits as a major selling point, any product that requires a significant amount of compromise was not likely to succeed. Thus these two variables should be included in any future studies.

Furthermore, this study used purchase decision, conservation habits and recycling activities to gauge green consumerism behavior, and it is suggested that other dimensions such as consuming/purchasing organic products were used in the future to understand and fully comprehend the dependent variable. Besides the dependent variable, all the independent variables need more attention to establish the order of influence of the

various constructs as this study did not rank the impact of each factor onto the intention and behavior. The moderating variable besides using only green advertisement could have included eco-label and eco-branding to see the impact of the moderator on the model. Both eco-label and eco-branding had been used in past studies as part of green advertisement. Perhaps with the inclusion of these two dimensions, there might be a greater impact on the role of the moderator in predicting behavior.

In addition, this study suggests that there are important differences in the factors which affect various forms of green behaviors. Marketers need to target their message so that the barriers which are inhibiting the performers of specific behavior can be eliminated. Therefore, future research should better define what the influences are and how they may be altered. Moreover, a mixed method design could be adopted in the future as in the survey as a means for data collection and also in-depth interview conducted amongst the respondents to gather subjective responses. The importance of these subjective responses will assist in adding rich information for the study and besides that, most importantly, the subjective responses will serve to validate the findings attained from the survey.

Finally, a Structured Equation Modeling (SEM) can be suggested to analyze the measurement and structural model for quality and fit. The use of SEM to analyze data makes it possible to test individual relationship as well as provided an overall statistical measure of the fit of the model.

.

5.6 Conclusion

This study presented five research questions and to answer these questions, a total of 18 hypotheses were developed. The results of the analysis showed that moral norm, environmental concern, perceived knowledge, perceived environmental responsibility and subjective norm to have a significant relationship with intention to green consumerism. Only perceived behavioral control did not have any significant relationship with intention but instead showed a direct significant relationship to behavior.

However, the regression analysis on data obtained in the present study did not reveal any significant effect of intention as the mediator between moral norm, environmental concern, perceived knowledge, perceived environmental responsibility, subjective norm, perceived behavioral concern, and green consumerism behavior.

The three hypotheses for moderation effect yielded mixed results. The first hypothesis i.e. the moderation effect of green advertisement between intention and purchase behavior was not supported. However the other two hypotheses i.e. the moderation effect of green advertisement between intention and conservation behavior and the moderation effect of green advertisement between intention and recycle behavior resulted in a moderation effect.

Finally the present study successfully answered the three main objectives of this study, which were: (1) to determine the factors that contribute to intention to green consumerism behavior; (2) to determine the mediating effect of intention on green

consumerism behavior on factors contributing to green consumerism behavior and (3) to decide if there is a moderating effect of green advertisement on the relationship between intention to green consumerism and green consumerism behavior.

REFERENCES

Aaker, D., Stayman, D., & Hagerty, M. (1986). Warmth in advertising, measurement, impact and sequence effects. *Journal of Consumer Research, 12* (March), 365-381.

Abdul-Muhmin, A. G. (2007). Explaining consumers' willingness to be environmentally friendly. *International Journal of Consumer Studies, 31*, 237-247.

Abd Rahim, M. H., Ahmad Zukni, R. Z., Ahmad, F., & Lyndon, N. (2012). Green advertisement and environmentally responsible consumer behavior: The level of awareness and perception of Malaysian youth. *Asian Social Science, 8* (5), 46-54.

Abdul Wahid, N., Rahbar, E., & Tan, S. S. (2011). Factors influencing the green purchase behavior of Penang environmental volunteers**.** *International Business Management, 5* (1), 38 – 49.

Abraham, C. & Sheeran, P. (2000). Understanding and changing health behaviour: From health beliefs to self-regulation. In P. Norman, C. Abraham, and M. Conner (Eds.), *Understanding and changing health behaviour* (pp. 3-24). Amsterdam: Harwood.

Abraham, C., Sheeran, P., Norman, N., Conner, P., de Vries, N., & Otten, W. (1999). When good intentions are not enough: Modeling post-intention cognitive correlates of condom use. *Journal of Applied Social Psychology, 29*, 2591-2612.

Adomssent, M., Godemann, J., & Michelsen, G. (2007). Transferability of approaches to sustainable development at universities as a challenge. *International Journal of Sustainability in Higher Education, 8* (4), 385-402.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32* (4), 665-683.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179 – 211.

Ajzen, I. (1985). From intention to actions: A theory of planned behavior. In Kuhl, J. and J. Beckman (eds) *Action-Control: From Cognition to Behavior*. Heidelberg: Springer, 11-39.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*, Englewood Cliffs, New Jersey: Prentice-Hall.

Alba, J. W., & Hutchinson, J.W. (1987). Dimensions of consumer expertise. *Journal of Consumer Research, 13,* 411-454.

Albayrak, T., Caber, M., & Aksoy, S. (2010). Clustering consumers according to their environmental concerns and skepticisms. *International Journal of Trade, Economics and Finance, 1* (1). 84- 88

Alwitt, L.F. & Pitts, R.E. (1996). Predicting purchase intentions for an environmentally sensitive product. *Journal of Consumer Psychology*, *5*, 1, 49-64.

Aman, A.H.L., Harun, A., & Hussein, Z. (2013). The influence of environmental knowledge and concern on green purchase intention the role of attitude as a mediating variable. British Journal of Arts and Social Sciences, 7 (11), 145 – 167.

Amireault, S., Godin,G., Vohl, M-C., & Pérusse, L. (2008). Moderators of the intention-behaviour and perceived behavioural control-behaviour relationships for leisure-time physical activity. *International Journal of Behavioral Nutrition and Physical Activity, 5* (7), 1-11.

Amyx, D.A., DeJong, P.F., Lin, Chakraborty, G., & Wiener, J.L. (1994). Influencers of purchase intentions for ecological safe products: an exploratory study. In Park, C.W. *et al. AMA Winter Educators' Conference Proceedings, American Marketing Association, Chicago, IL., 5,* 341-347.

Anderson, H. R., Atkinson, R. W., Peacock, J. L., Marston, L., & Konstantinou, K. (2004). Meta-analysis of time-series studies and panel studies of Particulate Matter (PM) and Ozone (O_3). Report of a WHO task group. Copenhagen, WHO Regional Office for Europe. Retrieved April 18, 2011, from http://www.euro.who.int/document/e82792.pdf

Apaiwongse, T. S. (1994). The influence of green policies on a dual marketing center. An ecological marketing approach. *Journal of Business & Industrial Marketing, 9* (2), 41-50.

Arcury, T. A., & Johnson, T. P. (1987). Public environmental knowledge: a statewide survey. *Journal of Environmenta1 Education, 18*(3), 1-37.

Armitage, C. J., & Conner, M. (2001). Social cognitive determinants of blood donation. *Journal of Applied Social Psychology, 31*, 1431-1457.

Arvola, A., Vassallo, M., Dean, M., Lampila, P., Saba, A., Lähteenmäki, L., & Sheperd, R. (2008). Predicting intentions to purchase organic food: the role of affective and moral attitudes in the theory of planned behavior. *Appetite, 50,* 443-454.

Babcock, H. M. (2009). Assuming personal responsibility for improving the environment: moving toward a new environmental norm. *Harvard Environmental Law Review, 33,* 117-175.

Bagozzi, R.P., Wong, N., Abe, S., & Bergami, M. (2000). Cultural and situational contingencies and the theory of reasoned action: application to fast food restaurant consumption. *Journal of Consumer Psychology, 9* (2), 97–106.

Bagozzi, R. P., Yi, Y. & Baumgartner, J. (1990). The level of effort required for behaviour as a moderator of the attitude-behaviour relationship. *European Journal of Social Psychology, 20*, 45-59.

Baldassare, M., & Katz, C. (1992). The personal threat of environmental problems as predictor of environmental practices. *Environment and Behavior, 24* (5), 602-616.

Balderjahn, I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of Business Research, 17,* 51-56.

Baldwin, P. (1993). Advertisers beginning to see green. *The Dallas Morning News*, 1-11.

Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? : a new answer to an old question. *Journal of Environmental Psychology, 23,* 21-32.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215.

Bansal, P., & Roth, K. (2000). Why companies go green: A model of ecological responsiveness. *Academy of Management Journal, 43* (4), 717-736.

Banerjee, S.B., Charles, S.G., & Easwar, I. (1995). Shades of green: a multidimensional analysis of environmental advertising. *Journal of Advertising, 24* (2), 21-32.

Baron. R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51* (6), 1173-1182.

Barr, S., Gilg, A. W., & Ford, N. J. (2001). Differences between household waste reduction, reuse and recycling behavior: a study of reported behaviors, intentions and explanatory variable. *Environment & Waste Management, 4* (2), 69-82.

Bassili, J. N. (1996). Meta-judgmental versus operative indexes of psychological attributes: The case of measures of attitude strength. *Journal of Personality and Social Psychology, 71,* 637–653.

Batra, R., & Ray, M. (1986). Affective responses mediating acceptance of advertising. *Journal of Consumer Research, 13* (September), 236-239.

Beale, D. A., & Manstead, A. S. R. (1991). Predicting mothers' intention to limit frequency of infants' sugar intake: testing the theory of planned behavior. *Journal of Applied Social Psychology, 21,* 409-431.

Bearden, W.O., & Etzel, M.J. (1982). Reference group influence on product and brand purchase decisions. *Journal of Consumer Research, 9* (2), 183-194.

Beck, L., & Ajzen, I. (1991). Predicting dishonest actions using the theory of planned behavior. *Journal of Research in Personality, 25,* 285-301.

Bei, L.T., & Simpson, E.M. (1995). The determinants of consumers' purchase decisions for recycled products: an application of acquisition-transaction utility theory in Kardes, F.R., & Sujan, M. (Eds), *Advances in Consumer Research, Association for Consumer Research, Provo, UT, 22,* 257 – 261.

Bentler, P.M., & Speckart, G. (1979). Models of attitude–behaviour relations. *Psychology Review, 86* (5), 452-464.

Berger, I.E. (1997). The demographics of recycling and the structure of environmental behavior. *Environment and Behavior, 29* (4), 515-531.

Berger, I. E., & Corbin, R.M. (1992). Perceived consumer effectiveness in faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy and Marketing 11* (Fall), 79-89.

Berry, W.D., & Feldman, S. (1985). *Multiple Regression in Practice*. Beverly Hills, CA: Sage Publications.

Bhaskaran, S. Polonsky, M., Cary, J., & Fernandez, S. (2006). Environmentally sustainable food production and marketing. Opportunity or hype? *Sustainable food production and marketing, 108* (8), 677- 690.

Bhattacharya, S. (2011). Consumer Attitude towards Green Marketing in India. *The IUP Journal of Marketing Management,* 62-70.

Biswas, A., Licata, J. W., McKee, D., Pullig, C., & Daughtridge, C. (2000). The recycling cycle: an empirical examination of consumer waste recycling and recycling shopping behaviors. *Journal of Public Policy & Marketing, 19* (1), 93-105.

Bohrnstedt, G.W. (1970). Reliability and validity assessment in attitude measurement. *Attitude Measurement, Chicago, IL: Rand McNally,* 80-99.

Boldero J. (1995). The prediction of household recycling of newspapers: the role of attitudes, intentions and situational factors. *Journal of Application Social Psychology, 25* (5), 440-462.

Bosnjak, M., Obermeier, D., & Tuten, T.L. (2006). Predicting and explaining the propensity to bid in online-auctions: A comparison of two action-theoretical models. *Journal of Consumer Behaviour, 5,* 102-116.

Boztepe, A. (2012). Green marketing and its impact on consumer buying behaviour. *European Journal of Economic and Political Studies, 5 (1),* 5-21.

Bradley, J, Waliczek, T., & Zajicek, J. (1999). Relationship between environmental knowledge and environmental attitude of high school students. *Journal of Environmental Education. 30* (3), 17-22.

Brechnin, S.R., & Kempton, W. (1994). Global environmentalism: A challenge to the postmaterialism thesis? *Social Science Quarterly, 75*, 245-269.

Brown, J., & Wahlers, R. (1998). The environmentally concerned consumer: An exploratory study. *Journal of Marketing Theory and Practice*, *6* (2), 39 – 48.

Brucks, M. (1985). The effects of product knowledge on information search behavior. *Journal of Consumer Research, 12* (6), 1-16.

Bush, A.J., & Hair, J.F. Jr. (1985). An assessment of the mall intercept as a data collection method. *Journal of Market Research, 22* (2), 158– 167.

Carlson, L., Grove, S., & Kangun, N. (1993). A content analysis of environmental advertising claims: a matrix method approach. *Journal of Advertising, 22* (3), 27-40.

Carlson, L., Grove, S.J., Kangun, N. & Polonsky, M.J. (1996). An international comparison of environmental advertising: substantive versus associative claims. *Journal of Macromarketing, 16* (2), 57-68.

Carmines, E.G. & Zeller, R.A. (1979). *Reliability and Validity Assessment*. Newbury Park, CA: Sage Publications.

Carrete, L., Castaňo, R., Felix, R., Centeno, E., & González, E. (2012). Green consumer behavior in an emerging economy. *Journal of Consumer Marketing, 29* (7), 470–481.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied Business Research, Qualitative and Quantitative Methods.* Australia: John Wiley & Sons.

Chamorro, A., Sergio R. S., & Miranda, F. J. (2009). Characteristics of Research on Green Marketing. *Business Strategy and the Environment, 18*, 223–239.

Chan, R. Y. K. (1998). Mass communication and proenvironmental behavior: waste recycling in Hong Kong. *Journal of Environmental Management, 52,* 317-325.

Chan, R. Y. K. (1999). Environmental attitudes and behavior of consumers in China: survey findings and implications. *Journal of International Consumer Marketing, 11* (4), 25-52.

Chan, R. Y. K. (2001). Determinants of Chinese consumers' green purchasing behavior. *Psychology and Marketing 18,* 389-413.

Chan, R.Y.K. (2004). Consumer responses to environmental advertising in China. *Marketing Intelligence & Planning, 22* (4), 427-437.

Chan, R. Y. K., & Lau, L. B. Y. (2000). Antecedents of green purchases: A survey in China. *Journal of Consumer Marketing, 17* (4), 338-357.

Chan, R.Y.K., & Lau, L.B.Y. (2001). Explaining green purchase behavior: A cross-cultural study. *Journal of International Consumer Marketing, 14* (2/3), 9-40.

Chandravathani, S. (2006, February 9). Waste reduction: no longer an option but a necessity. *Bernama.* Retrieved February 9, 2011, from http://www.bernama.com/bernama/v3/news_lite.php?id=179384

Chang, Y. T. (2008). Solid waste management in Penang, Malaysia: on the brink of change. *EU-Asia Solid Waste Management Conference, Ipoh, Malaysia, 29-30 October 2008.*

Chase, D. & Smith, T.K. (1992). Consumers keen on green but marketers don't deliver. *Advertising Age, 63,* (June), 63-71.

Chen, Y-S. (2011). Green organizational identity: sources and consequences. *Management Decision, 49* (3), 384-404.

Chen, C.C. (2005). Incorporating green purchasing into the frame of ISO 14000. *Journal of Cleaner Production 13*, 927–933.

Chen-Yu, J.H. & Seock, Y.K. (2002). Adolescents' clothing purchase motivations, information sources, and store selection criteria: a comparison of male/female and impulse/nonimpulse shoppers. *Family and Consumer Sciences Research Journal, 31* (1), 50-77.

Cheng, J-H., Yeh, C-H., & Tu, C-W. (2008). Trust and knowledge sharing in green supply chains. *Supply Chain Management: An International Journal, 13* (8), 283-295.

Cheung, S.F., Chan, D.K., & Wong, Z.S. (1999). Reexamining the theory of planned behaviour in understanding waste paper recycling. *Environment Behaviour, 31* (5), 587–617.

Child, D. (1990). *The essentials of factor analysis* (2nd ed). London: Cassel Educational Limited.

Childers, T.L., & Rao, A.R. (1992). The influence of familial and peer-based reference groups on consumer decisions. *Journal of Consumer Research, 19* (2), 198-212.

Chi, H., Yeh, H-R., & Tsai, Y C. (2011). The Influences of Perceived Value on Consumer Purchase Intention: The Moderating Effect of Advertising Endorser. *Journal of International Management Studies, 6* (1), 92-97.

Chiou, J-S. (1998). The effects of attitude, subjective norm, and perceived behavioral control on consumers' purchase intentions: The moderating effects of product knowledge and attention to social comparison information. *Proc. Natl. Sci. Counc. ROC (C), 9* (2), 298-308.

Chung, C.J., & Wee, H.M. (2008). Green-component life-cycle value on design and reverse manufacturing in semi-closed supply chain. *International Journal of Production Economics 113*, 528-545.

Churchill, G.A. Jr. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16* (February), 64-73.

Cialdini, R.B. (2003). Crafting normative messages to protect the environment. *American Psychological Society, 12* (4), 105-109.

Cleveland, M., Kalamas, M., & Laroche, M. (2005). Shades of green: Linking environmental locus of control and pro-environmental behaviors. *Journal of Consumer Marketing*, *22*(4), 198-212.

Coakes, S.J., Steed, L. & Ong, C. (2009). *SPSS Version 16.0 for Windows. Analysis Without Anguish*, Australia: John Wiley and Sons, Inc

Coatsworth, J.D., Sharp, E.H., Palen, L., Darlin, N., Cumsille, P., & Marta, E. (2005). Exploring adolescent self-defining leisure activities and identity experiences across three countries. International Journal of Behavioral Development, 29 (4), 361-370.

Conner, M., & Armitage, C.J. (1998). Extending the theory of planned behavior: a review and avenue for further research. *Journal of Applied Social Psychology, 28* (15), 1429-1464.

Conraud-Koellner, E., & Rivas-Tovar, L. A. (2009). Study of green behavior with a focus on Mexican individuals. *iBusiness, 1,* 124-131.

Cooke, R., & Sheeran, P. (2004). Moderation of cognition-intention and cognition-behavior relations: A meta-analysis of properties of variables from the theory of planned behaviour. *British Journal of Social Psychology, 43*, 159-186.

Cope D. & Winward J. (1991). Information failures in green consumerism. *Consumer Policy Review, 1* (2), 83–86.

Crain, A. (2000). Facing the backlash: green marketing and strategic reorientation in the 1990s. *Journal of Strategic Marketing, 8*, 277-296.

Cramer, J. (1991). The selling of the green. *Times, 138* (September 16), 48.

Dagnoli, J. (1990). Green buying takes root. *Advertising Age, 60* (September),14.

Daneshvary, N., Daneshvary, R. & Schwer, R.K. (1998). Solid-waste recycling behavior and support for curbside textile recycling. *Environment and Behavior*, *30* (2), 144-161.

Darby, L., & Obara, L. (2005). Household recycling behavior and attitudes towards the disposal of small electrical and electronic equipment. *Resources, Conservation and Recycling, 44*, 17–35.

Davidson, D.J., & Freudenburg, W.R. (1996). Gender and environmental risk concerns: a review and analysis of available research. *Environment and Behavior, 28* (3), 302–339.

Davies, J., Foxall, G.R., & Pallister, J. (2002). Beyond the intention–behavior mythology: an integrated model of recycling. *Market Theory, 2* (1), 29–113.

Davis, J.J. (1993). Strategies for environmental advertising. *Journal of Consumer Marketing, 10* (2), 19-36.

D'Souza, C., Taghian, M., & Lamb, P. (2006a). An empirical study on the influence of environmental labels on consumers. *Corporate Communications: An International Journal, 11* (2), 162-173.

D'Souza, C., Taghian, M., Lamb, P., & Peretiatkos, R. (2006b). Green products and corporate strategy: an empirical investigation. *Society and Business Review, 1* (2), 144-157.

D'Souza, C., & Taghian, M. (2005). Green advertising effects on attitude and choice of advertising themes. *Asia Pacific Journal of Marketing and Logistics, 17* (3), 51-66.

Deci, E.C., & Ryan, R.M. (2000). The what and why of goal pursuit. Human needs and self determination of behavior. *Psychological Inquiry, 11*, 227-268.

De Cannière, M. H., De Pelsmacker, P., & Geuens, M. (2009). Relationship quality and the theory of planned behavior models of behavioral intentions and purchase behavior. *Journal of Business Research, 62*, 82-89.

De Young, R. (1986). Some psychological aspects of recycling. *Environment and Behavior, 18* (4), 435-449.

Dembkowski, S., & Hanmer-Llyod, S. (1994). The environmental attitude system model: A framework to guide the understanding of environmentally conscious consumer behavior. *Journal of Marketing Management, 10* (7), 593-603.

Department of Environment Malaysia. (2011, March 14). Malaysia Latest Air Pollutant Index. Retrieved on March 14, 2011, from http://www.doe.gov.my/apims/index.php?gmap=load&date=2011-03-14

Diamantopoulos, A., Bohlen, G.M., & Schlegelmilch, B.B. (1994). Predicting green purchasing decisions from measures of environmental consciousness: a two sample comparison. *Conference Proceedings Marketing Education Group, Coleraine, July*, 252-261.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991), Effect of price, brand and store information on buyers' product evaluations. *Journal of Marketing Research, 28* (3), 307-319.

Dono, J., Janine, W., & Ben, R. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *Journal of Environmental Psychology, 30* (2), 178-186.

do Paço, A., & Raposo, M. (2009). "Green" segmentation: an application to the Portuguese consumer market. *Marketing Intelligence & Planning, 27* (3), 364-379.

Downs, D.S., & Hausenblas, H. A. (2005). The theories of reasoned action and planned behavior applied to exercise: a meta-analytic update. *Journal of Physical Activity & Health, 2*, 76-97.

Dunlap, R. (1994). *International attitudes towards environment and development*, in Bergesen, H.O., & Parmann, G. (Eds), Green Globe Yearbook of International Co-operation on Environment and Development 1994, Oxford University Press, Oxford, 115-126.

Dunlap, R., & van Liere, K. (1978). The new environmental paradigm: A proposed measuring instrument and preliminary results. *Journal of Environmental Education, 9*, 10-19.

Easterling, D., Kenworthy, A. and Nemzoff, R. (1996). The greening of advertising: a twenty-five year look at environmental advertising. *Journal of Marketing Theory and Practice, 4* (1), 20-33.

Edell, J., & Burke, M. (1987). The power of feelings in understanding advertising effects. *Journal of Consumer Research, 14*, (December), 421-433.

Edwards-Jones, G., Plassmann, K., York, E.H., Hounsome, B., Jones, D.L., & Canals, C. L. (2009). Vulnerability of exporting nations to the development of a carbon label in the United Kingdom. *Environmental Science & Policy 12*, 479–490.

Edwards, W., & Fasolo, B. (2001). Decision technology. *Annual Review of Psychology, 52*, 581–606.

Einsmann, H. (1992). The environment: An entrepreneurial approach. *Long Range Planning, 25,* (4), 22 – 24.

Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review, 36*, (2), 90-100.

Ellen, P. S., Wiener, J., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy and Marketing, 10,* 102-117.

Elmer-Dewitt, P. (1992). Rich vs. poor: Summit to save the earth. *Time, 1* (June), 42–58.

Enviros. (2003). The potential for recycling small electrical and electronics wastes. Carried out by Enviros on behalf of DEFRA; December 2003.

Eriksson, C. (2004). Can green consumerism replace environmental regulation?—A differentiated-products example. *Resource and Energy Economics, 26* (3), 281-293.

Erickson, A., & Kramer-Leblanc, C. (1996). Eco-labels: the link between environmental preferences and green practices? In J. Caswell & R. Cotterill (eds), strategy and policy in the food system. NE 165 conference proceedings, Washington, DC.

Escalas, J.E., & Bettman, J.R. (2005). Self-construal, reference groups, and brand meaning. *Journal of Consumer Research, 32* (December), 378-389.

Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Hillsdale, NJ: Erlbaum.

Ferguson, K. E. (2011). Consumer perceptions of green. Are we expecting too much? *SSRN Working Paper Series [DOI:http://dx.doi.org/10.2139/ssrn.1909604]*

Fierman, J. (1991). The big muddle in green marketing. *Fortune, 3* (June), 91 – 95.

Fishbein, M. (2008). A reasoned action approach to health promotion. *Medical Decision Making, 28,* 834–844.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.* Reading, MA: Addison-Wesley.

Follows, S. B., & Jobber, D. (2000). Environmentally responsible purchase behavior: A test of a consumer model. *European Journal of Marketing, 34* (5/6), 723-746.

Foxall, G. R. (1993). Situated consumer behavior: a behavioral interpretation of purchase and consumption. *Research in Consumer Behavior, 6,* 113-152.

Fuller D.A., & Ottman, J. A. (2004). Moderating unintended pollution: the role of sustainable product design. *Journal of Business Research, 57* (11), 1231 -1238.

Fraj, E., & Martinez, E. (2006). Environmental values and lifestyles as determining factors of ecological consumer behaviour: an empirical analysis. *Journal of Consumer Marketing, 23* (3), 133 – 144.

Frame, B. (2004). The big clean up: social marketing for the Auckland region. *Local Environment, 9,* 507–526.

Frame, B., & Newton, B. (2007). Promoting sustainability through social marketing: examples from New Zealand. *International Journal of Consumer Studies, 31,* 571-581.

Fredericks, A.J., & Dossett, D.L. (1983). Attitude–behaviour relations: a comparison of the Fishbein–Ajzen and Bentler–Speckart models. *Journal of Personal Social Psychology, 45* (3), 501–512.

Fryxell, G. E., & Lo, C. W. H. (2003). The influence of environmental knowledge and values on managerial behaviors on behalf of the environment: An empirical examination of managers in China. *Journal of Business Ethics, 46* (1), 45-69.

Gardner, M.P. (1985). Does attitude toward the ad affect brand attitude under a brand evaluation? *Journal of Marketing Research, 22* (May), 192-198.

Gatersleben, B., Steg, L., & Vlek, C. (2002). Measurement and determinants of environmentally significant consumer behavior. *Environment and Behavior*, *34*, 335-362.

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-graph: Tutorial and annotated example. *Communications of the Association for Information Systems, 16,* 91-109.

Geller, E. S. (1995). Actively caring for the environment: An integration of behaviorism and humanism. *Environment and Behavior*, *27* (4), 184-195.

Geller, E. S. (1981). Evaluating energy conservation programs: Is verbal report enough? *Journal of Consumer Research, 8*, 331–335.

Gerbing, D.W., & Anderson, J.C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research, 25* (2), 186-192.

Getzner, M., & Grabner-Kräuter, S. (2004). Consumer preferences and marketing strategies for "green shares". Specifics of the Austrian market. *The International Journal of Bank Marketing, 22* (4), 260-278.

Gilg, A., Barr, S & Ford, N. (2005). Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures 37*, 481-504.

Gill, F. (2012). Practicing environmental responsibility: local and global dimensions. *Social Responsibility Journal, 8* (1), 21-32.

Ginsberg, J.M., & Bloom, P.N. (2004). Choosing the right green marketing strategy. *MIT Sloan Management Review, 46* (1), 79-84.

Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin, 132* (5), 778-822.

Gliem, J. and Gliem, R. (2003). Calculating, Interpreting, and Reporting Cronbach's Alpha Reliability Coefficient for Likert-Type Scales. In *2003 Midwest Research to Practice Conference in Adult, Continuing and Community Education.* olumbus, OH.

Global Environment Center (2011). Solid waste in Malaysia: what is solid waste? Retrieved March 10, 2011, from http://www.gecnet.info/index.cfm? &menuid =83&parentid=30

Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American Journal of Health Promotion, 11* (2), 87-98.

Godin, G., Conner, M., & Sheeran, P. (2005). Bridging the intention-behavior "gap". The role of moral norm. *British Journal of Social Psychology 44*, 497–512.

Godin, G., Shephard, R. J., & Colantonio, A. (1986). The cognitive profile of those who intend to exercise but do not. *Public Health Reports, 101* (5), 521-526.

Goldstein, N. J., Cialdini, R.B., & Griskevicius, V. (2008). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research, 35,* 472-482.

Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology, 73(1), 186-199.*

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. In M. P. Zanna (Ed.), Advances in experimental social psychology, 38, *69−119*.

Gollwitzer, P. M., & Sheeran, P. (2009). Self-regulation of consumer decision making and behavior: The role of implementation intentions. *Journal of Consumer Psychology, 19, 593−607.*

Gooch, G.D. (1996). Environmental concern and the Swedish press a case study of the effects of newspaper reporting, Personal experience and social interaction on the public's perception of environmental risks. *European Journal of Communication, 11* (1), 107-127**.**

Gould, L.C., Gardner, G.T., DeLuca, D.R., Tiemann, A., Doob, L.W., & Stolwijk, J.A.J. (1988). *Perceptions of technological risks and benefits.* New York: Russel Sage Foundation.

Gravetter, F. J., & Forzano, L-A. B. (2009). *Research Methods for the Behavioral Sciences* (3rd ed.). Belmont, CA.: Wadsworth Cengage Learning.

Graziano, A. M., & Raulin, M. L. (1997). *Research Methods: A Process of Inquiry*. New York: Harper Collins.

Green Purchasing Network India, 2009. *Carbon Footprinting as a Strategy to Promote Green Purchasing in India*. 99.

Green Purchasing Network Malaysia, 2003. *An Introductory Study on Green Purchasing Activities in Malaysia*. 39.

GreenTech Malaysia. (2010). *National Goals.* Retrieved March 10, 2011, from www.greentechmalaysia.my/index.php/green.../national-goals.html

Green, P.E., Tull, D.S., & Albaum, G. (1994). *Research for Marketing Decision (5th ed.).* New Delhi, India: Prentice-Hall.

Green, P.E., & Krieger, A.M. (1991). Segmenting markets with conjoint analysis. *Journal of Marketing, 55*(4), 20– 31.

Griskevicius, V., Tybur, J. M., & Van den Bergh, B. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, *98*(3), 392-404.

Grunert, S. (1993). Everybody seems concern about the environment but is this concern reflected in Danish consumer's food choice? *European Advances in Consumer Research, 1,* 428-433.

Guerin, D., Crete, J., & Mercier, J. (2001). A multilevel analysis of the determinants of recycling behavior in the European Countries. *Social Science Research, 30,* 195-218.

Gupta, S., & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing, 26* (6), 376–391.

Gurău, C., & Ranchhod, A. (2005). International green marketing. A comparative study of British and Romanian firms. *International Marketing Review, 22* (5), 547-561.

Haanpää, L. (2007). Consumers' green commitment: indication of a postmodern lifestyle? *International Journal of Consumer Studies, 31,* 478-486.

Hagger, M. S., Chatzisarantis, N. L. D., & Biddle, S. J. H. (2002): A meta-analytic review of the theories of reasoned action and planned behavior in physical activity: predictive validity and the contribution of additional variables. *Journal of Sport & Exercise Psychology, 24,* 3-32.

Hair, J. F. Jr., Money, A.H., Samouel, P., & Page, M. (2007). *Research Methods for Business.* West Sussex: John Wiley & Sons Ltd.

Hair, J, F. Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). New Jersey: Prentice Hall International.

Hair, J, F. Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analysis with Readings*. Englewood Cliffs, New Jersey: Prentice-Hall International.

Hale, J. L., Householder, B. J. & Greene, K. L. (2003). The theory of reasoned action. In Dillard, J.P. & Pfau, M. (Eds.). *The persuasion handbook: Developments in theory and practice.* Thousand Oaks, CA: Sage.

Han, H., Hsu, LT., and Lee, JS. (2009). Empirical investigation of the roles of attitudes towards green behaviors, overall image, gender, and age in hotel customers' eco-friendly decision-making process. *International Journal of Hospitality Management, 28*, 519-528.

Harland, P., Staats, H., & Wilke, H.A.M. (2007). Situational and personality factors as direct or personal norm mediated predictors of pro-environmental behavior: Questions derived from norm-activation theory. *Basic and Applied Social Psychology, 29* (4), 323 – 334.

Haron, S.A., Paim, L., & Yahaya, N. (2005). Towards sustainable consumption: an examination of environmental knowledge among Malaysians. *International Journal of Consumer Studies, 29,* 673-680,

Hartmann, P., & Ibáñez, V.A. (2006). Green value added. *Marketing Intelligence & Planning, 24,* (7), 673-680.

Hartmann, P., Ibáñez, V. A., & Sainz. F.J. (2005). Green branding effects on attitude: functional versus emotional positioning strategies. *Marketing Intelligence & Planning, 23* (1), 9 - 29.

Hansla, A., Gamble, A., Juliusson, A. & Gärling, T. (2008). Psychological determinants of attitude towards and willingness to pay for green electricity. *Energy Policy, 36* (2), 768-774.

Haytko, D. L., & Matulich, E. (2008). Green advertising and environmentally responsible consumer behaviors: linkages examined. *Journal of Management and Marketing Research, 1*, 2 – 11.

Hillhouse, J., Turrisi, R., & Kastner, M. (2000). Modeling tanning salon behavioral tendencies using appearance motivation, self-monitoring and the theory of planned behavior. *Health Education Research, 15* (4), 405-414.

Hines, J., Hungerford, H., & Tomera, A. (1987). Analysis and synthesis of research on environmental behavior: a meta-analysis. *Journal of Environmental Education, 18,* 1-8.

Ho, L. W. P., Dickinson, N. M., & Chan, G. Y. S. (2010). Green procurement in the Asian public sector and the Hong Kong private sector. *Natural Resources Forum 34*, 24–38.

Hopper, J.R., & Nielsen, J.M. (1991). Recycling as altruistic behavior: normative and behavioral strategies to expand participation in a community recycling programme. *Environment and Behavior, 23* (2), 195-220.

Hormuth, S. (1999). Social meaning and social context of environmentally-relevant behaviour: Shopping, wrapping, and disposing. *Journal of Environmental Psychology, 19*, 277-286.

Hoyer, W., & MacInnis, D. (2004). *Consumer Behavior*. Houghton Mifflin, Boston, MA.

Hungerford, H., & Volk, T. (1990). Changing learner behavior through environmental education. *Journal of Environmental Education*. *21* (3), 8-21.

Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 Societies*. Princeton, N.J.: Princeton University Press.

Inglehart, R. (1995). Public support for the environmental protection: Objective problems and subjective values in 43 societies. *Political Science & Politics, 28*, 57–72.

Inglehart, R. (1992). Public support for environmental protection: objective problems and subjective values. *Paper presented at the annual meeting of the American Political Science Association, Chicago, IL*.

Intergovernmental Panel on Climate Change (2007). Climate change 2007: Synthesis report. Geneva, Switzerland: IPCC. Retrieved November 14, 2011 from www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_synthesis_report.htm

International Energy Agency (2009). Key World Energy Statistics. Paris. Retrieved November 14, 2011 from http://www.iea.org/textbase/nppdf/free/2009/key_stats_2009.pdf

James, L.R., Mulaik, S.A., & Brett, J.M. (2006). A tale of two methods. *Organizational Research Methods, 9*, 233–244.

Jansson, J., Marell, A. & Nordlund, A. (2010). Green consumer behavior: determinants of curtailment and ecoinnovation adoption. *Journal of Consumer Marketing, 27* (4), 358-370.

Jin, B., & Kang, J.H. (2011). Purchase intention of Chinese consumers toward a US apparel brand: a test of a composite behavior intention model. *Journal of Consumer Marketing, 28* (3), 187-199.

Joshi, P. (2003). *Reasoned Action Versus Planned Behavior In Bus Use*. (Electronic Thesis or Dissertation). Retrieved October 22, 2013 from https://etd.ohiolink.edu/

Judd C.M., & Kenny D.A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review, 5*, 602 – 619.

Kahn, P. (2007). The child who would be caged. *Children, Youth and Environments, 17* (4), 255-266.

Kaiser, F.G., & Fuhrer, U. (2003). Ecological behavior's dependency on different forms of knowledge. *Applied Psychology: An International Review, 52* (4), 598-613.

Kaiser, F.G., Wolfing, S., & Fuhrer, U. (1999). Environmental attitude and ecological behavior. *Journal of Environmental Psychology, 19*, 1-19.

Kaiser, F.G., Ranney, M., Hartig T., & Bowler, P. A. (1999). Ecological behavior, environmental attitude, and feelings of responsibility for the environment. *European Psychologist, 4* (2), 59-74.

Kalafatis, S.D., Pollard, M., East, R., & Tsogas, M.H. (1999). Green marketing and Ajzen's theory of planned behavior: a cross-market examination. *Journal of Consumer Marketing, 16* (5), 441-460.

Kals, E., Schumacher, D., & Montada, L. (1999). Emotional affinity toward nature as a motivational basis to protect nature. *Environment and Behavior*. *31,* 178–202.

Kangun, N., & Polonsky, M.J. (1995). Regulation of environmental marketing claims: A comparative perspective. *International Journal of Advertising, 14,* 1 – 24.

Kärnä, J., Hansen, E., & Juslin, H. (2003). Social responsibility in environmental marketing planning. *European Journal of Marketing, 37* (5/6), 848 –871.

Karp, D.G. (1996).Values and their effect on proenvironmental behavior. *Environment and Behavior, 28* (1), 111-133.

Kaplan, K. J. (1972). On the ambivalence-indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique. *Psychological Bulletin, 77*, 361–372.

Kelley, K., & Abraham, C. (2004). RCT of a theory-based intervention promoting healthy eating and physical activity amongst out-patients older than 65 years. *Social Science & Medicine, 59* (4), 787-797.

Kerlinger, F.N. (1973). *Foundations of Behavioral Research.* (2nd ed.). New York: Holt, Rinehart and Winston.

Kilbourne,W.E. (2004). Sustainable communication and the dominant social paradigm: can they be integrated. *Marketing Theory, 4* (3), 187-208.

Kim, H., & Damhorst, M. R. (1998). Environmental concern and apparel consumption. *Clothing and Textiles Research Journal*, *16* (3), 126-133.

Kinnear, T.C., & Taylor, J.R. (1973). The effect of ecological concern on brand perceptions. *Journal of Marketing Research, 10* (2), 191-197.

Kinnear, T.C., Taylor, J.R., & Ahmed, S.A. (1974). Ecologically concerned consumers: who are they? *Journal of Marketing, 38, April*, 20-24.

Khan, M. R. & Zia-ud-Din. (2010). Factors explaining green purchase intentions with moderating effect of environmental knowledge: Comparative evidence from Islamic perspective. Social Science Research Network Retrieved from http://ssrn.com/abstract=1595188

Kline, R. B. (1998). *Principles and practices of structural equation modeling.* New York: Guilford.

Klöckner, C. A., & Matthies, E. (2004). How habits interfere with norm-directed behaviour:A normative decision-making model for travel mode choice. *Journal of Environmental Psychology, 24*, 319-327.

Kokkinaki, F., & Lunt, P. (1997). The relationship between involvement, attitude accessibility and attitude–behaviour consistency. *British Journal of Social Psychology, 36*, 497–509.

Kollmuss, A., & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to proenvironmental behavior? *Environmental Educational Research, 8* (3), 239-260.

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurements, 30*, 607-610.

Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Hillsdale, NJ: Erlbaum.

Kuh, K.F. (2011). Capturing individual harms. *Harvard Environmental Law Review, 35,* 155-204.

Lai, O.K. (2000). *Greening of Hong Kong? Forms of manifestation of environmental movements* in Chiu, S.W.K. and Lui, T.L. (Eds), The Dynamics of Social Movement in Hong Kong, Hong Kong University Press, Hong Kong, 259-296.

Lamb, M.E., Easterbrooks, M.A., & Holden, G.W. (1980). Reinforcement and punishment among preschoolers: Characteristics, effects and correlates. *Child Development, 51*, 1230-1236.

Lappé, F.M., & Perkins, J. (2004). *You have the power: Choosing courage in a culture of fear*. New York City, NY: Tarcher/Putnam.

Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of Consumer Marketing, 18* (6), 503-520.

Lascu, D.N. & Zinkhan, G. (1999). Consumer conformity: review and applications for marketing theory and practice. *Journal of Marketing Theory & Practice, 7* (3), 1-12.

Lee, K. (2009). Gender differences in Hong Kong adolescent consumers' green purchasing behavior. *Journal of Consumer Marketing, 26* (2), 87 – 96.

Lee, K. (2008) Opportunities for green marketing: young consumers. *Marketing Intelligence & Planning, 26* (6), 573-586.

Leedy, P. D. (1997). *Practical research: Planning and design* (6th ed.) Upper Saddle River, NJ: Prentice Hall.

Leonidou, L. C., Leonidou, C. N., & Kvasova, O. (2010). Antecedents and outcomes of consumer environmentally friendly attitudes and behavior. *Journal of Marketing Management, 26,* 1319-1344.

Li, L., & Geiser, K. (2005). Environmentally responsible public procurement (ERPP) and its implications for integrated product policy (IPP). *Journal of Cleaner Production, 13,* 705–715.

Lim, G. E. (2009, June 5). *Penang state government declares "No Plastic Bags Day" for every Monday in Penang* [Press release]. Retrieved from http://www.penang.gov.my/index.php/pusat-media/koleksi-ucapan-yab-km/arkib-koleksi-ucapan-yab-km/497-press-statement-by-the-chief-minister-of-penang-yab-lim-guan-eng-on-5-june-2009world-environment-day-in-georgetown

Luszczynska, A., Cao, D. S., Mallach, N., Pietron, K., Mazurkiewicz, M., & Schwarzer, R. (2010). Intentions, planning, and self-efficacy predict physical activity in Chinese and Polish adolescents: Two moderated mediation analyses. *International Journal of Clinical and Health Psychology, 10* (2), 265-278.

Lyon, D. W., Lumpkin, G. T., & Dess, G. G. (2000). Enhancing entrepreneurial orientation research: operationalizing and measuring a key strategic decision making process. *Journal of Management, 26,* 1055-1085.

Macey S. M., & Brown, M. A. (1983). Residential energy conservation: the role of past experience in repetitive household behaviour. *Environment Behaviour, 15* (2), 123-141.

Mainieri, T., Barnett, E.G., Valdero, T.R., Unipan, J.B., & Oskamp, S. (1997). Green buying: the influence of environmental concern on consumer behavior. *Journal of Social Psychology, 137* (2), 189-204.

Malaysia Ministry of Energy, Green Technology and Water. (2009). *Malaysia 2020 Goals.* http://www.kettha.gov.my/en/content/goals

Maloney, M., & Ward, M. (1973). Ecology: let's hear from the people – an objective scale for the measurement of ecological attitudes and knowledge. *American Psychologist, 28,* 583-586.

Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitude and behavior towards green practices in the lodging industry in India. *International Journal of Contemporary Hospitality Management, 19* (5), 364-377.

Mannetti, L., Pierro, A., & Livi, S. (2004). Recycling: planned and self-expressive behavior. *Journal of Environmental Psychology, 24* (2), 227-236.

Manning, R.E. (2011). Defining and managing visitor capacity in national parks: a program of research in the U.S. national park system. *Journal of Tourism and Leisure Studies, 17* (2), 183-214.

Martin, B., & Simintiras, A.C. (1995). The impact of green product lines on the environment: does what they know affect how they feel? *Marketing Intelligence & Planning, 13* (4), 16–23.

Marshall, M. N. (1996). Sampling for qualitative research. *Family Practice, 13* (6), 522 – 525.

Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in Organizational Behavior. *Journal of Organizational Behavior, 27,* 1031-1056.

Mathur, L.K., & Mathur, I. (2000). An analysis of the wealth effects of green market Strategies. *Journal of Business Research 50,* 193-200.

Mat Said, A., Ahmadun, F.-R., Hj Paim, L., & Masud, J. (2003). Environmental concerns, knowledge and practices gap among Malaysian teachers. *International Journal of Sustainability in Higher Education, 4* (4), 305-313.

Mayer, F., & Frantz, C. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology, 24,* 503-515.

McCarty, J.A., & Shrum, L.J. (2001). The influence of individualism, collectivism, and locus of control on environmental beliefs and behavior. *Journal of Public Policy and Marketing, 20* (Spring), 93-104.

McCarty, J.A., & Shrum, L.J. (1994). The recycling of solid wastes, personal values, value orientations and attitudes about recycling as antecedents of recycling behavior. *Journal of Business Research, 30* (1), 53-62.

McDaniel, S., & Rylander, D. (1993). Strategic green marketing. *The Journal of Consumer Marketing, 10* (3), 4-10.

McKenzie-Mohr, D., Nemiroff, L., Beers, L., & Desmarais, S. (1995). Determinants of Responsible Environmental Behavior. *Journal of Social Issues*, 139–156.

McKnight, D.H., Cummings, L.L., & Chervany, N.L. (1998). Initial trust formation in new organizational relationships. *Academy of Management Review, 23* (3), 473-490.

Menon, A., & Menon, A. (1997). Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy. *Journal of Marketing, 61*, 51–67.

Miciak, A. R. & Shanklin, W. L. (1994). Choosing celebrity endorsers. *Marketing Management, 3*(3), 51-59.

Milne, S., Orbell, S., & Sheeran, P. (2002). Combing Motivational and Volitional Interventions to Promote Exercise Participation: Protection Motivation Theory and Implementation Intentions. *British Journal of Health Psychology, 7*, 163-184.

Millar, M., & Tesser, A. (1986). Effects of affective and cognitive focus on the attitude-behavior relation. *Journal of Personality and Social Psychology. 51(2),* 270-276.

Min, H., & Galle, W. P. (1997). Green purchasing strategies: trends and implications. *International Journal of Purchasing and Materials Management, 33* (3), 10-17.

Minton, A. P., & Rose, R. L. (1997). The effects of environmental concern on environmentally friendly consumer behavior: an exploratory study. *Journal of Business Research, 40*, 37–48.

Mohammad Reza, I., Mohammad Sadeghi, Z., Amirreza, F., Norsida, S., & Hamidreza, M. (2012). Study of factors affecting young consumers to choose green products. *Journal of Basic and Applied Scientific Research, 2* (6), 5534-5544.

Mohd Helmi, A. R., Ros Zayanah, J. A. Z., Fauziah, A., & Lyndon, N. (2012). Green advertising and environmentally responsible consumer behavior: The level of awareness and perception of Malaysian youth. *Asian Social Science, 8* (5), 46-54.

Mohd. Suki, N. (2013). Green awareness effects on consumers' purchasing decision: some insights from Malaysia. *IJAPS, 9* (2), 49-63.

Mohd. Yusof, J., Bariam Singh, G. K., & Abdul Razak, R. (2013). Purchase intention of environment friendly automobile. *Procedia Social and Behavioral Sciences, 85,* 400-410.

Mohamed, B., & Yusof, Y. (2012). Malaysian domestic travellers: characteristic and behaviour. Retrieved November 14, 2013 from http:/eprints.usm.my/8601/1/Malaysian_Domestic_Travelers_Characteristic_and_Behavior_(PPPB%26P).pdf

Moisander, J., & Pesonen, S. (2002). Narratives of sustainable ways of living: constructing the self and the other as a green consumer. *Management Decision, 40* (4), 329-342.

Moisander, J. (1996). Attitudes and Ecologically Responsible Consumption. Statistics Finland. *Research Report,* 218.

Moss, S., Prosser, H., & Costello, H. (1998) Reliability and validity of the PAS–ADD Checklist for detecting psychiatric disorders in adults with intellectual disability. *Journal of Intellectual Disability Research, 42,* 173– 183.

Mostafa, M. M. (2006). Antecedents of Egyptian consumers' green purchase intentions: a hierarchical multivariate regression model. *Journal of International Consumer Marketing, 19* (2), 97- 126.

Mostafa, M. M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology & Marketing, 24* (5), 445-473.

Murray, K.B., & Schlacter, J.L (1990). The impact of services versus goods on consumer's assessment of perceived risk and variability. *Journal of the Academy of Marketing Science, 18* (1), 51-65.

Najib returns after attending climate change summit. (2009, December 20). *Bernama*. Retrieved on January 31, 2011, from http://www.bernama.com/bernama/v3/news_lite.php?id=463435

Nanere, M., D'Souza, C., Quazi, A., & Rugimbana, R. (2008). An empirical study on how green product lines stack up. Conference proceedings, ANZMAC 2008 Marketing: Shifting the Focus from Mainstream to Offbeat, 1-3 December, pp. 1-8.

Nataraajan, R., & Bagozzi, R. (1999). The year 2000: Looking back. *Psychology & Marketing, 16*, 631–642.

Neff, J., & Halliday, J. (2000). It's not trendy being green. *Advertising Age*, *71* (15), 16

New Economics Foundation (NEF) (2006). *The Happy Planet Index 2.0. Why good lives don't have to cost the earth.* London: NEF.

Ng, S., & Paladino, A. (2009). Examining the influences of intentions to purchase green mobile phones among young consumers: an empirical analysis. Conference proceedings, *ANZMAC 2009*, 1-8.

Nicolaides, A. (2006). The implementation of environmental management towards sustainable universities and education for sustainable development as an ethical imperative. *International Journal of Sustainability in Higher Education, 7 (4),* 414-424.

Nik Abdul Rashid, N. R. (2009). Awareness of eco-label in Malaysia's green marketing initiative. *International Journal of Business and Management, 4*(8), 132-141.

Nordlund, A. M., & Garvil, J. (2002). Value structures behind pro-environmental behavior. *Environment and Behavior, 34*(6), 740-756.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory (3rd ed.)*. New York: McGraw-Hill.

Nunnally, J.C. (1978). *Psychometric Theory (2nd ed.)* New York: McGraw-Hill.

Ohtomo, S., & Hirose, Y. (2007). The dual-process of reactive and intentional decision-making involved in ecofriendly behavior. Journal of Environmental Psychology, 27 (2), 117-125.

Oliver J. D., & Lee S-H. (2010). Hybrid car purchase intentions: a cross-cultural analysis. *Journal of Consumer Marketing, 27* (2), 96–103.

Ong, D., & Phau, I. (2007). An investigation of effects of environmental claims in promotional message for clothing brands. *Marketing Intelligence & Planning 25*, 772-788.

Osbaldiston, R. & Schott, J. P. (2012). Environment sustainability and behavioral science: Meta-analysis of proenvironmental behavior experiment. *Environment and Behavior*, *44*, 257-299.

Ouellette, J.A., & Wood, W. (1998). Habit and intention in everyday life: the multiple processes by which past behavior predicts future behavior. *Psychological Bulletin, 124*, 54–74.

Our Green World. (2008). How green is our world? Research Report, *TNS*. Retrieved January 15, 2011, from http://www.wpp.com/NR/rdonlyres/ECB351C9-A00D-4BC7-8CAF-CF925121E0B7/0/TNS_Market_Research_Our_Green_World.pdf

Ottman, J. (1995). Today's consumers turning lean and green. *Marketing News, 29* (23), 12 – 14.

Ottman, J. (1993). *Green Marketing: Challenges and Opportunities for the New Marketing Age*. McGraw-Hill, New York.

Ottman, J. A., Stafford, E. R., & Hartman, C. L. (2006). Avoiding green marketing myopia: ways to improve consumer appeal for environmentally preferable products. *Environment, 48* (5), 22-36.

Page, C., & Luding, Y. (2003). Bank managers' direct marketing dilemmas-customers' attitudes and purchase intention. *International Journal of Bank Marketing, 21* (3), 113-123.

Pandey, K. D., Wheeler, D. R., Ostro, B., Deichmann, U., Hamilton, K. E., & Bolt, K. (2006). *Ambient Particulate Matter Concentrations in Residential and Pollution Hotspot areas of World Cities: New Estimates based on the Global Model of Ambient Particulate (GMAPS).* The World Bank Development Economics Research Group and the Environment Department Working Paper, The World Bank, Washington DC.

Park, C.W., & Lessig, V.P. (1977). Students and housewives: differences in susceptibility to reference group. *Influence. Journal of Consumer Research, 4* (June), 102-110.

Parker, D., Manstead, A., & Stradling, S. (1995). Extending the theory of planned behaviour: The role of personal norm. *British Journal of Social Psychology, 34,* 127–137.

Pastor, M., Sadd, J. L. & Morello-Frosch, R. (2002). Who's minding the kids? Pollution, public schools, & environmental justice in Los Angeles. *Social Science Quarterly, 83*, 263–280.

Peattie, K., & Crane, A. (2005).Green marketing: legend, myth, farce or prophesy? *Qualitative Market Research: An International Journal, 8* (4), 357-370.

Peattie, K. (2001). Towards sustainability: The third age of green marketing. *The Marketing Review, 2* (2), 129 –146.

Peattie, K. (1999). Trappings versus substance in the greening of marketing planning. *Journal of Strategic Marketing, 7* (2), 131-148.

Peattie, K. (1995). *Environmental Marketing Management: Meeting the Green Challenge*. London: Pitman.

Periathamby, A., Hamid, F. S., & Khidzir, K. (2009). Evolution of solid waste management in Malaysia: impacts and implications of the solid waste bill, 2007. *Journal of Material Cycles Waste Management, 11,* 96-103.

Peter, P.J., & Olson, J.C. (1999). *Consumer Behavior and Marketing Strategy*, 5th ed., Irwin/McGraw-Hill, Boston, MA.

Phillips P. S, Holley K, Bates M, & Fresstone N. (2002). Corby waste not: an appraisal of the UKs largest holistic waste minimisation project. *Resource Conservation Recycling, 36,* 1–31.

Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: marketing influence on consumer purchase decision. *Journal of Consumer Marketing, 25* (5), 281-293.

Polonsky, M. J. (2011). Transformative green marketing: Impediments and opportunities. *Journal of Business Research, 64* (12), 1311-1319.

Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern and environmental behavior: A study into household energy use. *Environment and Behavior, 36* (1), 70-93.

Pujari, D., & Wright, G (1996). Developing environmentally conscious product strategies: a qualitative study of selected companies in Germany and Britain. *Marketing Intelligence & Planning, 14* (1), 19-28.

Rahbar, E. & Abdul Wahid, N. (2011). Investigation of green marketing tools' effect on consumers' purchase behavior. *Business Strategy Series, 12* (2), 73-83.

Ramayah, T., Lee, J.W.C., & Mohamad, O. (2010). Green product purchase intention: Some insights from a developing country. *Resources, Conservation and Recycling 54*, 1419 -1427.

Ramlogan, R. (1997). Environment and human health: A threat to all. *Environmental Management and Health, 8,* 51-66.

Rashid, N.R. N. A. (2009). Awareness of eco-label in Malaysia's green marketing initiative. *International Journal of Business Management, 4*, 132 -141.

Reser, J.P., & Bentrupperbaumer, J.M. (2005). What and where are environmental values? Assessing the impacts of current diversity of use of environmental and World Heritage values. *Journal of Environmental Psychology, 25* (2), 125-146.

Roberts J. (1993). Sex differences in socially responsible consumers' behavior, *Psychological Reports, 73*, 139–148.

Roberts, J.A., & Bacon, D.R. (1997). Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior. *Journal of Business Research, 40* (1), 79-89.

Robinson, R., & Smith, C. (2002). Psychosocial and demographic variables associated with consumer intention to purchase sustainably produced foods as defined by the midwest food alliance. *Journal of Nutrition Education and Behavior, 34* (6), 316-325.

Robinson, T., & Doss, F. (2011). Pre-purchase alternative evaluation: prestige and imitation fashion products. *Journal of Fashion Marketing and Management, 15* (3), 278-290.

Røpke, I. (2009). Theories of practice: New inspiration for ecological economic studies on consumption. *Ecological Economics, 68*(10), 2490–2497.

Røpke, I. (1999). The dynamics of willingness to consume. *Ecological Economics, 28,* 399-420.

Roscoe, J. T. (1975). *Fundamental Research Statistics for the Behavioral Sciences*. New York: Holt, Rinehart and Winston, Inc.

Rowntree, D. (1981). *Statistics without Tears: A Primer for Non-mathematicians* (1st ed.). USA: MacMillan Publishing Company.

Sagotsky, G., & Lepper, M.R. (1982). Generalization of changes in children's preferences for easy or difficult goals induced through peer modeling. *Child Development, 53* (2), 372-375.

Said, A. M., Ahmadun, F.R., Paim, L.H., & Masud, J. (2003). Environmental concerns, knowledge and practices gap among Malaysian teachers. *International Journal of Sustainability in Higher Education, 4,* 305-313.

Salequzzman, M. D., & Stocker, L. (2001). The context and prospects for environmental education and environmental career in Bangladesh. *International Journal of Sustainability in Higher Education, 2* (2), 104-121.

Salzman, J. (1997). Informing the green consumer: The debate over the use and abuse of environmental labels. *Journal of Industrial Ecology, 1* (2), 11-21.

Samuelson, P. A. (1938). A note on the pure theory of consumer's behavior. *Economica 5*, 61-71.

Saphores, J-D. M., Nixon, H., Ogunseitan, O.A., & Shapiro, A. A. (2006). Household willingness to recycle electronic waste: An application to California. *Environment and Behavior, Sage Publications*, 1-30.

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*, (4th ed.*)*, Prentice Hall Financial Times, Harlow.

Schahn, J., & Holzer, E. (1990). Studies of individual environmental concern: the role of knowledge, gender and background variables. *Environment and Behavior, 22* (6), 767-786.

Schiffman, L. G. & Kanuk, L. L. (2000). *Consumer Behavior* (7th ed.). Wisconsin: Prentice Hall

Schlegel, R. P., d'Averna, J. R., Zanna, M. P., DeCourville, N. H., & Manske, S. R. (1992). Problem drinking: a problem for the theory of reasoned action? *Journal of Applied Social Psychology, 22,* 358 -385.

Schlegelmilch, B.B., Bohlen, G.M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European Journal of Marketing, 30* (5), 35 – 55.

Scholz, U., Nagy, G., Göhner, W., Luszczynska, A., & Kliegel, M. (2009). Changes in self regulatory cognitions as predictors of changes in smoking and nutrition behaviour. *Psychology and Health, 24*, 545-561.

Scholz, U., Schüz, B., Ziegelmann, J. P., Lippke, S., & Schwarzer, R. (2008). Beyond behavioural intentions: Planning mediates between intentions and physical activity. *British Journal of Health Psychology, 13*(3), 479-494.

Schor, J. (2004). *Born to buy: The commercialized child and the new consumer culture*. New York: Scribner.

Schrum, L. J., McCarty, J.A., & Lowrey, T.M. (1995). Buyer characteristics of the green consumer and their implications for advertising tool. *Journal of Advertising, 24* (2), 71-82.

Schultz, P.W., Oskamp, S., & Mainieri, T. (1995). Who recycles and when? A review of personal and situational factors. *Journal of Environmental Psychology, 15,* 105-121.

Schwartz, S. H. (1992). Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25,* 1–65.

Schwartz, S. H. (1977). *Normative influences on altruism*. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 10, pp. 221–279). New York: Academic Press.

Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach*. United Kingdom: John Wiley & Sons.

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach* (4th Edition). New York: John Wiley & Sons.

Sekaran, U. (2000). *Research Methods for Business: A Skill Building Approach* (3rd Edition). New York: John Wiley & Sons.

Seligman, C.M., Kriss, M., Darley, J.M., Fazio, R.H., Becker, L.J., & Pryor, J.B. (1979). Predicting summer energy consumption from householders' attitudes. *Journal of Applied Psychology, 1,* 70-90.

Selman, P. (1996). *Local Sustainability: Managing and Planning Ecologically Sound Places*. Chapman, London.

Sexton, S. E., & Sexton, A. L. (2011). *Conspicuous conservation: The Prius halo and willingness to pay for environmental bona fides*. (Unpublished working paper). UC Center for Energy and Environmental Economics, the University of Berkeley, California.

Shaffer, D.R. (1994). *Social and Personality Development* (3rd Edition). Pacific Grove, CA, USA: Brooks/Cole Publishing Company.

Shamdasani, P., Chon-Lin, G., & Richmond, D. (1993). Exploring green consumers in an oriental culture: role of personal and marketing mix. *Advances in Consumer Research, 20,* 488-493.

Sharma, S., Durand, R.M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research, XVIII* (August), 291-300.

Sharp, E.H., Coatsworth, J.D., Darlin, N., Cumsille, P., & Ranieri, S. (2007). Gender differences in the self-defining activities and identity experiences of adolescents and emerging adults. *Journal of Adolescence, 30* (2), 251-269.

Sheeran, P. (2002). Intention–behavior relations: A conceptual and empirical review. In W. Stroebe, & M. Hewstone (Eds.). *European review of social psychology, 12*, 1−36 Hove: Psychology Press.

Sheeran, P., & Abraham. C. (2003). Mediator of moderators: temporal stability of intention and the intention–behavior relation. *Personality and Social Psychology Bulletin, 29* (2), 205–215.

Sheeran, P., Trafimow, D., & Armitage, C. J. (2003). Predicting behaviour from perceived behavioural control: Tests of the accuracy assumption of the theory of planned behaviour. *British Journal of Social Psychology, 42*, 393–410.

Sheeran, P., Orbell, S., & Trafimow, D. (1999). Does the temporal stability of behavioral intentions moderate intention-behavior and past behavior-future behavior relations? *Personality and Social Psychology Bulletin, 25*, 721–730.

Sheth, J.N., Mittal, B., & Newman, B. (1999). *Customer Behavior: Consumer Behavior and Beyond*, Dryden, New York, NY.

Shove, E. (2003). *Comfort, cleanliness, and convenience: The social organization of normality*. New York: Berg.

Shur, D. D. (2006). Exploratory or confirmatory factor analysis? *Statistics and Data Analysis 31*. Retrieved November 21, 2013, from http://www2.sas.com/proceedings/sugi311200131.pdf

Siegenthaler, J. P. (2010). How Green Are Your Customers? *Supply House Times,* 41-42.

Silverman, R. A., Ito, K., Freese, J., Kaufman, B. J., De Claro, D., Braun, J., & Prezant, D. J. (2010**).** Association of ambient fine particles with out-of-hospital cardiac arrests in New York City. *American Journal of Epidemiology, 172* (8), 917-923.

Smith, S., Haugtvedt, C., & Petty, R. (1994). Attitudes and recycling: does the measurement of affect enhance behavioral prediction? *Psychology & Marketing, 11*, 359-374.

Smith, N. (1998a) *Nature at the Millennium: Production and Re-Enchantment. In Remaking Reality: Nature at the Millennium*. B.B.a.N. Castree, ed. pp. 271-286. London and New York: Routledge.

Smith, T.M. (1998b) *The Myth of Green Marketing: Tending Our Goats at the Edge of Apocalypse.* Toronto, Buffalo, London: University of Toronto Press, Inc.

Sobel, D. (1999). *Beyond Ecophobia.* Retrieved November 11, 2007, from *YES! Magazine: Education for Life*: http://www.yesmagazine.org/article.asp?ID=803.

Solomon, M., Bamossy, G. & Askegaard, S. & Hogg, M.K. (2006). *Consumer Behaviour: A European Perspective, (3rd Ed)*, UK: Pearson.

Sparks, P., & Shepherd, R. (1992). Self-identity and the theory of planned behavior: assessing the role of identification with 'green consumerism'. *Social Psychology Quarterly, 1992, 55* (4), 388-399.

Speth, J. (2008). *The bridge at the edge of the world: Capitalism, the environment, and crossing from crisis to sustainability*. New Haven, CT: Yale University Press.

Steg, L., van den Berg, A. E., & de Groot, J. I. M. (2012). *Environmental Psychology: An introduction.* West Sussex, UK: John Wiley & Sons, Ltd.

Stets, J.E., & Biga, C.F. (2003). Bringing identity theory into environmental sociology. *Sociological Theory, 21* (4), 398-423.

Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly, 63,* 224–237.

Stern, N. (2007). *The economics of climate change.* New York: Cambridge University Press.

Stern, P. C. (2005). Understanding individuals' environmentally significant behaviors. *ELR News and Analysis, 35,* 10785-10790.

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56* (3), 407-424.

Stern, P. C. (1999). Information, incentives, and pro-environmental consumer behavior. *Journal of Consumer Policy, 22* (4), 461-478.

Stern, P. C., Dietz, T. Abel, T. Guagnano, G. A. & Kalof, L. (1999). A Value-Belief-Norm Theory of Support for Social Movements: The Case of Environmentalism, *Human Ecology Review, 6* (2), 81- 97.

Stern, P., & Deitz, T. (1994). The value basis of environmental concern. *Journal of Social Issues. 50* (3), 65-84.

Stern, P., Dietz, T., & Guagnano, G.A. (1995). The new ecological paradigm in social-psychological context. *Environment and Behavior, 27*, 723-743.

Stern, P., Dietz, T., Kalof, L., & Guagnano, G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology, 25*, 1611-1636

Straughan, R. D., & Roberts, J. A. (1999). Environmental segmentation alternatives: A look at green consumer behavior in the new millennium. *Journal of Consumer Marketing, 16* (6), 558-575.

Strong, C. (1996). Features contributing to the growth of ethical consumerism: a preliminary investigation. *Marketing Intelligence & Planning, 14* (5), 5-13.

Suchard, H. T., & Polonsky, M. J. (1991). A theory of environmental buyer behavior and its validity: the environmental action-behavior model in Gilly, M.C. *et al.* (Eds), *AMA Summer Educators' Conference Proceeding, American Marketing Association: Chicago, IL, 2*, 187-201.

Suh, B., & Han, I. (2003). The impact of customer trust and perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce, 73*, 135-161.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th Edition). Needham Heights, MA: Allyn & Bacon.

Tan, A. (2011, January 18). Wasteful habit a bane. *The Star*. Retrieved from http://thestar.com.my/metro/story.asp?file=/2011/1/18/north/7816851&sec=north

Tan, B. C., & Lau, T. C. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering, 4* (2), 27-39.

Tarkiainen, A., & Sundqvist, S. (2005). Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *British Food Journal, 107* (11), 808-822.

Taylor, S., & Todd, P.A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6* (2), 144-176.

Thøgersen, J. (1996). Recycling and morality. A critical review of the literature. *Environment and Behavior, 28*, 536-558.

Tibaijuka, A. (2009). *Urbanisation and Climate Change*. Conference report, Oslo 17 March 2009: Cities and Climate Change Initiative. UN Habitat, Norway.

Timilsina, G. R., Kurdgelashvili, L., & Narbel, P.A. (2011). *A Review of Solar Energy: Markets, Economics and Policies.* Policy Research Working Paper, The World Bank, Washington DC, USA.

Tikka, P.M. , Kuitunen, M. T., & Tynys, S. M. (2000). Effects of educational background on students' attitudes, activity levels, and knowledge concerning the environment. *The Journal of Environmental Education, 31* (3), 12-19.

Tonglet M. (2002). Consumer misbehaviour: an exploratory study of shoplifting. *Journal of Consumer Behaviour, 1* (4), 336–354.

Tonglet M. (2000). Consumer misbehaviour: consumers' perceptions of shoplifting and retail security. *Security Journal, 13* (4), 107-122.

Tonglet, M., Philips, P. S., & Read, A. D. (2004).Using the theory of planned behavior to investigate the determinants of recycling behavior: a case study from Brixworth, UK. *Resources, Conservation and Recycling, 41,* 191–214.

Triandis, H.C. (1993). Collectivism and individualism as cultural syndromes. *Cross-cultural Research, 27* (3), 155-180.

Tucker, P. (1999). Normative influences in household recycling. *Journal of Environmental Planning and Management, 42*, 63–82.

Tukker, A., Cohen, M. J., Hubacek, K., & Mont, O. (2010). The impacts of household consumption and options for change. *Journal of Industrial Ecology, 14* (1), 13- 30.

United Nations, 1987. Report of the World Commission on Environment and Development. General Assembly Resolution 42/187, 11 December 1987. Retrieved September 29, 2011 from http://www.un.org/documents/ga/res/42/ares42-187.htm

UNDESA (United Nations Department of Economic and Social Affairs) (1992). *Agenda 21*. New York: United Nations.

UNESCO (2004). *United Nations Decade of Education for Sustainable Development Education 2005-2014: Draft International Implementation Scheme*. UNESCO, Paris.

Uusitalo, O., & Oksanen, R. (2004). Ethical consumerism: a view from Finland. *International Journal of Consumer Studies, 28* (3), 214-221.

Vandenbergh, M. P., & Steinemann, A. C. (2007). The carbon-neutral individual. *New York University Law Review, 82*, 1673-1745.

van Lange, P.A.M., Liebrand, W.B.G., Messick, D.M., & Wilke, H.A.M. (1992). *Social dilemmas: the state-of-the art*, in Liebrand, W.B.G., Messick, D.M. and Wilke, H.A.M. (Eds), Social Dilemmas: Theoretical Issues and Research Findings, Pergamon Press, Oxford.

van Liere, K., & Dunlap, R. (1981). The social bases of environmental concern: a review of hypotheses, explanations, and empirical evidence. *Public Opinion Quarterly, 44* (2), 181 – 197.

Verplanken, B., Aarts, H., van Knippenberg, A., & Moonen, A. (1998). Habit versus planned behaviour: A field experiment. *British Journal of Social Psychology, 37*, 111-128.

Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. Journal *of Applied Social Psychology, 22*, 1580-1607

Vlek, C., & Keren, G. (1992). Behavioral decision theory and environmental risk management: Assessment and resolution of four ‘‘survival’’ dilemmas. *Acta Psychologica*, *80*, 249–278.

Venkatesh, V., & Davis, F.D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46* (2), 186-204.

Venkatraman, N. (1989). The concept of fit in strategy research: Toward verbal and statistical correspondence. *Academy of Management Review, 14* (3), 423-444.

Vermeir, I., & Verbeke, W. (2007). Sustainable food consumption among young adults in Belgium: Theory of Planned Behavior and the role of confidence and values. *Ecological Economics, 64,* 542-553.

von Borgstede, C. & Anderson, K. (2010). Environmental information- explanatory factors for information behavior. *Sustainability, 2,* 2785-2798.

von Borgstede, C., & Biel, A. (2002). Pro-environmental behavior: Situational barriers and concern for the good at stake. *Göteborg Psychological Reports, 32* (1), 1-10.

Waterman, A.S. (2004). Finding someone to be: studies on the role of intrinsic motivation in identity formation. *Identity, 4* (2), 209-228.

Watson, A., Viney, H., & Schomaker, P. (2002). Consumer attitudes to utility products: A consumer behavior perspective. *Marketing Intelligence & Planning, 20* (7), 394-404.

Watson, R., Murphy, M., & Moore, S. (1992). Developmental and social contextual variables in water usage behavior. *Brussels: XXV International Congress of Psychology Proceedings.*

Webb, T.L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin, 132* (2), 249-268.

Webster, F.E. Jr (1975). Determining the characteristics of the socially conscious consumer. *Journal of Consumer Research, 2* (12), 188-196.

Webster, F.E. Jr (1988). The rediscovery of the marketing concept. *Business Horizons*, May-June, 29-39.

Weigel, R. (1977). Ideological and demographic correlates of proecology behavior. *The Journal of Social Psychology, 103,* 39-47.

Werner, P. (2004). *Reasoned Action and Planned Behavior* in Peterson & Bredow (eds), *Middle range Theories: Application to Nursing Research*, Lippincott Williams & Wilkins, Philadelphia.

Widegren, O (1998). The new environmental paradigm and personal norms. *Environment and Behavior, 30* (1), 75 – 100.

Wiener, J. L., & Sukhdial, A. (1990). Recycling of solid waste: directions for future research, in Parasuraman, A. *et al.* (Eds), *AMA Summer Educators' Conference Proceedings, American Marketing Associations, Chicago, IL, 1*, 389-392.

Wong, V., Turner, W., & Stoneman, P. (1996). Marketing strategies and market prospects for environmentally-friendly consumer products. *British Journal of Management, 7* (3), 263-281.

Worcester, R. (1993). *Public and Elite Attitudes to Environmental Issue*, MORI, London.

World Bank. (2000). *What a waste: solid waste management in Asia, May 1999*. Urban Development Sector Unit, East Asia and Pacific Region, World Bank, Washington, D. C.

World Bank. (2007). *Air Pollution.* World Development Indicators, World Bank, Washington, D. C.

World Health Organization. (2007). *Environmental Risks* Children's environmental health. Retrieved November 15th, 2008 from: http://www.who.int/ceh/risks/en/

Yam-Tang, E. P. Y., & Chan, R. Y. K. (1998). Purchasing behaviours and perceptions of environmentally harmful products. *Marketing Intelligence & Planning, 16* (6), 356-362.

Yang , Y. T. (2009). *A study of purchase intention behavior to consumers on innovation technology smart phone in technology acceptance model and theory of reason action.* Unpublished master thesis, Nan Hua University, Taiwan.

Yale University. (2011). *Environmental Performance Index*. http://epi.yale.edu/

Young, M., DeSarbo, W. S., & Morwitz, V. G. (1998). The stochastic modeling of purchase intentions and behavior. *Management Science*, *44*, 188-202.

Zaheer, A., & Venkatraman, N. (1995). Relational governance as an inter-organizational strategy: An empirical test of the role of trust in economic exchange. *Strategic Management Journal*, *16* (5), 373-392.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing, 52*, 2-22.

Zelezny, L., Chua, P., & Alrich, C. (2000). Elaborating on gender differences in environmentalism. *Journal of Social Issues, 56* (3), 443-457.