The Antecedents of Green Purchase Intention among Malaysian Consumers

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Abstract

The objectives of this research are to identify the factors influence the green purchase intention and to determine the relationships between the factors (determinants) and green purchase intention among Malaysian consumers. A descriptive research was conducted to address the research objectives. The survey research was undertaken among the Malaysians who are members of one of the Activist Groups in which is a Non-government Organization (NGO) in Malaysia. The adopted sampling method was simple random sampling. There were 230 usable questionnaires which were analyzed with the Statistical Package for Social Science Software version 19. Five hypotheses were developed for this research and all hypotheses were tested using Pearson Correlation Analysis and Multiple Regression Analysis. The results of the study indicated that government initiative has the most significant influence on green purchase intention among Malaysian consumers. In contrast, eco-label failed to show significant relationship to green purchase intention. The finding of insignificant impact of eco-label on the green purchase intention from this study is in contrast with the finding from Nik Abdul Rashid (2009) because both studies were carried out among Malaysian consumers.

Keywords: green purchase intention, environmental knowledge, environmental attitude, peer pressure, government initiative, eco-label

1. Introduction

The rapid growth of the global economy is always linked to the increasing of consumers' consumption worldwide. The environment deterioration caused by the over consumption and utilization of natural resources from the consumers is always a concern from the public. As the environment continues to worsen, it has become a persistent public concern in developed countries. Moreover, it also awakens developing countries to the green movement for preservation of the environment.

Beginning in the 1970s, a significant amount of research has been conducted on consumer behaviour for green products. Many variables including values, beliefs/knowledge, needs & motivations, attitudes, and demographics were shown to drive consumer choice in regards to purchasing environmental friendly products (Bui & Loyola, 2005). However, there has been very few studies conducted on green purchasing behaviour (Tanner & Kast, 2003; Lee, 2008; Cheah, 2009). Lee (2008) argued that compared to Western countries, the green marketing studies in Asian countries are relatively less.

A review of the extant literature in Malaysia showed that no study has been conducted in testing the antecedents of green purchase intention based on the combination of adapting Theory of Reasoned Action (TRA) model and other selected variables used in this research in the Malaysian context. In order to close the research gap, this research focused on identifying and testifying the determinants of green purchase intention in the context of Malaysian consumers.

The objectives of this research are: (1) to identify the factors influence the green purchase intention among the Malaysian consumers, and (2) to determine the antecedent relationships between the factors and the green purchase intentions among Malaysian consumers.

This study seeks to extend the understanding of the various determinants of the green purchase intention derived

from the extant literature. Studies performed by Cheah (2009), and Chen and Chai (2010) found that there is an increased demand for green products in Malaysia. A market survey from one of the leading market survey service providers, Marketsensus claimed that green consumers in developing countries showed the most willingness to support green consumerism compared to other Asia-Pacific countries (Lung, 2010). Consumers from emerging markets in the region were more willing to pay more for green products. Nearly 95% of Thai consumers and over 80% of Malaysian and Korean consumers were willing to pay more; less than 60% of consumers from Hong Kong and Australia showed willingness to pay more (Lung, 2010). Therefore, it is interesting for this research to find out what drives Malaysian consumers to purchase green products which eventually would contribute to firms that want to emerge as key players in the Malaysian green market. The target population in this research is the Malaysian members of one of the Activist Groups which is a Non-government Organization (NGO) established in Malaysia.

This research adapted the TRA model and other determinants from extant literature to form the underlying framework for investigation. The determinants of this research are comprised of individual drives, including individual environmental knowledge and attitude; and external factors, including government initiative, peer pressure and eco- label. The results of the research can serve as a guideline for firms which are planning to target the Malaysian market in strategizing their marketing approaches that would promote consumers' purchase intention for green products. In addition, this research can enhance a better understanding and provide useful insights on the changing consumption pattern of Malaysian consumers.

2. Literature Review

2.1 Green Consumerism

Renfro (2010) defined green consumers as the consumers who support businesses that operate in the environmental friendly ways. In addition, green consumers are also concerned about how green are the products that they purchased. For better understanding green consumerism, it is important to know about green product.

Ottman (1998) defined green products as products which typically non-toxic, made from recycled materials, or minimally packaged. In general, green products are known as ecological products or environmental friendly products that have less of an impact to the environment. According to Pavan (2010) "green products" and "environmental products" are business terms that are used commonly to describe products which protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste. Pavan (201) further defined the characteristics of green products which consist of original grown, recyclable and reusable, contain natural ingredients, contain recycled content, do not pollute environment, contain approved chemical and not test on animals. Thus, Ottman (1998) argued that health-conscious consumers purchase products that are organic, nontoxic, water-based, and natural. Table 1 illustrates different types of green consumers and their implications for the green marketers.

Table 1. Type of green consumers and the implication for the green marketers

Attributes of environmentally conscious consumers	Implications for the green marketers
Will most likely be well-educated, young adult women who have more money to spend	Target products to women who generally buy behalf of men and families.
	Use the influence of children to encourage parents to try green products. They are green consumers of the future and are generally knowledgeable about environmental issues thanks to school and community education programs.
	Offer samples and incentives to try products.
Will expect green products to function as effectively as non-green products and won't pay much extra or sacrifice quality for greener products.	Effectively communicate assurances of quality-for example quality of performance, look, feel, fit, comfort, durability, etc.
Will not buy green products on the basis of environmental benefits alone. Product choice is still based on whether it meets their basic want and need. Environmental features are added selling points.	Link environmental attributes such as energy efficiency or toxic substance reduction with other benefits such as lower price, convenience or quality of life improvements.
Will be more likely to respond to product attributes that will personally benefit them.	Emphasise personal benefits by using terms such as 'safe', 'non-toxic', 'cost effective' rather than more generalised green messages such as 'biodegradable' or 'ozone friendly'.

Will tolerate only minimal inconvenience in using green products and don't want to have to go out of their way to buy them.	Make using the product simple – for example, minimise or eliminate refilling bottles.
	Select mainstream distributors where possible.
	Offer one-stop shopping and eye-appealing displays.
Will be analytical, eager to learn, and can be cynical about corporate claims for green product unless they have independent verification.	Reinforce product benefits with evidence of corporate environmental performance and improvements.
	Educate consumers about environmental issues and your efforts through a variety of means.
	Provide credible environmental endorsements.
	Use labels, in compliance with government labelling guidelines, to convey precise, detailed information about your product and its packaging.
Will not expect companies to have perfect green credentials, but will look for a commitment to improve and evidence backed by facts.	Communicate your steps towards sustainability and commitment to improvement.
	Seek feedback and promote your efforts to respond to customer concerns.

Source: Government, Q. (2009). Fact Sheet Green Marketing. E. P. Agency.

2.2 Green Marketing

The term 'Green' can denote many different meanings. According to Prem and Daleen (1993), 'green' can be defined as ecologically conscious, sustainability, environmentally conscious, conservation, humanitarian, new consumerism and corporate social responsibility. Polonsky (1994, p.4) stated that "green or environmental marketing consists of 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 (1994) defined green marketing as a way to promote the eco-friendly efforts of the company in order to satisfy its customers. Today, consumers are paying more attention to the environmental efforts of businesses and support companies that excel with their green marketing. However, there are some potential back slashes on green marketing practice that cause the failure of green marketing. Peattie and Crane (2005) had identified five wrong marketing practices that lead to the failure of green marketing. According to Peattie and Crane (2005), one of these commonly known practices that lead to the failure of green marketing is 'green selling'. Riding on the global trend towards green products, there were firms which took the opportunistic approach by adding some green claims to existing products with the intention to boost sales without knowing the philosophy of green consumerism and green marketing concept. In addition, some firms may become enthusiastic about the environment only [by practicing green harvesting strategy] when greening could result in cost savings (such as energy and material input inefficiencies) (Peattie and Crane, 2005). Table 2 illustrates in details the current practices that led to the failure of green marketing. For a better understanding of green marketing concept, Table 3 illustrates the comparison between green marketing and conventional marketing for the purpose to provide a clear picture about the major differences between green marketing and conventional marketing. By understanding the concept of green marketing thoroughly, it will help the marketing practitioners to execute the right green marketing practices.

Table 2. Practices lead to the failure of green marketing

Practices that led to the failure of green marketing	Definition
Green spinning	Taking a reactive approach by using public relations to deny or discredit the public's criticisms against the company's practices.
Green selling	Taking an opportunistic approach by adding some green claims to existing products with the intention to boost sales.
Green harvesting	Becoming enthusiastic about the environment only when greening could result in cost savings (e.g., in terms of energy and material input inefficiencies, package reductions, etc.).
Entrepreneur marketing	Developing innovative green products to market without really understanding what the consumers actually want.
Compliance marketing	Using simple compliance with implemented or expected environmental legislation as an opportunity to promote the company's green credentials without taking initiatives to go beyond responding to regulations.

Source: Peattie & Crane (2005, p.357)

Table 3. Comparison between green marketing and conventional marketing

	Green Marketing	Conventional Marketing
Consumer	Human beings with lives	Consumer with lifestyle
Products	"Cradle-to-cradle" flexible services	"Cradle-to-gave" one size fits for all products
Marketing and Communication	Educational values	Selling oriented and benefits
Corporate	Proactive, interdependent, cooperative, holistic, long term	Receptive, independent, competitive, short term oriented, profit maximizing

Source: Prem & Daleen (1993). Consumer Awareness towards Green Marketing, 2011.

There are some international firms that have implemented green marketing in their marketing strategies successfully. For example, Timberland and PepsiCo were successfully committed to improve the environment (Petrecca & Howard, 2007). Timberland is a shoe and apparel company that used eco-friendly means in its packaging of products. In 2007, Timberland used 100% recycled material in making all of its shoeboxes (Petrecca & Howard, 2007). New label on the shoes, similar to a food nutrition label was also introduced. The new labels listed the shoe's organic, recycled, and renewable materials contents (Petrecca & Howard, 2007). These labels helped to bring awareness to consumers about the company's green efforts. Another company, PepsiCo, has made a company-wide commitment to the environment in terms of their business operations. Since 2007, PepsiCo has implemented solar energy into their buildings and recycles the water from its factories (Petrecca & Howard, 2007).

2.2.1 Green Marketing in Malaysia

Malaysia is one of the earliest countries in the world that have taken a serious consideration regarding the environment by enacting the Environment Quality Act way back in 1974 (Punitha & Rahman, 2011). Beside the introduction of new legislation to protect the environment, the Malaysian government has also recently formed a new Ministry of Energy, Green Technology and Water to cater to the rising need and importance of green technology towards sustainable advancement (Punitha & Rahman, 2011).

Ahmed, et. al., (2001) revealed in their research that there were four green prominent corporations in Malaysia that have implemented green marketing strategies. These green corporations were 3M, Canon, Monark and Rampai Niaga (The Body Shop). The 3M Company stressed on the prevention of pollution from the source rather than removing it because 3M believed prevention is better than cure concept. Canon Corporation highlighted its Clean Earth Campaign which emphasized the recycling of cartridge rather than allowing those used cartridges to end up in landfills and pollute the environment. Monark, in contrast, emphasized the recycling of bottles and also ensured that its manufacturing processes are green in order to control pollution and reduce waste. Rampai Niaga (The Body Shop) differentiated itself from its competitors by focusing on cruelty-free toiletries and cosmetic products. Products offered by The Body Shop are not tested on animals.

2.3 Green Purchase Intention

Beginning in the 1970s, a significant amount of research has been conducted on consumer behaviour for environmental friendly products. Many variables including values, beliefs/knowledge, needs and motivations, attitudes, and demographics were shown to drive consumer choice in regards to purchasing environmental friendly products (Bui & Loyola, 2005). However, there have been very few studies conducted on green purchasing behaviour (Tanner & Kast, 2003; Lee, 2008; Cheah, 2009). Lee (2008) argued that the green marketing studies in Asian countries are relatively less in comparing to Western countries. Thus, it is important to understand the green purchase behaviour particularly the purchase intention in the context of Malaysian consumers.

Green purchase intention is conceptualized as the probability and willingness of a person to give preference to products having eco-friendly features over other traditional products in their purchase considerations (Nik Abdul Rashid, 2009). Chan (2001) defined green purchase as a specific kind of eco-friendly behaviour that consumers perform to express their concern to environment. Purchase intention is a critical factor to predict consumer behaviour (Fishbein & Ajzen, 1975). Consumer intention has been used as a proxy for actual behaviour (Follows & Jobber, 1999). Kotler and Armstrong (2001) argued that, in the evaluation stage, the consumer ranks brands and forms as part of the considerations in the purchase intentions process. However, two factors can come between purchase intention and purchase decision. The first factor is the attitude of others and the second factor is unexpected situational factors. For example; the consumer may form a purchase intention based on factors

such as expected income, expected price, and expected product benefits (Iman & Zainuddin, 2011).

One of the main theories that applied in the study of green purchase behavior is Theory of Reasoned Action (TRA) (Baker and Ozaki, 2008; Gupta and Ogden, 2009; Kalafatis, et al., 1999). TRA was established by Fishbein and Ajzen on 1975 (Fishbein and Ajzen, 1975, p.60). TRA is used to argue that consumer's attitudes and subjective norm towards environmental issues can influence their behavior and action towards green purchase (Fishbein and Ajzen, 1975). The support for TRA model has been extensive discussed in the consumer behavior literature in predicting intentions (Lee and Green, 1990) or behavior of consumers (Mostafa, 2007; Cheah, 2009). Thus, TRA is applicable in this research with the following assumptions: (1) Purchase intentions are completely under the consumer's volitional control (Dodd, 2010); (2) Human beings are rational and make systematic use of information available to them (Fishbein and Ajzen, 1975); and (3) People consider the implications of their actions before they decide to engage or not engage in certain behaviours (Fishbein and Ajzen, 1975).

The conceptual model for this research was developed partly based on the Theory of Reasoned Action (TRA) model and other variables from the extant literature in the area of green purchase. The determinants that influence the green purchase intention in one country might be different in another due to the difference in cultural and socio-economies conditions of each country. Thus, Figure 1 was undertaken to illustrate the tested conceptual framework that developed for this research.
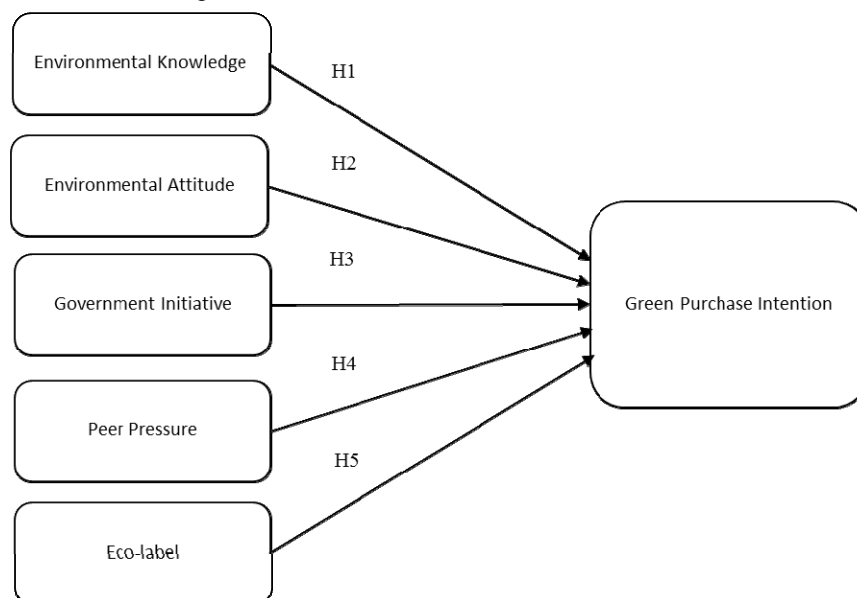

Figure 1. Proposed conceptual framework

Source: Developed for this research

There were also other scholars who have conducted similar studies on purchase intentions. Anand, Holbrook, and Stephens (1988), and Laroche, et. al. (1996) testified the advertising endorser's exposure rate can change consumer's preference and attitude and promote purchase intention. Wang (2006) used brand image as independent variable, product category as moderator, and purchase intention as dependent variable and found that the higher the brand image is, the higher the purchase intention. Moreover, Kamins and Marks (1991) and Laroche, et. al., (1996) found that consumer's brand attitude and purchase intention will be higher when a product has high preference image and familiarity. In the context of purchase intention for the green product, Iman and Zainuddin (2011) concluded that the perceived government legislation did not have an influence neither on environmental attitude nor purchase intention. Ng and Paladino (2009) conducted an empirical investigation amongst young consumers within the Australian context on the purchase intention on green mobile phones. The study indicated that peers and environmental knowledge appeared to be significant factors in encouraging green purchase.

Punitha and Rahman (2011) and Lee (2008), used variables such as environmental attitude, government initiative, peer pressure and green purchase intention based on TRA model to testify the green purchase behaviour among Malaysian consumers. According to Kaplan (1991), the state of one's knowledge about an issue impacts significantly upon decision making. Specifically, people dislike, and thus tend to avoid situations where they

have insufficient knowledge to guide their behaviour (Kerney & DeYoung, 1995). Thus, environmental knowledge was adopted as variable for this research due to there were not many studies conducted in the Malaysian context (Ibrahim, Aliagha, & Khoo, 1999, Othman, Ong & Lim, 2004) as well as the argument from Kaplan (1991). In addition, eco-label in relation to green purchase patterns was tested mainly for the developed countries and there is a lacking of study for this in Asian countries (Nik Abdul Rashid, 2009). To close this research gap, this research endeavored to identify and tests five antecedents of green purchase intention, namely: environmental knowledge, environmental attitude, government initiative, peer pressure and eco-label in Malaysia (one of the developing countries in ASEAN).

2.4 Environmental Knowledge

Knowledge/beliefs are referred to as characteristic that influences all phases in the decision process (Alba & Hutchinson, 1987). In regard to how knowledge affects consumers' ecological behaviours, findings have been contrary in extant literature.

In most cases, knowledge was found to be significantly related to how consumers gather, organize, and evaluate products (Alba & Hutchinson, 1087). Environmental knowledge is defined as the state of an individual's knowledge about an issue impacts significantly upon his or her decision making process (Nik Abdul Rashid, 2009). There are several studies that support empirically the assumption that consumers' environmental knowledge or eco-literacy is a significant predictor of environmentally friendly behaviour (Chan, 1998). Chan and Lau (2000) used ecological knowledge as one of their independent variables to predict the green purchase behavior in China. The results showed that Chinese people with more ecological knowledge had stronger intention to involve in green purchasing. Nabsiah Abdul Wahid, Elham Rahbar and Tan (2011) found that environmental knowledge has a significant influence on the green purchase behaviour of Penang green volunteers.

In contrast, other literature showed that environmental knowledge did not contribute to green purchase behaviour (Paco & Raposo, 2009). Tadajewski and Tsukamoto (2006) in their qualitative study on green consumer behaviour found that their respondents despite having knowledge on life-cycle analysis failed to shown in their daily shopping behaviour. This study has conceptualized consumer knowledge as having knowledge of green product features. In view of contradicting findings from the extant literature, this research would like to test the relationship between consumer environmental knowledge and green purchase intention.

2.5 Environmental Attitude

Attitude refers to as a mental and neural state of readiness, which exerts a direct influence upon the individual's response to all objects and situations with which it is related (Allport, 1935). Lee (2008) defined environmental attitude as the individuals' value judgment of environmental protection which taps on the individuals' cognitive assessment of the value of the environmental protection. Nik Abdul Rashid (2009) defined environmental attitude as "a learned predisposition to respond consistently favourable or unfavourable manner with respect to the environment". Attitude, as opposed to knowledge and behaviour, is the most significant predictor of consumers' willingness to pay more for ecologically favourable products (Laroche et. al., 2001).

A study from Mostafa (2007) tested the issue of green purchase intention among Egyptian consumers and the result shows that consumers' attitude towards green purchase can influence their green purchase intention and directly affects their actual green purchase behaviour. Environmental attitude was not a strong determinant of young consumers' purchasing behaviour in Hong Kong as reflected from the survey results that it only ranked second last among other variables (Lee, 2008) However, Follow and Jobber (2000) found that the relationships did exist from value to attitude to purchase intention and to purchase behaviour.

2.6 Government Initiative

Government initiative refers to initiative taken by the national government or the support given by the national government (Diekmeyer, 2008). The role played by the government in environmental protection is undeniable. As the role model to its people in the country, the government should 'walk the talk' in forming and implementing environment sustainability programmes. Governments should initiate and promote sustainable events to the community to bring about sustainability awareness to the people. In this connection, the Malaysian government has publicized various strategies to implement sustainable consumption and development (Chen & Chai, 2010).

To educate and foster environmental awareness and concern among the public, the Malaysian government also opted for social advertising (Haron et al., 2005). Government policies such as encouraging car-pooling and providing incentives to green product manufacturers that promote the country environment sustainability are

important to help the marketers in promoting their green product. Pavan (2010) argued that the government should mount a campaign to promote public awareness of eco-labels research showed that awareness and trustfulness of eco-labels can exert a significant influence on green purchase behaviour (Nabsiah Abdul Wahid, Elham, et al. 2011). According to Punitha & Rahman (2011) and Tsen, et al. (2006) the government's role is another predictor of green purchasing behavior. However, both researchers claimed that consumers believe the government should play an important role in building green purchasing.

2.7 Peer Pressure

Peer pressure refers to the psychological pressure which each agent experienced when comparing his actions with those of others (Cohan, 2009). It is clear that supplying people with information is not enough to create a change in behaviour. The peer pressure, or feeling of guilt, by not doing what was asked when others were complying, can caused a large behavioural shift. Changing the surrounding could be the best way to change the person mindset (Daido, 2004).

Kalafatis, et al. (1999) state social influence as whether an action should or should not be performed by a respondent in a referent's point of view. Lee (2008) discovered that social influence was the top predictor of Hong Kong's young consumers purchasing behavior. In addition, Kalafatis, et al. (1999) also argued that social influence was the most impactful factor in determining the UK respondent's purchasing intention toward environmental friendly products

2.8 Eco-label

Rotherham (1999) defined eco-label as synonymous descriptors that refer to information on a product that provide about the environmental impacts associated with the production or use of the product. The environmental labels are increasingly being utilized by marketers to promote the identification of green products (D'Souza et. al., 2006). Many of the studies on eco-labels look for the ways to make them effective in consumers' purchase behaviour of environmental safe products (D'Souza et. al., 2006). Nik Abdul Rashid's (2009) study showed that awareness of eco-label has a positive effect between knowledge of green product and consumer's intention to purchase. However, other studies indicated that although the functions of labels were recognized by some consumers but this does not automatically leading them to green purchasing decisions (Leire & Thidell, 2005). Leire and Thidell (2005) further argued that consumers in general have difficulties in relating environmental problems to products; differentiating between green and conventional products and have the feeling that the information provided by environmental product was far too complex to be useful in making purchase decisions.

According to Nik Abdul Rashid (2009), eco-labels were attractive instruments informing consumers about the environmental impact of their purchasing decisions. To date, there are approximately 30 different green label schemes worldwide. Asian countries such as China, Japan, Korea, India, Thailand, Malaysia and Singapore have launched their own eco-labeling schemes (Nik Abdul Rashid, 2009). In 1996, Malaysian green label schemes were committed to start by the Standards and Industrial Research Institute of Malaysia (SIRIM). At that time energy conservation, agricultural products, degradable, non-toxic plastic packaging material, hazardous metal-free electrical and electronic equipment, biodegradable cleaning agents and recycled paper were related to eco-labeling schemes (Elham & Wahid, 2010). Loureiro and Lotade (2005) suggested that consumers especially in much developed countries have shown their willingness to pay higher premium for eco-labelled products. This study deals with consumers' acceptance of eco-label as part of green product promotion method to influence their green purchase intention.

2.9 Hypotheses

Review of the existing literature and the resultant research gap has led to the development of the hypotheses in this research. The five hypotheses were:

H1: The environmental knowledge is positively related to the green purchase intention.

H2: The environmental attitude is positively related to the green purchase intention.

H3: The government initiative is positively related to the green purchase intention.

H4: The peer pressure is positively related to the green purchase intention.

H5: The eco-label is positively related to the green purchase intention.

3. Research Method

3.1 Research Design

A descriptive research design was adopted for this research because the research objectives include determining the degree to which marketing variables are related to actual market phenomena (Hair, et. al., 2006). A quantitative approach is adopted for this study with a research survey.

3.2 Questionnaire Design

The questionnaire was consisted of a mixture of closed-ended questions and scale-response questions. Closed-ended questions were adopted in Part One of the questionnaire (respondent's demographic) because the closed-ended questions "require less interviewer skills, take less time, and are easier for respondent to answer" (Zikmund, 2007, p.333). In addition, the scale-response questions were adopted in Part Two of the questionnaire (independent variables and dependent variable) because the scale-response questions allow the researcher to measure the intensity of the respondents' answers and facilitate the usage of advanced statistical tools (Churchill & Brown, 2004).

The questionnaire was divided into two parts in this research. The first part of the questionnaire identified the personal information of the respondents. A total of four items were available in the first part of the questionnaire. The second part of the questionnaire elaborated the different independent variables and dependent variable of the overall Malaysian consumer purchase intention in green product. A total of 23 items were available in the second part of the questionnaire.

The items of the questionnaire in this research were adopted from different sources in extant literature, including the 'environmental knowledge' a five-point Likert-scale anchored by "no knowledge" (1) to "very knowledgeable" (5) which was adopted from Nik Abdul Rashid (2009). A five-point Likert-scale anchored by "strongly disagree" (1) to "strongly agree" (5) was adopted as the attitude measurement for independent variables and dependent variable, including: 'environmental attitude', 'government initiative' and 'peer pressure' (Punitha & Rahman (2011); 'eco-label' was adopted from Elham and Wahid (2010) and 'green purchase intention' was adopted from Habib, et al. (2010).

3.3 Sampling

The target population in this research covered only Malaysian members of an Activist Group established in Malaysia. Simple random sampling was adopted in this research because the researcher was given a list of the members' contact for distributing the questionnaire survey. Simple random sampling showed an unbiased random selection and representative sample (Castillo, 2009). A sample size of 200 persons is recommended to be sufficient for data analysis (Hair et al., 2003). In this connection, this research targeted 260 potential respondents as the sample size.

3.4 Administration of Survey

The self-administered questionnaire for this research was distributed online through email to the members of Activist Group. 260 sets of questionnaires were sent out. The Respondents received an email or a notification on which he or she would click on an address that would take the respondent to a secure web-site to fill in the questionnaire. Respondents were assured that there would be no potential conflict of interest from any party involved. No reward would be offered to the participants in this research. Respondents were notified that the findings would be shared if requested. The researcher would provide a summary report of the findings to the interested respondents.

From the 260 sets of questionnaires sent, there was a response of 249. Of these 249 responses received, 13 returned questionnaires were considered unusable because they were incomplete whereby over 25% of the questions in Part Two of the questionnaire were not answered. It was assumed that the respondents were either unwilling to cooperate or not serious with the survey. This gives a total of 236 complete questionnaires. However, of these 236 questionnaires, there were six non-Malaysian respondents. Therefore, a net 230 completed questionnaires were used for the data analysis with the Statistical Package for Social Science software version 19 (SPSS software version 19). In conclusion, the useable set of collected questionnaires was 92.37 percent.

4. Research Results

4.1 Respondents' Demographic Profile

Based on this survey, the male respondents represented 43.9 percent (101 male respondents) of the total respondents while the female respondents represented 56.1 percent (129 female respondents) of the total respondents. Based on this survey, the age distribution of the respondents were: between the age of 31-35 years

old (26.5 percent) scored the highest respondent's age group, followed by between 36-40 years old (19.1 percent); between 26-30 years old (17.4 percent); between 20-25 years old (17.0 percent); over 40 years old (14.8 percent) and the lowest score of the respondent's age group is age less than 20 years old (5.2 percent).

4.2 Reliability Test

The reliability of a measure indicates the degree to which measures are free from random error and therefore yield consistent results (Zikmund, et al., 2007, p.231). All of the six constructs were tested for the consistency reliability of the items within the constructs by using Cronbach's alpha. In general, this value was used as a guideline in this research to ensure the stability and consistency of the adopted instruments. Cronbach's alpha for the six constructs were obtained and summarized in Table 4. Cronbach's alpha for the constructs ranged from the lowest of 0.775 (Government Initiative) to 0.916 (Environmental Knowledge). In conclusion, the results showed that the scores of the Cronbach's alpha for all the constructs used in this research exceeded the preferable scores of 0.70 and they indicated that the measurements scales of the constructs were stable and consistent in measuring the constructs (Cavana, et. al., 2001).

Table 4. Reliability of the constructs

Independent Variables	Composite Reliability(α) in progress		Delete (Yes/No)	Final Composite Reliability (α)
	Before Delete	After Delete		
Environmental Knowledge	0.916	-		0.916
Greenhouse Effect			No	
Pollution from pesticides			No	
Destruction of rainforest			No	
Vanishing wildlife habitat			No	
Environmental Attitude	0.858	-		0.858
It is essential to promote green living in Malaysia			No	
I strongly agree that more environmental protection works are needed in Malaysia			No	
It is very important to raise environmental awareness among Malaysia people			No	
Environmental protection issues are none of my business			No	
It is unwise for Malaysian to spend a vast amount of money on promoting environmental protection.			No	
Government Initiative	0.443	0.780		0.780
Environmental protection is the responsibility of the Malaysian government, not me.			Yes	
School should require all students to take course dealing with environmental and conservation problem.			No	
The government should subsidize research on technology for recycling waste products.			No	
Government should enforce environmental rules and regulations.			No	
Peer Pressure	0.826	-		0.826
I learn so much about environmental products from my friends.			No	
I learn so much about environmental issues from my friends.			No	
I often buy environmental products with my friends			No	
I often share information regarding environmental products with my friends			No	

Eco-label	0.341	0.775	0.775
I am aware of the Malaysia's Best logo		No	
The Malaysia's Best logo is easily recognizable for me.		No	
I am doubtful of the Malaysia's Best logo.		Yes	
Green Purchase Intention	0.786	-	0.786
I would definitely intend to buy those products that are environmental friendly.		No	
I would absolutely consider buying those products that are environmental friendly.		No	
I would absolutely plan to buy those products that are environmental friendly.		No	

Source: Developed for this Research

4.3 Validity Test

Construct validity was adopted in this research as validity measurement, while factor analysis was used to measure the construct validity (Cavana, et. al., 2001). Based on the output of the factor analysis showed in Table 5, the constructs were suitable for factor analysis because the value of Kaiser-Meyer-Olkin (KMO) was 0.837; between 0.8 to 0.9 (Xue Wei, 2006) and statistical test for Bartlett test of sphericity was significant ($p = 0.0001$; d.f. = 210) for all the correlations within a correlation matrix (at least for some of the constructs). Based on the principal component analysis and VARIMAX procedure in orthogonal rotation that were adopted in the factor analysis, the result showed that Eigenvalues for all the constructs were greater than 1.0, ranging from the lowest of 1.119 (Eco-label) to the highest of 6.313 (Environmental Attitude).

Table 5. Six factors identified by the principal components factor analysis

Number of Factors	Factor's Name	Variable	Factor Loading	Eigen-value	Percentage of Variance Explained	Cronbach's Reliability Coefficients
F1	Environmental Knowledge	Greenhouse Effect	0.811			
		Pollution from pesticides	0.868	3.637	17.319	0.916
		Destruction of rainforest	0.908			
		Vanishing wildlife habitat	0.893			
F2	Environmental Attitude	It is essential to promote green living in Malaysia	0.873			
		I strongly agree that more environmental protection works are needed in Malaysia	0.852			
		It is very important to raise environmental awareness among Malaysia people	0.871	6.313	30.062	0.858
		Environmental protection issues are none of my business	0.874			
		It is unwise for Malaysian to spend a vast amount of money on promoting environmental protection.	0.755			

F3	Government Initiative	School should require all students to take course dealing with environmental and conservation problem.	0.801			
		The government should subsidize research on technology for recycling waste products.	0.829	1.556	7.411	0.780
		Government should enforce environmental rules and regulations	0.731			
F4	Peer Pressure	I learn so much about environmental products from my friends.	0.850			
		I learn so much about environmental issues from my friends.	0.867	2.445	11.642	0.826
		I often buy environmental products with my friends	0.724			
		I often share information regarding environmental products with my friends	0.714			
F5	Eco-label	I am aware of the Malaysia's Best logo	0.947			
		The Malaysia's Best logo is easily recognizable for me.	0.927	1.119	5.529	0.775
F6	Green Purchase Intention	I would definitely intend to buy those products that are environmental friendly.	0.666			
		I would absolutely consider buying those products that are environmental friendly.	0.810	1.329	6.326	0.786
		I would absolutely plan to buy those products that are environmental friendly.	0.784			

Note: KMO Measure of Sampling Adequacy =0.837; p =0.0001 (p<0.05); df =210

Cumulative Percentage Rotation Sums of Squared Loadings = 78.089

Approx. Chi-Square = 3403.733

Source: Developed for this research

In term of convergent validity, the factor loadings for all items within a constructs were more than 0.50. Discriminant validity indicated that all items were allocated according to the different constructs. Therefore, the items were not overlapping and they supported respective constructs.

4.4 Multicollinearity Analysis

The values for Variance Inflation Factor (VIF) for all the constructs were less than 5.0 and the range of Tolerance Value was between 0.704 and 0.881. The findings indicated that the problem of multicollinearity was not significant in this research. The independence assumption was met based on the multicollinearity analysis. The result of the multicollinearity analysis is presented in Table 6.

Table 6. Results of multicollinearity analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1.595	0.993		1.605	0.110		
Environmental Knowledge	0.192	0.036	0.310	5.397	0.000	0.881	1.135
Environmental Attitude	0.095	0.042	0.145	2.287	0.023	0.718	1.392
Government Initiative	0.280	0.077	0.234	3.639	0.000	0.704	1.420
Peer Pressure	0.154	0.046	0.203	3.385	0.001	0.804	1.243
Eco-label	0.007	0.053	0.008	0.141	0.888	0.873	1.145

Dependent variable: Green Purchase Intention

Source: Developed for this research

4.5 Multiple Regression Analysis

Multiple regression analysis was used in this research to evaluate and determine the relationships between the determinants and green purchase intention. Multiple regression analysis was carried out to test the five hypotheses. The result of the multiple regression analysis was presented in Table 7.

Table 7. Results of multiple regression analysis

Variables	Unstandardized Beta Coefficients	t-value	Significant (p)
Environmental Knowledge	0.192	5.397	0.0001 (p<0.05)
Environmental Attitude	0.095	2.287	0.023 (p<0.05)
Government Initiative	0.280	3.639	0.0001(p<0.05)
Peer Pressure	0.154	3.385	0.001(p<0.05)
Eco-label	0.007	0.141	0.888

Notes: Dependent variable: green purchase intention of Malaysian consumer.

Independent variable: environmental knowledge, environmental attitude, government initiative, peer pressure, eco-label

R = 59.1 percent;   R Square = 35.0 percent;   Adjusted R Square = 33.5 percent;

F = 24.092;   P=0.0001 (p<0.05)

Source: Developed for this research

Based on the finding from Table 7, the p value of the environment knowledge (p = 0.0001) is less than the alpha value of 0.05. Therefore, the research concludes that environmental knowledge is positively related to the green purchase intention. Hypothesis 1 is supported. In addition, the result from Table 7 indicated that the p value for the environmental attitude (p = 0.023) is also less than the alpha value of 0.05. Therefore, it can be suggested that environmental attitude is positively related to the green purchase intention. Hypothesis 2 is therefore supported.

Furthermore, the p value for the government initiative (p = 0.0001) is also less than the alpha value of 0.05. Therefore, it can be suggested that government initiative is positively related to the green purchase intention. Hypothesis 3 is therefore supported. Table 7 also indicated that the p value for the peer pressure (p = 0.001) is also less than the alpha value of 0.05. Therefore, it can be suggested that peer pressure is positively related to the green purchase intention. Hypothesis 4 is therefore supported.

However, the last hypothesis 5 is not supported. The p value of the eco-label (p = 0.888) is more than the alpha value of 0.05. Therefore, it may be concluded that the eco-label is not significantly related to the green purchase

intention. Hypothesis 5 has failed to be supported. Based on extant literature, there were various reasons which indicated that eco-label does not stimulate green purchase intention. D'Souza (2004) explained that not many understood about the effect of label information on a consumer's intention to purchase environmental friendly products. One reason for this ineffectiveness of eco-label as marketing tool was the lack of consumer's trust of eco-label schemes (Schwartz & Miller, 1991). According to Lyer (1999), consumers expressed their ignorance in identifying eco-labels and the regulations which authorize companies to place labels on their products when they distrust of eco-labels.

Based on the SPSS output, the following multiple regression equation was formed:

Green Purchase Intention = 1.595 + 0.192 (Environmental Knowledge) + 0.095 (Environmental Attitude) + 0.280 (Government Initiative) + 0.154 (Peer Pressure)

The values of Unstandardized Beta Coefficient among the independent variables tested in the hypotheses ranged from the weakest significant relationship of 0.095 (between environmental attitude and green purchase intention) to the strongest significant relationship of 0.280 (between government initiative and green purchase intention). It may be concluded that the "government initiative" is the most powerful antecedent in affecting the green purchase intention. "Environmental knowledge" (0.192), "peer pressure" (0.154), "environmental attitude" (0.095) are ranked the second, third and fourth respectively in terms of importance of antecedents to the green purchase intention. The change of the green purchase intention is explained 35.0 percent (R Square = 0.350) by a combination of various independent variables, including, environmental knowledge, environmental attitude, government initiative and peer pressure.

In addition, the data of Standardized Coefficients explains the intensity among variables. Variables are ranked as following based on intensity: environmental knowledge (0.310) government initiative (0.234), peer pressure (0.203), environmental attitude (0.145) and eco-label (0.008). It can be concluded that environmental knowledge is the most relatively powerful independent variable in determining green purchase intention among Malaysian consumers.

5. Conclusion

5.1 Implications of Research Findings

5.1.1 Managerial Implication

The research findings have provided some insights and feedback for the green marketers in formulating their various strategies on how to attract customers to purchase their green products. Marketers should aware that consumers do associate certain determinants in influencing their purchase intention in green products. The most powerful antecedent in affecting the green purchase intention of Malaysian consumers is government initiative followed by environmental knowledge, peer pressure and environmental attitude.

Based on the results from this research, marketers should not prioritize eco-label as their strategy to attract Malaysian consumers to purchase green product because it does not show significant relationship of eco-label in influencing green purchase intention among the Malaysian consumers. However, marketers should take note that few extant literatures from Nik Abdul Rashid's (2009), and Loureiro and Lotade (2005) indicate that eco-label has significant relationship on green purchase behaviour and intention.

The results also indicated that peer pressure exert a significant impact on green purchase intention where green marketers should be emphasizing on viral marketing or word-of-mouth marketing instead of putting effort in promoting eco-label.

Marketers should also take note that this finding is based on 230 useable sampling size targeted on the Malaysian members of Activist Group NGO in Malaysia. The results might not fully represent the whole Malaysian consumers who prefer environmental green products.

5.2 Limitations of Research

5.2.1 Time Horizon (Cross-sectional Study)

The study in this research is based on cross-sectional data that is only able to reveal the net effect of predictor variable towards a particular criterion variable at a specific point in time (Cavana et. al., 2001). Due to the inherent limitation of cross-sectional study, the research findings are not able to "explain why the observed patterns are there" (Easterby-Smith, Thorpe & Lowe, 2003). In other words, this research is only able to describe the purchase intention pattern of consumer at one point of time.

5.2.2 Restriction of Generalization

The restriction of the boundary set in selecting the members of Activist Group NGO in Malaysia as sample in this study resulted the findings not able to be generalized across all Malaysian consumers who prefer green products.

5.3 Recommendations for Further Research

5.3.1 Time Horizon (Cross-sectional Study)

Longitudinal study which can capture the temporal dynamics of perception change that affect the determinants of green purchase intention of Malaysian consumers is proposed to be adopted in the future research in order for researcher to detect the changes. With longitudinal study, green purchase intention can be traced at the different point of time to investigate whether intention has been translated into behaviour. Although the current cross-sectional study findings indicate that the eco-label does not has significant relationship with green purchase intention among Malaysian consumers, the observed dependence effect may no longer be valid in the long run. Therefore, a longitudinal study is recommended for future research.

5.3.2 Generalization

Due to the restriction of generalization, it is recommended to broaden the research setting by incorporating more sampling size as well as the sources of sampling may be able to enhance the validity and generalization of this research finding. Thus, it is recommended to broaden the variety of samples for the purpose of allowing the finding to be generalizable.

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