

**INFLUENCING FACTORS OF CONSUMERS' GREEN
PURCHASE BEHAVIOUR IN PENANG**

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ABSTRAK

Keadaan alam sekitar yang semakin buruk telah menjadi suatu kebimbangan di kalangan negara-negara membangun mahupun sedang membangun. Kerajaan-kerajaan dan badan-badan bukan kerajaan (NGO) telah mengambil langkah-langkah untuk meningkatkan kesedaran umum dan memelihara alam sekitar. Dengan adanya kesedaran yang semakin meningkat terhadap masalah-masalah yang menimpa bumi kita, konsumen yang serba-tahu telah memainkan peranan yang kian proaktif dalam pemeliharaan alam sekitar. Salah satu manifestasinya boleh dilihat melalui kelakuan pembelian mesra-alam.

Tujuan utama kajian ini adalah untuk meninjau pelbagai faktor-faktor yang boleh mempengaruhi sikap terhadap kelakuan pembelian mesra alam, serta kelakuan pembelian mesra alam itu sendiri. Faktor-faktor tersebut termasuklah nilai-nilai, keprihatinan terhadap alam sekitar, pengetahuan alam sekitar, tanggapan keefektifan pengguna, dan tanggapan halangan.

Suatu kajian telah dijalankan di pusat-pusat beli-belah di negeri Pulau Pinang, Malaysia. Sejumlah 389 borang soal selidik telah dikutip untuk penganalisan selanjutnya. Hasil kajian menunjukkan bahawa satu hubungan positif dan signifikan wujud di antara pengetahuan alam sekitar dengan kelakuan pembelian mesra alam. Faktor-faktor lain pula tidak mempunyai sumbangan signifikan dalam menentukan kelakuan pembelian mesra alam. Selain itu, sikap terhadap kelakuan pembelian mesra alam mempunyai kesan pengantaraan bagi pengetahuan alam sekitar dan kelakuan pembelian mesra alam. Cadangan telah dibuat untuk pemasar dan penggubal polisi awam berdasarkan hasil kajian tersebut. Kelemahan kajian ini serta haluan untuk kajian masa depan turut dibincangkan.

ABSTRACT

The worsening situation of the environment has become a public concern in developed and developing nations alike. Governments and non-profit organizations have taken serious efforts to raise public awareness and preserve the environment. With heightened consciousness of the problem facing the earth, well-informed consumers are now playing a more proactive role in environment protection. One of the manifestations of this is thru green purchasing activities.

This aim of this paper is thus to explore the various influencing factors, (i.e. consumer values, environmental concern, perceived environmental knowledge, perceived consumer effectiveness, and perceived barriers) on attitude towards green purchase and the actual green purchase behaviour.

A survey was carried out in major shopping malls in Penang, Malaysia. A total of 389 questionnaires were collected for further analysis. The results showed that a positive significant relationship exists between environmental knowledge and green purchase behavior. Other independent variables however, did not contribute significantly in predicting green purchasing behavior. Besides, attitude towards green purchase had a mediating effect between environmental knowledge and green purchasing behavior. Suggestions for marketers and policymakers are made based on these findings. Limitation and directions for future research are also presented.

CHAPTER 1: INTRODUCTION

1.0 Introduction

Over the last decades, a number of environmental problems that threaten the environment and human life have been identified; these include global warming, ozone depletion, deforestation, water and air pollution, wildlife extinction, acid rain, household and hazardous waste. One main cause of these problems is the over-consumption of natural resources, with the developed nations showing the highest per-capita consumption. It has been reported that 30% to 40% of environmental degradation has been brought about by the consumption activities of private household (Grunert, 1993).

The worsening situation of the environment has become a public concern in developed and developing nations alike. Governments and non-profit organizations have taken serious efforts to raise public awareness and preserve the environment. With heightened consciousness of the problem facing the earth, well-informed consumers are now playing a more proactive role in environment protection. One of the manifestations of this is thru green purchasing activities. The Office of Research Facilities of the US National Institute of Health (2009) defines green purchasing as “the affirmative selection and acquisition of products and services that most effectively minimize negative environmental impacts over their life cycle of manufacturing, transportation, use and recycling or disposal.” With increasing social and political pressures, firms are now practicing a more socially responsible way of doing business and one of the initiatives is through the adoption of green marketing strategies and the introduction of environmentally friendly products and packaging. Nevertheless some of the greatest challenges faced by these firms are the consumer preferences over non-green products due to various reasons such as time, costs, information

and availability. Hence it is important to develop a model to understand the influencing factors of consumer green purchasing behaviour.

This aim of this paper is thus to explore the various influencing factors, (i.e. consumer values, environmental concern, perceived environmental knowledge, perceived consumer effectiveness, and perceived barriers) on attitude towards green purchase and the actual green purchase behaviour. The paper begins by reviewing the relevant literature, then the methodology and findings of the study will be presented. The paper concludes with a discussion of the results, limitation and directions for future research.

1.1 Background of Study

1.1.1 Environmental Quality in Malaysia

World Business Council for Sustainable Development (2010) has identified three major drivers of global consumption: (1) rapid growth of global population; (2) rise in global affluence and the associated consumption; and (3) a culture of “consumerism” among the higher income groups. This global trend is also evident in Malaysia. With a GDP registering 6.7% in 2010 (IMF, 2010), Malaysia is currently experiencing rapid economic growth; increasing population - from 26.83 million in 2006 to 28.25 million in 2010 (Department of Statistics, 2010); and a rapid urbanisation process, with urban population rising from 51% in 1991 to 62% in 2000 (Jaafar, 2010). The recent economic boom and rapidity of development has enabled Malaysians to raise their consumption level through increased income and purchasing power, which then stimulates changes in lifestyles. In fact it has been observed that Malaysian consumers are now moving towards consumption-oriented lifestyles (Haron et al., 2005).

Consequently, sharing the industrialization experience of most advanced countries, Malaysia too, has been paying a high ecological price for its rapid economic growth. On a broader level, worsening pollution and an accelerating depletion of many critical resources are among the prevalent environmental issues. For instance, Max (2011) reported that deforestation in Malaysia is more than three times faster than all of Asia combined. Malaysia is uprooting an average 2% of the rain forest a year on Sarawak, or nearly 10% over the last five years. Between 1990 and 2010, the country has lost 8.6% of its forest cover, or around 1,920,000 hectares (Butler, 2010). Similarly, worsening trend can be observed in terms of environmental quality. The number of good air quality days has been recorded at only 56% in 2009 compared to 59% in 2008. The number of clean river basins has decreased from 334 rivers in 2008 to 306 rivers in 2009, while the number of polluted rivers increased from 48 to 54 (Department of Environment, 2009).

The 1974 Environmental Quality Act has been enacted for the prevention, abatement, control of pollution and enhancement of the environment. Apart from legislation, substantial spending has been made to protect the environment against further destruction. As reported in The Ninth Malaysia Plan (2006-2010), the federal government had allocated RM510 million for cleaning, preserving and beautifying rivers; and another RM4 billion for flood mitigation projects (Wikipedia, 2010).

On a more specific level, Solid Waste Management is one of the biggest environmental issues in Malaysia. The amount of waste generated continues to increase in response to rapid growth of population, accelerated urbanisation and industrialization process. At present, the per capita generation of solid waste in Malaysia is about 1kg/day (CAP, 2001). In 2006, about 7.34 million tonnes of solid wastes were generated in Malaysia - enough to fill up 42 buildings (Chandravathani, 2006). As can be seen in Table 1 and Table 2, Malaysian solid wastes contain very high organic waste, followed by paper and plastic.

Table 1.1: Solid Waste Composition of Selected Locations in Peninsular Malaysia

| Waste Composition | Kuala Lumpur | Saba Alam | Petaling Java |
|-------------------|--------------|-----------|------------------|
| Garbage | 45.7 | 47.8 | 36.5 |
| Plastic | 9.0 | 14.0 | 16.4 |
| Bottles Glass | 3.9 | 4.3 | 3.1 |
| Paper Cardboard | 29.9 | 20.6 | 27.0 |
| Metals | 5.1 | 6.9 | 3.9 |
| Fabric | 2.1 | 2.4 | 3.1 |
| Miscellaneous | 4.3 | 4.0 | 10.0 |

Source: Saeed, 2008

In Kuala Lumpur, the waste generation rate is rising up every year due to the uncontrollable consumption owing to the increasing population, the attitude towards shopping and the high living standard. It is expected that the amount of solid waste generated in Kuala Lumpur will reach double in the next twenty years; from 3.2 million tons a year today, to 7.7 million tons a year (as cited in Saeed et al., 2008).

Table 1.2: Kuala Lumpur's Solid Waste Composition (1975-2000)

| Composition of waste | 1975 | 1980 | 1990 | 1995 | 2000 |
|----------------------|------|-------|------|-------|-------|
| Organic | 63.7 | 78.05 | 40.8 | 61.76 | 68.67 |
| Paper | 11.7 | 11.48 | 30 | 12.16 | 6.43 |
| Plastic | 7 | 0.57 | 9.8 | 5.27 | 11.45 |
| Glass | 2.5 | 0.57 | 3 | 5.27 | 1.41 |
| Metals | 6.4 | 3.16 | 4.6 | 6.89 | 2.71 |
| Textile | 1.3 | 3.16 | 2.5 | 2.84 | 1.5 |
| Wood | 6.5 | 2.58 | 3.2 | 0 | 0.7 |
| Others | 0.9 | 0.43 | 6.1 | 5.81 | 7.13 |

Source: Saeed, 2008

Similar trend is evident in Penang. The population of Penang Island is growing steadily, and is notable for the high-density lifestyle of households. According to UNDP (2008), 80% of housing units are in apartment blocks and condominiums, posing different issues from those in low-density and rural areas. In general, the rate of waste generation in Penang island is about 700-800 tonnes a day, while that on the mainland comes up to about

800 tonnes. This means that on the average, each Penangite generates about 1kg of waste a day (Bhatt, 2009). In Penang, the amount of solid waste has increased throughout the 1990s. As shown in Table 3, the amount of solid waste sent to dumping sites on the Island almost doubled from 374 tons per day in 1990 to 633 tons per day in 1994 (as cited in Tjandradewi et al., 2006).

Table 1.3: Total Amount of Solid Waste Dumped to the Dumping Site in Penang Island (tons)

| Year | MPPP | Contractor | Private | Total | Daily ave | kg cap | Recyclables |
|------|--------|------------|---------|---------|-----------|-------------------|-------------------|
| 1988 | 15,220 | 110,725 | | 125,945 | 344 | | |
| 1989 | 18,071 | 100,961 | 5488 | 124,520 | 341 | | |
| 1990 | 11,998 | 109,759 | 14,716 | 136,473 | 374 | 0.72 | |
| 1991 | 12,428 | 129,392 | 22,882 | 164,702 | 451 | 0.87 | |
| 1992 | 18,619 | 132,803 | 33,390 | 184,812 | 505 | 0.91 | |
| 1993 | 32,184 | 114,962 | 58,827 | 205,973 | 564 | 1.06 ^a | 40.8 ^b |
| 1994 | 43,481 | 126,647 | 61,440 | 230,978 | 633 | 1.18 | 53.7 |

Source: Urban Services Department of MPPP, as cited in Tjandradewi (2006).

From various local waste composition studies, it was estimated that in 2005, about 963 tonnes of waste per day are generated in Penang Island. This estimate includes municipal waste from households, commercial sources (wet markets, hawker stalls, and hypermarkets), non-hazardous industry, and institutional sources such as hospitals, schools and universities, but excludes construction and demolition materials, and garden waste (UNDP, 2008). As with the trend in Kuala Lumpur, food, paper and plastic accounted for the biggest part of the municipal solid waste composition in Penang (Table 4). It is expected that by year 2020, the average amount of residential waste generated for Penang Island will reach 982 tonnes per day and 1,114 tonnes per day for Seberang Perai (UNDP, 2008).

Table 1.4 Composition of Municipal Solid Waste for MPPP and MPSP, 2003

| Category | MPPP | | MPSP | |
|-----------------|--------|---------|--------|---------|
| | tonnes | percent | tonnes | percent |
| Food | 206.2 | 33 | 605.8 | 51 |
| Yard or Garden | 59.9 | 10 | 149 | 12 |
| Paper | 176.2 | 28 | 54.1 | 5 |
| Plastics | 89.9 | 15 | 208.1 | 17 |
| Textiles/rubber | 19 | 3 | 38.5 | 3 |
| Metal | 29.1 | 5 | 43.4 | 4 |
| Hazardous | 1.9 | 0 | 2.7 | 0 |
| Other | 37.7 | 6 | 98.4 | 8 |
| Total | 619.9 | 100 | 1200 | 100 |

Source: Project Final Report, 2007

Consequently the Malaysian Government has to spend huge amount of expenditure to deal with the country’s waste disposal. Accordingly, cost of SWM is a major item in the local authority’s budget. In Penang, the expenditure of MPPP for solid waste management is a major part of total municipal budget. Bhatt (2009) reported that in 2006, solid waste management costs constituted up to 20% of the revenue collected by the MPPP.

1.1.2 Green Movement in Malaysia

To encourage sustainability, glimpses of green can be seen in the Malaysian taxation system. For example, indirect tax exemptions are available for high-efficiency motors, insulation material and hybrid cars (Lim, 2009). In order to have one institution tasked solely to drive green technology, the Ministry of Energy, Water & Communications has been renamed Ministry of Energy, Green Technology & Water on April 2009. In August 2009, the government launched the National Green Technology Policy with the objective of providing direction towards management of sustainable environment. Under this policy, priority is given to environment-friendly products and services that comply with green technology

standards in all government procurements (Chin, 2009). To expand the use of green technology, the Green Building Index (GBI) was launched in May 2009. It is a green rating index on environmentally friendly buildings. The rating tool provides an opportunity for developers to design and construct green, sustainable buildings that can provide energy and water savings, a healthier indoor environment, harmonise with surrounding environment and efficient use of materials and resources to reduce impact on the environment (Green Building Index, 2011). To encourage business investment in green technology, green construction and innovation, the government launched the Green Technology Financial Scheme (GTFS) in January 2010, a RM1.5 billion fund that provide soft loans to firms that supply and utilise green technology (Bernama, 2010).

In view of the fact that plastics made up of 15% to 17% of Penang's solid waste composition, the Penang State Government launched the "No Plastic Mondays" campaign in July 2009 as a serious commitment to reduce plastic bag usage. Based on the data provided by 45 super/hypermarkets and other participants, it is estimated that Penangites have reduced plastic bags consumption by more than one million in four months since the start of the campaign (Lim, 2009). To further reduce the state's carbon footprint and moving towards becoming a green state, the No Plastic Bags Day was then extended to three days a week starting from Jan 2010. And on 1 January 2011, the state government has extended the ban state-wide by implementing the "No Free Plastic Bags Everyday" campaign, which applies to all hypermarkets, supermarkets, pharmacies, fast-food outlets, nasi kandar restaurants and convenience stores, including those at petrol stations. Mini-markets and single-owned businesses too, will have to adhere to this ruling on Mondays, Tuesdays and Wednesdays to ensure the renewal of their licences. Hawkers and wet markets however, are exempted from the ruling (Chong, 2011). Nevertheless this green initiative did not receive full support from some NGOs. The Malaysian Plastic Manufacturers Association (MPMA) for example,

planned to distribute not only leaflets but also 150,000 free plastic bags to counter the state's no free plastic bags policy (Thing, 2011).

1.1.3 The Green Market

To avoid further environmental deterioration and depletion of natural resources, a shift towards sustainable consumption is required in developed as well as developing countries. Immediate changes in human behaviour are sorely required to reduce consumption. In recent years, national economies try to out-green each other with various new policies. 'Green Economies' are being launched by many countries, whereby policies, investments, and spending are restructured and reallocated towards the reconfiguration of businesses and infrastructures to deliver incremental returns on capital investments while simultaneously reducing greenhouse gas emissions, waste pollutions, natural resource consumptions, and social inequalities (GPNM, 2010). In China, massive investments - \$34.6 billion - have been made in renewable energy and energy efficiency sectors (Wong, 2010). In the United States, Obama's Green Deal is based on a \$150 billion investment plan for clean energy, hybrid cars and renewable power (Wasik, 2008). In Malaysia, it is the National Green Technology Policy which drives the vision for a 'Green Malaysia'. This bodes well for an incipient green market in the country. According to Desan (2009), Malaysia's seriousness to go green is based on the opportunities that lie in a green future. For Malaysia, moving towards a greener market can provide benefits that include savings on foreign exchange, increased competitiveness of industries, expansion of export markets, new job opportunities and a better environment.

At the individual level, research shows that in recent years, consumers have become increasingly aware and concerned about the environmental impact of the products they buy, especially within the consumer goods market. People have now taken environmental issues

into consideration when making their purchases. In many countries consumer surveys report that growing numbers of consumers are willing to buy green products if given the choice. A global survey conducted in seven countries, namely the US, UK, China, Brazil, India, Germany and France, shows that consumers plan to spend more money on green products in the coming year (WPP, 2009). In particular, consumers in China, India and Brazil demonstrated the most significant support for additional spend, with 73% of Chinese, 78% of Indians and 73% of Brazilians indicate willingness to increase their green spend. Against such a conducive environment, the market for green products and services is set to boom. According to a study by UNEP (2008), the global market for environmental products and services is predicted to double from \$1.37 trillion a year at present to \$2.74 trillion by 2020.

In the United States, study shows that environment remains a concern for the majority of Americans whereby more than one-third (35%) of survey respondents are willing to pay more for environmentally friendly products (Mintel, 2010). Given this increased concern for the environment, there are more and more products with environmentally friendly characteristics available in the market. In fact nearly every segment of consumer products now offers a 'green' option which caters to the needs of the green consumers. According to Mintel (2010), food and beverage and personal care are the two most mature categories which account for the majority of green products in the marketplace. As such Mintel (2009) sees ample opportunities for growth in the US green markets over the next few years and forecasts a 19% growth for green products overall through 2013.

In Singapore, an independent research by TÜV SÜD Asia Pacific (2010) found surging consumer demand for green products and services driven by concerns about climate change. The research revealed that 81% of consumers purchased food and beverage (eg. organic food), 73% purchased home electronics (eg. energy efficient appliances), and 32% purchased clothes and footwear (eg. organic cotton clothing). According to the TÜV SÜD

Green Gauge 2010, 72% of Singapore consumers are willing to pay more for products certified as green, and are willing to pay a premium (an average of 11% more). However, businesses appear not aware of how this could be translated into demand for green products. This shows that a significant untapped opportunity actually exists in the market.

In Malaysia, there are more and more local firms offering environmental friendly products across all categories. For example, I-Green (personal care products), Synapse Synergy (biodegradable food packaging containers), Green Pulp Paper Industry (moulded pulp paper products), NuEarth and Earth & Garden (agricultural products) and Moof (paper alternatives). Besides, foreign green brands, such as Himalaya (producer of health and personal care products), can be found in the local market. At the same time, many other local and international brands are incorporating environmentally friendly features into their product lines. Philips and Pensonic, for example, address the issue of climate change by offering a wide range of energy saving lighting and home appliances into their product offerings. Green Purchasing Network Malaysia (GPNM) is an NGO which promotes green purchasing to encourage buyers, suppliers and manufacturers to adopt sustainable consumption and production methodologies.

1.2 Problem Statement

It should be noted that legislation and conservation programmes, however good they may be, could not be successful without public support and engagement. Despite the fact that various green products already available in the local market, the adoption by local consumers is still rather low.

Consideration for the environment could come only from well-informed citizens who are aware of, and fully committed to their rights to a quality environment. However, before any behaviour can be changed, it is necessary to evaluate the current state of consumer environmental values, awareness, knowledge, attitudes and beliefs towards environmentally responsible behaviour. Accordingly, previous empirical research in this area has centred on the identification of consumer motivation underlying pro-environmental behaviours which range from pre-purchase to post-purchase level. However, there is much left to be further understood in reference to what would make consumers incorporate environmentally related criteria in their purchasing decision. Specifically, understanding how consumers are influenced by what they know, feel or believe is crucial, as there is some evidence that 30–40 percent of environmental degradation has been brought about by the consumption activities of private households (Grunert, 1993).

Furthermore, a vast majority of the literature on sustainable consumption is based on the North American and European settings though some exist for developing countries such as China (Liu et al., 2010; Chan, P.Y.K., 2001), Egypt (Mostafa, 2006, 2007), Turkey (Sener and Hazer, 2008), Japan (Midori Aoyagi, 2001) and Malaysia (Haron et al., 2005; Tan & Lau, 2009; Ramayah et al., 2010; Rahbar, 2010). While previous research on green purchase mostly focuses on green products in general, some studies focus on specific product category such as green food (Lockie et al., 2002; Tanner & Kast, 2003), cloth diapers (Ramayah et al., 2010), and green electricity (Rowlands et al., 2003).

Based on the statistics, the major waste composition in Penang is food, paper and plastics. Therefore it has been decided that the current study will not focus on specific product category. Instead the focus will be to examine and understand the influencing factors behind the green purchasing behaviour in general.

1.3 Research Objectives

Against the foregoing background and responding to the call for further research suggestions from previous studies, this paper aims to fill in some of the gaps and grasp a better understanding of how various influencing factors towards green purchase might affect Malaysian consumers' green purchasing behaviour. Green purchasing is a complex process, given the dynamic and diverse context of purchasing situations that involve the interplay of a wide range of variables. An overall analytical framework has been developed based on Theory of Reasoned Action (TRA) to examine the green purchasing behaviour itself as well as its various potential antecedents. As will be described later, the major factors under investigation include the consumers' values, environmental concern, perceived environmental knowledge, Perceived Consumer Effectiveness (PCE), perceived barriers, and their attitudes toward green purchases. Besides, contextual factors that might influence green purchase, such as demographics and socioeconomic characteristics, will be incorporated too. Hence this study intends to:

- Investigate the influence of five influencing factors, i.e. values, environmental concerns, environmental knowledge, PCE, and perceived barriers, on green purchase behaviour.
- Investigate the influence of five influencing factors, i.e. values, environmental concerns, environmental knowledge, PCE, and perceived barriers, on attitude towards green purchasing.
- Examine the mediating impact of attitude towards green purchase on the relationship between the various influencing factors (namely values, environmental concern, environmental knowledge, PCE, perceived barriers) and actual green purchase behaviour.

1.4 Research Questions

Based on the research objectives, the following research questions are developed.

1. Does consumers' values influence their attitudes towards green purchase?
2. Does consumers' environmental concern influence their attitudes towards green purchase?
3. Does consumers' environmental knowledge influence their attitudes towards green purchase?
4. Does Perceived Consumer Effectiveness (PCE) influence their attitudes towards green purchase?
5. Does consumers' perceived barriers influence their attitudes towards green purchase?
6. Does consumers' attitude towards green purchasing mediate the relationship between the five influencing factors (values, environmental concern, environmental knowledge, perceived consumer effectiveness, perceived barriers) and actual green purchase behaviour?
7. Does consumers' value influence their actual green purchase behaviour?
8. Does consumers' environmental concern influence their actual green purchase behaviour?
9. Does consumers' environmental knowledge influence their actual green purchase behaviour?
10. Does Perceived Consumer Effectiveness (PCE) influence their actual green purchase behaviour?

11. Does consumers' perceived barriers influence their actual green purchase behaviour?

1.5 Significance of Study

As the idea of green purchasing is relatively new in Malaysia and there is not much literature concerning the issues under investigation, it is hoped that findings from the present study would provide a foundation for more thorough investigation along the same direction in the future.

It is a well known fact that environmental problems arise not only from the production and manufacturing processes, but also from the consumption of goods and services. This is because the by-products of consumption are pollution and the decrease of natural resources available for consumption of future generations. Furthermore it has been reported that 30-40% of environmental degradation has been brought about by the consumption activities of private household (Grunert, 1993). Hence in practical terms, it is hoped that the present study can contribute to policy makers' and businesses' better understanding of the environmental ethics of Malaysian consumers. Such an understanding can certainly provide valuable insights into further advancing the idea of green consumption within the country.

Specifically, the purchasing preferences of individual consumers dramatically determine the impact of society on the environment as a whole. The consumer's decision to buy or not to buy environmentally benign goods and services may directly contribute to the reversal of environmental deterioration. At the same time, the consumer's selection of green products may be translated into a powerful incentive for the companies to improve their environmental performances. In other words, if consumers exhibit a high degree of ecological consciousness and channel it to corresponding eco-friendly or green purchases, it is likely

that profit-driven enterprises will be strongly motivated to adopt the concept of green marketing in their operations. The dynamics of this buyer–seller interaction will consequently lead to further development of the green revolution across the whole country. This is in line with the Malaysian government’s commitment towards the development of green technology (Bernama, 2010). Thus, to better understand the environmental movement of a particular nation, an examination of how its consumers view and feel about environmental issues, and how they behave accordingly, serves as a good starting point.

On the other hand, public policy makers who are responsible for environmental education and environmental protection need dependable information with reference to what consumers actually know about the environment. Gaining a detailed understanding of why consumers undertake pro-environmental behaviour is important for policy makers and researchers seeking solutions to environmental problems that require behavioural and lifestyle change.

1.6 Definition of Key Terms

This section provides definition for some of the terminologies frequently used in this study.

(i) Values – Refers to one’s judgements about what is important in life. As such, values reflect a person’s sense of right and wrong or what “ought” to be. Values tell people what is good, beneficial, important, useful, beautiful, desirable, constructive, etc (Ramayah et al., 2010).

(ii) Environmental concern – Refers to an attitude that is related to environmental consequences. This attitude is influenced by direct personal experiences, by the experiences

of other individuals, and by the communication produced by the media (do Paco & Raposo, 2010).

(iii) Environmental knowledge – Refers to 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, 2007).

(iv) Perceived Consumer Effectiveness (PCE) – Refers to the extent to which individuals believe that their actions make a difference in solving a problem (Ellen et al., 1991).

(v) Perceived barriers – Refers to the factors that inhibit individuals from practicing green purchasing.

(vi) Attitude – Refers to an individual's positive or negative feelings about performing a behaviour.

(vii) Green purchase behaviour - The act of selecting and buying products and services that poses minimum negative impacts on the environment over their life cycle from manufacturing, transportation, to use and disposal (ORF, 2009).

(viii) Green/ecological products – Products that conserve energy and water, minimize generation of waste and pollutants, made from recyclable materials, not tested on animals; and use alternatives to hazardous materials (ORF, 2009).

(ix) Consumers in Penang – Refers to Malaysian consumers who are above 18 years old, who shop in Penang at the time of data collection at major shopping malls.

1.7 Organization of Remaining Chapters

This report consists of five chapters. Chapter 1 serves as an introduction to the research with some background of the study. It also highlights the problem statement, research objectives, research questions and the significance of the study. Chapter 2 reviews the relevant literature. The theoretical framework and hypotheses formulation are subsequently presented under this chapter. Chapter 3 describes the research methodologies which include research design, variables under study, population, sample, questionnaire development, method of data collection and analysis. Chapter 4 presents the results, data analysis and statistical interpretation. Chapter 5 concludes the report with a discussion of the results. Implication from the research, as well as the limitation and recommendation for future research will also be covered.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

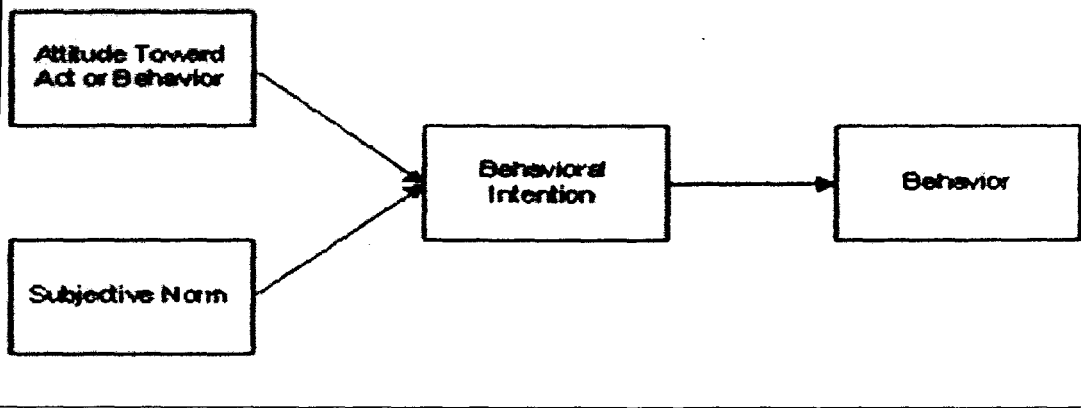
Previous research provided evidence indicating that a wide range of variables could explain an individual's sustainable behaviours. A stream of research has been prompted to focus on identifying the 'green consumer' by psychological, sociological or demographical variables. This section presents an outline of previous studies on the various influencing factors of green purchase behaviours. A literature review of the major variables under investigation and their possible relationships with green purchase behaviour will be provided. Before that, the conceptual model applied in this study, Theory of Reasoned Action and Theory of Planned Behaviour will be described.

2.1 Theoretical Background

2.1.1 Theory of Reasoned Action (TRA)

Derived from the social psychology setting, the theory of reasoned action (TRA) was proposed by Ajzen and Fishbein (1980). The components of TRA are three general constructs: behavioural intention, attitude, and subjective norm. TRA posits that a person's behavioural intention depends on the person's attitude about the behaviour and subjective norms surrounding the performance of the behaviour. If people evaluated the suggested behavior as positive (attitude), and if they think their significant others wanted them to perform the behavior (subjective norm), this results in a higher intention (motivation) and they are more likely to do so.

Figure 2.1: Theory of Reasoned Action (TRA)



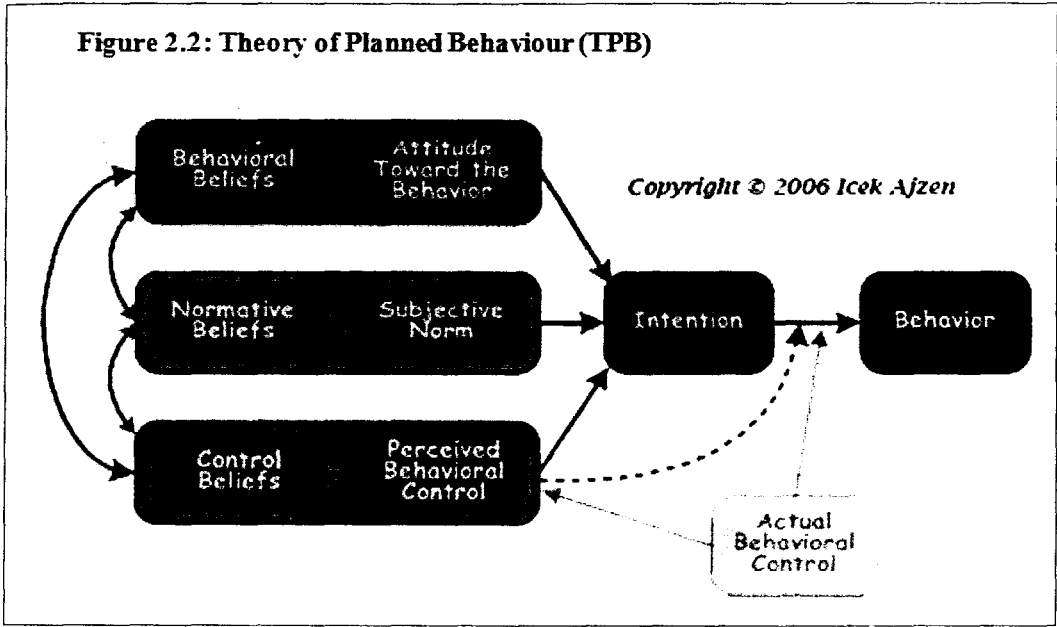
Source: Fishbein, M., & Ajzen, I. (1975).

Behavioral intention measures a person's relative strength of intention to perform a behavior. Attitude toward the behaviour is defined as the individual's positive or negative feelings about performing a behaviour. It is determined through an assessment of one's beliefs regarding the consequences arising from a behaviour and an evaluation of the desirability of these consequences. Formally, overall attitude can be assessed as the sum of the individual consequence multiply by desirability assessments for all expected consequences of the behaviour. Subjective norm is seen as a combination of perceived expectations from relevant individuals or groups along with intentions to comply with these expectations. In other words, "the person's perception that most people who are important to him or her think he should or should not perform the behaviour in question" (Ajzen and Fishbein, 1975).

1.2 Theory of Planned Behaviour (TPB)

TRA works most successfully when applied to behaviours that are under a person's volitional control. If behaviours are not fully under volitional control, even though a person

may be highly motivated by her own attitudes and subjective norm, she may not actually perform the behaviour due to intervening environmental conditions. Therefore the Theory of Planned Behaviour (TPB) was proposed by Ajzen (1991) as an extension of the TRA.



Source: Ajzen (1991).

The major difference between TRA and TPB is the addition of a third determinant of behavioural intention, namely Perceived Behavioural Control. Perceived behavioural control is determined by Control Beliefs, which refers to an individual's beliefs about the presence of factors that may facilitate or impede performance of the behavior. Perceived behavioural control indicates that a person's motivation is influenced by how people perceive their ability to perform a given action. If a person holds strong control beliefs about the existence of factors that will facilitate behaviour, then the individual will have high perceived control over a behaviour. Conversely, the person will have a low perception of control if she holds strong control beliefs that impede the behaviour.

As a general principle, the more favourable the attitude and the subjective norms, and the lower the perceived behavioural control, the stronger a person's intention would be formed to perform the action in question.

2.2 The Green Purchase Behaviours

There appears to be variability in the adoption of environmentally responsible practices, with some consumers more involved than the others. For example, in a study of green consumer market segmentation, Do Paco and Raposo (2010), confirmed the existence of different level of involvement among Portuguese consumers, with the "greener" segment exhibits favourable position in relation to several environmental aspects, namely perceived efficiency, environmentally buying behaviour, recycling and resource saving.

Research has consistently shows a low level of actual green purchase behaviour. Nevertheless, there seems to be agreement in the literature that the practice of green purchase is largely driven by health and costs consideration. Market research firm GfK Custom Research North America (2009) has identified a new "age of green pragmatism", finding Americans' attitudes towards environmentalism is shifting away from altruistic motivations towards more practical drivers such as saving money, health, getting value and promoting safety. Results from the 2008 GfK Roper Green Gauge study revealed that the American consumers are not only more aware of green issues, but are finding practical ways to be eco-friendly while also saving money in today's difficult economic times. The most common green actions are those that are helping Americans save money in their day-to-day lives. 76% have bought energy efficient light bulbs; 58% have purchased energy saving appliances; while 81% consumers are considering gas mileage in their next vehicle purchases (GfK Custom Research North America, 2008).

Using the case of two green-clothing retailers, Meyer (2001) demonstrates that a green product's environmental superiority does not have to be its core value added, and claims that green products are successful only if consumers perceive the products as superior or perform at least as good as conventional offerings. In other words, green products are bought only if their cost-benefit balance shows better performance in the eyes of the consumers than the equivalent balance of conventional products.

Liu et al. (2010) explore the green purchase behaviours of urban residents in Suzhou city, Jiangsu Province, China, and discover that nearly half of the respondents have seldom bought green products, confirming a low level of residential green purchase practices. Respondents have actually practiced fewer than four items from the 10 pre-defined green purchase activities. Their study revealed that people behave differently in practicing different green purchase activities. In accordance with Meyer's cost-benefit assertion, they observed that the Chinese respondents are more inclined to engage in green purchase behaviours that are beneficial to their health, such as buying organic food and vegetables, and bring about economic advantages, such as buying high energy-efficiency appliances, and using their own bag in the supermarkets.

This finding coincides with the findings of Sener and Hazer (2008), who discover that sustainable consumption behaviours of individuals are not in every consumption area, but are especially apparent in those areas where there is economic advantage. For example, they found that Turkish women are more careful with consumption behaviours with economic costs to them, such as 'turning off the lights when they are not used', 'not starting the machine unless it is completely full' and 'turning off the television, audio system and similar devices when they are not used', than with behaviours that did not entail costs but that were related to environmental protection, such as 'the collection of paper and glass separately',

‘collecting materials that are recyclable’ and ‘paying attention not to purchase detergent, shampoo, spray, deodorant, and similar products which are harmful to nature’.

Similarly, in a study to examine the profile of the Greek green consumer based on the study and empirical analysis of engagement in selected 3R activities, Abeliotis et al. (2010) found a high propensity among the Greeks to engage in certain “Reduce” activities such as energy and water saving activities, compared to other “Recycling” and “Reuse” activities. Do Paco and Raposo (2010) too, observe that the Portuguese, despite their support for policies designed to improve the environment, do not translate their concerns into actions. Their participation is often based on protecting the environment by saving electricity and water, which again shows that these concerns may be more closely related with economic factors than with an environmental consciousness.

Tilikidou (2007) examines the effects of knowledge and attitudes upon Greeks’ pro-environmental purchasing behaviour. His findings indicated a rather low compliance in pro-environmental purchasing behaviour among the Greeks. The most adopted behaviours are those that concern energy and water conservation, reduction of overall consumption and avoidance of products containing genetically modified organisms. However, Sener and Hazer (2008) argue that one can never be sure whether these behaviours are driven by a conscious decision to help environmental protection or they are motivated by people’s financial or health concerns or both.

Lockie et al. (2002) examine the motivations behind organic food consumption in Australia and observed a prevalent stereotypical image of organic consumers as “greenies”, “health nuts” or “yuppies”. However, results demonstrated that while organic consumers expressed stronger views and motivations in relation to issues such as environment, animal welfare and biotechnology, their views were actually not radically opposed to non-organic

consumers, as the stereotypes would suggest. They reasoned that the motivational factors examined are not the sole determinants of organic consumption. Rather, consumers are faced with a dazzling array of competing discourses on food, nutrition, environment, etc, together with an equally dazzling array of competing desires, preferences, anxieties and beliefs, as well as the rather practical issues of availability, convenience and cost. Nevertheless, consistent with other studies, they too, conclude that among the plethora of competing demands and motivations faced by organic consumers, the concern least likely to be compromised is that of personal and family health.

The findings of Follows and Jobber (2000) suggest that when faced with a specific product decision, an individual will evaluate both the environmental and individual consequences associated with consuming a product. Greater importance placed on the environmental consequences indirectly increases environmentally responsible purchase behaviour, while higher salience towards the individual consequences indirectly increases the purchase of the environmentally non-responsible product alternative.

In an attempt to uncover personal and contextual factors that influence green food purchases by Swiss consumers, Tanner and Kast (2003) found that green food purchases are facilitated by positive attitudes of consumers toward environmental protection, fair trade, local products, and availability of action-related knowledge. However, the extent of people's green food purchases decreased when people perceived a need to save time, and when they shopped mainly in supermarkets. None of the other personal factors (attitude toward genetically engineered food, food taste, health, factual knowledge, confidence in eco-label, personal norms, perceived monetary barriers) proved to be a relevant predictor. Particularly surprising is the discovery that personal norms and perceived monetary barriers were not significant.