A Study on Factors Affecting Green Purchase Behavior of Consumers in Shanghai, China

Ms. Bing Zhu

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A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Business Administration in Marketing
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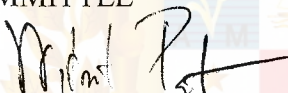Copyright of Assumption University

Thesis Title	A Study on Factors Affecting Green Purchase Behavior of Consumers in Shanghai, China
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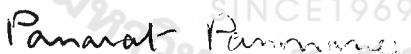(Kitti Phothikitti, Ph.D.)

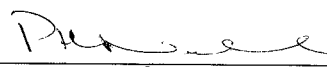THESIS EXAMINATION COMMITTEE

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ABSTRACT

This research focuses on consumers' actual purchases of green products in Shanghai, China. The research used a questionnaire to survey 402 respondents who have bought green products from HiQuality Organic Food Chain Store in Shanghai. The questionnaires were distributed to shoppers at five HiQuality branches in Shanghai. The data were analyzed and summarized by using the Statistical Package for Social Science (SPSS). Pearson Correlation Coefficient Analysis was applied to predict whether or not there is a relationship between each independent variable and dependent variable.

The results of this study indicate that all independent variables have significant relationships with dependent variable. Firstly, the strongest significant relationship was found between environmental attitude and actual green purchase behavior (.831). Secondly, there was a significant relationship between subjective norm and actual green purchase behavior (.687). In addition, a positive correlation between consumers' perception towards product availability and their actual green purchase behavior was found (.633), followed by a positive correlation between consumers' attitudes towards buying and actual green purchase behavior (.630), consumers' perception towards price and their actual green purchase behavior (.532), and ecological affect and consumers' actual green purchase behavior (.425).

The results intend to be expressed to the enterprises and marketers of green product, through which the enterprises and marketers will have a better understanding about Chinese consumers' attitudes, perceptions towards environmental issues, ecological issues and green consumption. Therefore, the producers and marketers of green products are able to find a suitable path to cultivate or attract more customers and to extend their market sizes.

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iii

TABLE OF CONTENTS

CHAPTER I GENERALITIES OF THE STUDY

CHAPTER II LITERATURE REVIEW AND RELATED STUDIES

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

GENERALITIES OF THE STUDY

1.1 Introduction

Economy has leapt forward in recent years. On one hand, the living standard of people is improving; however, on the other hand, global warming, deforestation, acid rain, species loss, etc are the environmental problems that people are facing at this moment. Even though the main cause lies in industrial and agricultural production, the consumption habits of general public have a great influence on pollution. People's concern and awareness of environmental protection and food security have been fuelled by rapid economic growth and food safety scandal. For instance, Chinese consumers are highly concerned about food safety (Zhang, 2005) due to food safety scares from cancer-causing Suan IV found in egg yolk (Paull, 2008) to Melamine in baby milk powder. Therefore, green product is highly desirable. Enterprises have realized that they must seek other kind of marketing ideas to improve their marketing activities if they want to survive amidst intense market competition and development at a time when green consumption and green marketing concept are emerging. Both society and enterprises have come to realize the ever-increasing environmental cum health consciousness among consumers, and they consider it as a marketing opportunity, so they have tried to catch up with the new trend through a series of rationalized marketing methods so that sustainable development process will be enhanced.

Ottman (2006) stated that from the year 2000, green marketing has grown up in the Western markets. According to Pride and Ferrell (1993), green marketing is efforts that an organization has made to produce, design, promote, price and distribute the products that will not harm the environment. Overall, green marketing has gone through several stages. According to Peattie and Crane (2005), green marketing entered its first stage in the late-1980s while the concept of green marketing was newly brought to industry. At that time marketers were expected to convert positive consumer responses into an ever-increasing goodwill and market share or sales, based on their green marketing activities. As our society has eyed pollution more than ever before, it is willing and ready to respond to green issues (Lee, 2008).

The second stage for green marketing was in the 1990s, as marketers experienced a backlash (Wong *et al.*, 1996), in which the consumers did not convert their environmental concerns and desires for green products into their purchasing action (Scherum *et al.*, 1995). In addition, Charter and Polonsky (1999) pointed that sustainable marketing was called in the late-1990s by the academic scholars, which aims to build and maintain a sustainable relationship with consumers, social environment and natural environment. At this stage, green marketing entered a "self-adjusting" form, and only the organizations that focused on sustainable business development chose to stay and improve on their products.

In the last twenty years, there has been emergence of critical thinking about environmental issues; and under those circumstances, a new group of consumers called green consumers have started to appear. Strong (1996) defined green consumers as those consumers who avoid those products that will imperil people's health, harm the environmental conditions, over consumption of energy, and generate unnecessary waste and use materials as origin from threatened inhabitants or the environment. Progressively green marketing entered the third stage since 2000. Through implementing advanced technology, strict government regulations, incentives and close inspection from various environmental organization and the media, various green products have been promoted and improved (Gurau and Ranchhod, 2005; Ottman, 2007). Green products are categorized into general green products, recycled products, products that do not use animals for testing, environmental-friendly detergents, organically-grown fruit and vegetables, ozone-friendly aerosols and energy-efficient products (Schlegelmilch *et al.*, 1996).

Sustainable development has been a dominating theme for the last 40 years of business, and most importantly, sustainable development such as environmental protection has been given more attention by government policy makers and business strategies (Johri and Sahasakmontri, 1998; Martinsons *et al.*, 1997). Two recurrent themes in the development of green marketing are dominant; firstly, the theme of an eco-friendly or going-green have become the mainstream (Hanas, 2007); secondly, in order to expand market, increase sales and benefit from having positive image of green brands, organizations from developed countries will make the first move to the international green marketing (Gurau and Ranchhod, 2005; Johri and Shasakmontri, 1998; Pugh and Fletcher, 2002). Western consumers have become more and more

environmental-concerned for a decade (Curlo, 1999), but in Asia, green consumerism has just emerged because of the increasing awareness of environmental protection (Gurău and Ranchhod, 2005), and the rapid economic growth has given Asian consumers a better affordability, so they are more active to consume green products (Li and Su, 2007). The reasons why international green marketers considered Asian consumers as a target group are firstly; the awareness of an ever-increasing concern for the environment among Asian consumers; secondly, the rapid development of economies have given Asian consumers with a better financial affordability through which the consumers have a willingness to spend more than the older generation.

Furthermore, as green issues have been focused onto public interests, the previous researches have shown the key role consumers play in their activities. Those consumers who avoid products that will harm their health and environment condition, over-consume energy, generate unnecessary waste, and utilize material origin from threatened inhabitants or the environment are defined as green consumers (Strong, 1996). In addition, there are two determinants of a green consumer: firstly, consumers tend to buy more energy-efficient, less polluting, environmental-friendly, recycled, and biodegradable products; secondly, the consumers tend to be active about environmental issues (Do Paco and Raposo, 2008).

Figure1.1: The Latent Demand for Green Products
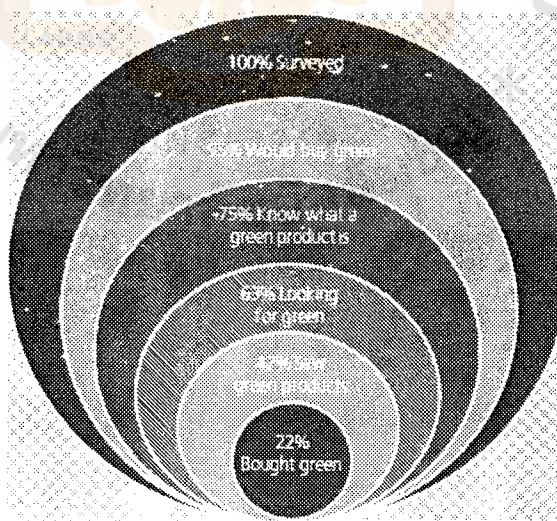
Source: Social Platform on Sustainable Lifestyle. *GMS/Deloitte Green Shopper Study*, 2009

As indicated in Figure 1.1, based on a study about green shoppers, the researcher could conclude that there is a huge opportunity for enterprises and marketers to fulfill the latent demand for green consumption. In fact, there is a larger potentiality to cultivate general shoppers to be green consumers by improving product development, strengthening in-store interaction and communication and ensuring product availability.

Grunert (1993) stated that private households' consumption activities led to 30 or 40 percent of environmental degradation. Chan and Lau (2000) asserted that profit-driven enterprises will be likely provoked into adopting the concept of green marketing in their operations if there is a high degree of concern on ecological issues expressed by the consumers who then injected it into some eco-friendly purchasing action. Follows and Jobber (2000) uttered that those consumers considered the importance of environment will assess the environmental consequences linked with the purchase of the product. Also, if the environmental consequences become important to the consumers, the acquisition of an environmentally responsible product will occur. Hence, to examine the way the consumers view ecological issues and the way those views are reflected in consumer behavior on green issues is a good starting point to understand the influence of environmental movements in a particular country.

Altogether, green marketing is not a "beauty method" to induce customer consumption and to create a positive public image. In contrast, it is a guide to sustain development and sustainable management of the process. The ultimate goals of green marketing are to improve environmental quality and to satisfy customers (Ottman *et al.*, 2006). Enterprise can obtain business opportunities from the solution of environmental crisis. While fulfilling enterprise profit and consumer satisfaction, the balance and harmony between man and nature will be enhanced through green marketing activity and green consumption..

More importantly, to understand consumer behavior in a particular region, regarding green issues, is a base for green marketers to develop a better understanding about green marketing in that region (Chan and Lau, 2000). Different people share different values, cultures and ideas, and behave differently as well. More or less people can be influenced by friends, colleagues, relatives, parents, and even outside forces of their own communities whenever they perform some behaviors. For example, in order to examine the impact of social influence and individuals attitude towards green issues concerning consumers' behavioral intention, the relationship among subjective norms,

attitudes and green purchasing behavioral intention have been highlighted by various researchers(Chan and Lau, 2000; Kalafatis *et al.*, 1999; Lee, 2008). However, changes in the market are, of course, highly unpredictable, and many things are out of people's control such as product availability and price. Therefore, to investigate those uncontrollable factors' impact on consumers' behavioral intention, perceived behavioral control has been employed to fulfill the needs of having a comprehensive understanding about consumer behavior by various researchers (Ajzen and Madden, 1986; Shepherd *et al.*, 1996; Tregear *et al.*, 1994; Magnusson *et al.*, 2001; Sparks and Shepherd, 1992; Davis *et al.*, 1995; Tanner and Kast, 2003; Takiainen and Sundqvist, 2005).

The predicament of the civilization in the industrial society, to a certain extent, includes the relation between human beings and nature that is the gain of the social and material wealth at the cost of nature. Through the technology and the development of economy, China has played an important role worldwide. However, it is inevitable whether or not the environment would be adversely affected by the economic and infrastructural development. As the whole global ecosystem is deteriorating, the fragile ecology in China is particularly affected. Mud-rock flows, landslides, soil erosion, snowstorms and other natural calamities occur frequently in China and desertification is threatening the region's eco-environment, compounded by man-made damage to the ecological environment as China's economy develops. China has been paying a high ecological price for its rapid economic growth in terms of worsening pollution and an accelerating depletion of many critical resources (Ho *et al.*, 1994). Jiang (2007) stated that China ranks first in air and water pollution, 90% of its city rivers have been polluted and less than 20% of the urban garbage has been treated. What's more, more than 400 million urban dwellers are besieged by polluted air. Martinsons *et al.* (1997) expounded that China has contributed 1.34% of its annual GDP into environmental protection, notwithstanding; it is still less than 2.5% in the USA and 5% in Australia.

Chinese government has come to realize the great significance of environmental protection, and the environmental protection industry has vigorously been supported. A new catchphrase, "Green GDP", has been assiduously propagated by the Chinese media and propaganda organization, which is an assessment of the country's GDP performance against the cost of resources and the impact on the environment. The first Green GDP report was released in 2006 by China's State Environment Protection Agency (SEPA) and the National Bureau of Statistics (NBS). Also, China's average Green GDP index in 2009

was 0.1151, which is shown on the latest "Green GDP Index Report for 300 Chinese Municipalities." Since 1970s, environmental industry has made great progresses. According to the speech of Chinese SEPA Minister, the growth rate of environmental protection industry in China will maintain the level of 15% over the next 5 years. By the year of 2005, the environmental industries contributed 1.4% of the GDP, and the state expects that the environmental industry's growth rate will not be less than 12% after "the 10th Five-Year Plan". Also, by the year 2010, the environmental industry will be able to account for 2% of the GDP. As indicated in the report of Investment and Prediction of Environmental Protection Industry in China (2010-2015), Chinese environmental protection industry is expected to maintain 15%-17% growth rate during the 11th Five-Year Plan, and the investment projects will cover water, atmospheric environment, solid waste, ecological environment, nuclear safety and radiation protection and environmental capacity-building. As the government predicted, the revenue of the environmental protection industry is expected to achieve 880 -1000 billion Yuan. What's more, speeding up the low-carbon economy has become the Chinese government's major task in the 11th Five-Year Plan. In particular, from the Chinese energy structure perspectives, low-carbon means energy-saving and low-carbon economy is encouraged on less consumption of power and less pollution-based economy. Moreover, the whole society is encouraged to participate in the environmental protection movement. Starting from 2009, all the shopping malls, hypermarkets and other shopping venues stop offering plastic bags to customers; in contrast, people are required and engaged to use "reusable bags". According to "Greendex 2010" (National Geographic, 2010), which grades countries according to the green consumption patterns of the citizens, Chinese consumers gained the third highest score (56.1) after India and Brazil, even if China is perceived as a seriously polluted country by western countries. Chinese consumers at this moment actively consume green products, such as recycled products, green food products, rechargeable batteries, re-furbished products, energy-efficient appliances, compact fluorescent bulbs, organic and not-toxic alternatives to household chemicals and pesticides.

Figure 1.2 World Carbon Emissions
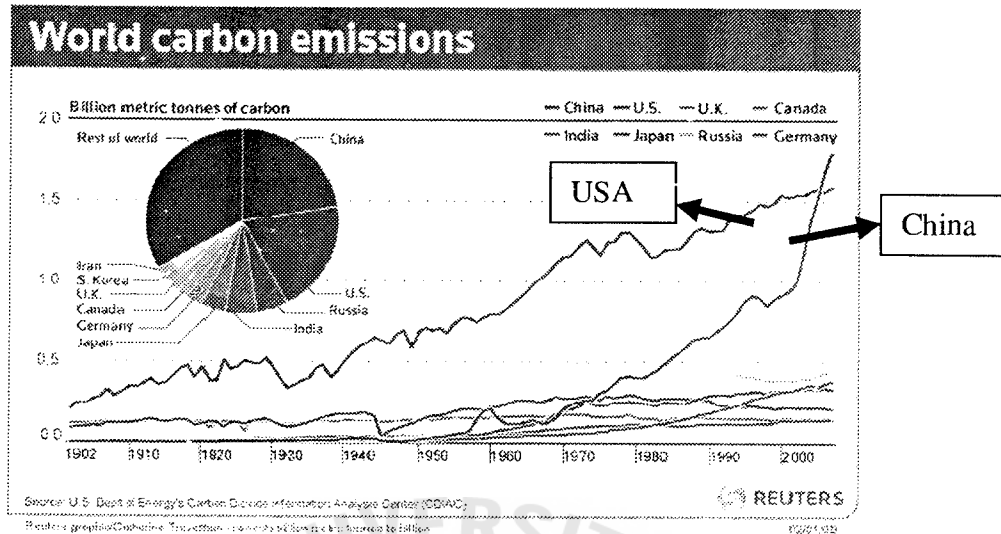
As shown in Figure 1.2, China's carbon emission sharply increased since 1980s ranked as number two after the United States. Additionally, after 2000, China's carbon emission significantly has increased to be number one in the world, which has pushed China develop low-carbon economy. To do so, the government implements a series of activities such as stricter regulations on energy conservation, the introduction of market mechanisms towards energy conservation, the increasing usage of renewable and nuclear energy, and promoting eco-labeling program and eco-friendly agriculture.

Figure 1.3 China Environmental Labeling

In addition, in 2003 the China Environmental Labeling Program was launched. About 200 enterprises, 40 sectors, 500 products and more than 21,000 varieties specifications products manufactured by 1,100 enterprises have passed the environmental

labeling certification which was indicated in Figure 1.3, which symbolizes superior quality and environmental-friendly performance, and in correspond to environmental protection and energy-saving, China Green Purchasing Network (CGPN) was established to promote sustainable development and consumption. Green promotional initiatives by Chinese government have helped the public to improve environmental awareness and to impel green consumption.

Figure 1.4 China Organic Food Certificate

Source: http://www.ofcc.org.cn/ (08/April/2010)

As indicated in Figure 1.4, the China Organic Food Certificate is given to those organically-grown goods such as fruits, vegetables, rice, and so on. China Organic Food Certification Center (COFCC) is a professional organization that is responsible for organic food certification and management under the Ministry of Agriculture of P.R. China. Also, COFCC is the only one accredited by Certification and Accreditation Administration of the People's Republic of China (CNCA) in China.

Figure 1.5 China Green Food Certificate

As indicated in Figure 1.5, China Green Food Development Center is responsible for green food certification. China Green Food Certificate is only endowed to those products that have been produced in a sustainable environment with healthy and nutritious quality control, non-environmental damage and safety. The logo reflects the concept of green issue: pollution free, non-environmental damage, safety, and so on.

Figure 1.6 International Symposiums on Green Public Procurement

As indicated in Figure 1.6, the Chinese government organized an international symposium on green public procurement to promote green consumption from the government's perspective. Through attention and vigorous promotion by the government and the media, green consumption has been greatly promoted. The core of green

consumption is to encourage people to purchase unpolluted products or those that are good for public health, to treat the waste under special surveillance so that pollution will be avoided, and to change public understanding of consumption as peoples' awareness of a healthy lifestyle, environmental protection and energy conservation in their demand of a comfortable life has risen. The most significant action taken by the government is green procurement. China's State Council encourages local government to purchase more energy-efficient products and will give priority to environmental-friendly products purchased by public, and also the ministry of Finance united with SEPA published "Implementation Guidance on Public Procurement Based on Environment Labeling Products", which echoes green consumption. What's more, environmental protection has been backed by a series action from the state. In 2007, the State Environmental Protection Agency (SEPA), the People's Bank of China (PBOC), and the China Banking Regulatory Commission (CBRC) introduced, implemented and supported a "Green Credit Policy", through which financial policy tools and incentives have been used to improve enterprise performance and reduce pollution, and the loan of those highly polluting and / or energy consuming enterprises and organizations will be blocked.

As such, this study intends to supplement previous Western-based studies through examining the phenomena of green marketing in the Chinese market. The factors influencing Chinese consumers' purchase intention for green products including product attributes, social influence and product availability are being investigated. This research would be able to contribute an evidence-based understanding about Chinese consumers' preference towards green food products to manufacturers, marketers, policy makers and academicians for further knowledge development.

In conclusion, this study aims to examine the consumers' actual purchase of general green product under the environmental attitude, perceived price, perception of availability, attitudes towards buying green products, ecological effects and subjective norms, through which marketers will be able to find out new opportunities to run the business and to discover new trends and new space in green marketing.

1.2 Statement of the Problem

The Chinese government and Chinese society has come to realize and become aware of the need for strengthening environmental protection, it has helped to bring about challenges as well as opportunities for policy makers and green marketers (Chan and Lau, 2000). A series of laws to ensure the basic principle for coordinated development among economy, social development and environmental protection has been implemented. Also, the energy conservation industry and the environmental protection industry have been energetically developed. A better understanding about environmental movement in a country is based on an investigation of what attitudes consumers have towards environmental issues and of how the consumers will behave in terms of green issues in that country (Chan and Lau, 2008).

In order to clarify as to what extents the factors influence on Chinese experienced customers' actual purchase behaviors of green products, it is necessary to test a relationship between each independent variable and dependent variable. The previous studies concerning environment concern, perception of product availability, attitudes, price, ecological affect and subject norm support have direct or indirect influence on consumers' acquisition of green product, will offer a vigorous support to this study. The study aims to answer the following key questions:

1. Is there any relationship between environmental attitude and actual green purchase behavior?

2. Is there any relationship between perception of availability and actual green purchase behavior?

3. Is there any relationship between attitude towards buying and actual green purchase behavior?

4. Is there any relationship between perceived price and actual green purchase behavior?

5. Is there any relationship between ecological effect and actual green purchase behavior?

6. Is there any relationship between subject norms and actual green purchase behavior?

11

1.3 Research Objectives

The objective of this study is to identify factors that engage Chinese consumers in actual purchase of green products. This research focuses on studying the environment attitude, perception of product availability, attitudes towards buying, perceived price, ecological affect and subjective norm. The research is aimed to examine issues in relation to actual green purchase behavior in Shanghai.

1. To evaluate the relationship between environment attitude and actual green purchase behavior

2. To examine the relationship between perception of availability and actual green purchase behavior

3. To analyze the relationship between attitude towards buying green products and actual green purchase behavior

4. To study the relationship between perceived price and actual green purchase behavior

5. To assess the relationship between ecological effect and actual green purchase behavior

6. To investigate the relationship between subject norm and actual green purchase behavior

1.4 Scope of Research

The principle variables used in this research are environment attitude, perception of product availability, perceived price, ecological effect, and subject norms. The dependent variable is the actual green purchase behavior.

The target population in this research is those consumers who have purchased green products from HiQuality Organic Food Chain Store in Shanghai, China. The researcher decided to choose HiQuality Organic Food Chain Store for this research because currently there are six key organic food specialty shops in Shanghai, and with 16 branches, HiQuality is the biggest organic food retailer in Shanghai. The questionnaire consisted of three parts in which the first part includes the factors that influence actual green purchase behavior which are environment attitude, perception of product availability, perceived price, ecological effects, and subject norms. The second part is

about actual green purchase behavior and the last part is about demographic information of the respondents.

The questionnaire is mainly adapted from Lee (2009), O'Donovan and McCarthy (2002), Magistris and Gracia (2008), Tarkiainen and Sundqvist (2005), Chan and Lau (2000). The questions about subjective norms are from Beharrell and Crockett (1992), the questions about attitude towards buying, perceived price and perception of availability are from Tarkianinen and Sundqvist (2005), the questions about environmental attitude are from De Magistris and Gracia (2008), the questions about ecological affect are from Chan and Lau (2002), and the questions about green purchase behavior are from Lee (2009) respectively.

1.5 Limitations of the Research

This research selected only one city in China, but the actual number of population is unknown. Thus, the sample size the researcher adapted may not be perfect to represent the characteristics of the entire target population. Second, even though social-demographic factors play a minor role to elicit the difference in the environmental attitudes and behaviors (Tanner *et al.*, 2004), the differences between purchase intention and demographic factors are disregard in the study. Also, this study did not cover all the factors that affect consumers' actual purchase behavior with respect to green product. In addition, the researcher only selected one product range, HiQuality Organic Food Chain Store, to study consumers' purchase behavior for green product. With respect to the differences among stores in terms of price level and variety of products, the different consumer purchasing behaviors are reflected through the characteristics in different stores. Moreover, this study is a general study about the actual green purchase behavior of any kind of green food products, so the information presented by this research may not be specific and sufficient enough for a particular product. The next constraints are limited time and lack of budget.

1.6 Significance of the Study

This research contributes towards better understanding of customers' buying behavior in terms of their environment attitudes, perceptions towards products availability, attitudes towards buying green products, perceptions towards price, ecological effects, and subject norms. The first step to generate marketing strategy, to keep the existing consumers and to attract new customers is to understand what consumers are concerned about (Endecott, 2004). Therefore, from a practical perspective, green product enterprises and marketers more or less may be able to understand the consumers more and to have a chance to see how experienced customers were affected to acquire green products. The producers a. d marketers can somewhat find a suitable path to approach more customers and to extend their market size. By doing so, marketers can evaluate their strategies and yield more effective strategies to target more consumers.

Secondly, for academicians, this work will enrich knowledge with regard to the influence of green food products on Chinese consumer behavior and know more characteristics of those Chinese consumers who have purchased green food products.

The third benefit of this study can be for the policy makers in Shanghai to evaluate or adjust the current social and environmental policies so that citizens, organizations and entrepreneurs will be able to understand the impact of their environmental behaviors on the environment and society, through which the awareness of the importance and urgency of environmental protection will arise.

1.7 Definitions of Terms

Green Purchasing Behavior: Mostafa (2007) stated that green purchasing behavior is to consume those products that will not harm the environment but will be recycling use, or will be responsive to environmental concern.

Attitude towards Buying: Ajzen (1991) defined attitude towards behavior as the extent to which consumers have a favorable or unfavorable appraisal or assessment of the behavior in question. Thus, the attitude towards buying behavior refers to the degree to which consumers express his or her likes or dislikes towards purchasing a particular product.

Consumer: Windham and Orton (2000) defined consumer as an individual or an organization that consumes commodities and services for personal use

Ecological Affect: Dispoto (1997) defined ecological effect as the extent of emotional involvement where people regard the environmental issues.

Environmental Attitude: Magistris and Gracia (2008) state that environmental attitude is a degree of judgment concerning environmental pollution, environmental damage, and conservation practices and recycled use.

Green Consumer: Strong (1996) defined those consumers who avoid the products that will imperil people's health, harm environmental condition, over-consume energy and generate unnecessary waste and use materials as origin from threatened inhabitants or the environment.

Green Products: Schlegelmilch *et al.* (1996) categorized green products as the products that are recycled and do not use animal for testing, environmental-friendly detergents, organically-grown fruit and vegetables, ozone-friendly aerosols, energy-efficient products.

Perceived Price: According to Takiainen and Sundqvist (2005), perceived price is considered as perception, feelings and attitudes towards the importance of price when consumers make an acquisition.

Perception of Availability: According to Ajzen (2002), the considerable gap between behavioral intention and actions can be formed by perceived behavior control. Perceived behavior control refers to an individual perception of how easy or how difficult the situation will be for him or her to perform a particular behavior, and sufficiency level of product availability can determine the level of easiness or difficultness of purchasing goods, which is clearly out of consumers' control.

Subjective Norm: Ajzen (1991) mentioned that subjective norm stands for a social factor that refers to social pressure towards an individual about whether or not the individual perform a certain behavior.

CHATPER 2
LITERATURE REVIEW

This chapter reviews literature relevant to the study to build a research framework and is divided into three main sections. The first section reviews the relevant theories to support conceptual framework of this study, including definitions and concepts related to dependent and independent variables. The second section emphasizes on the related review of literature. Also, the third section focuses on the related literature review concerning independent variables and dependent variables, and the last section is about the previous studies.

2.1 Theory and Model necessary to form conceptual framework

This part explains the theories that are necessary to develop the conceptual framework in this research. The theories explained in this research are the theory of reasoned action (TRA) and the theory of planned behavior (TPB).

2.1.1 Theory of Reason Action (TRA)

The theory of reason action (TRA) was developed by Ajzen and Fishbein in 1975 and is a well-established intention model in which intention is a predictor of a behavior. The TRA model is shown in Figure 2.1:

Figure 2.1: The TRA Model
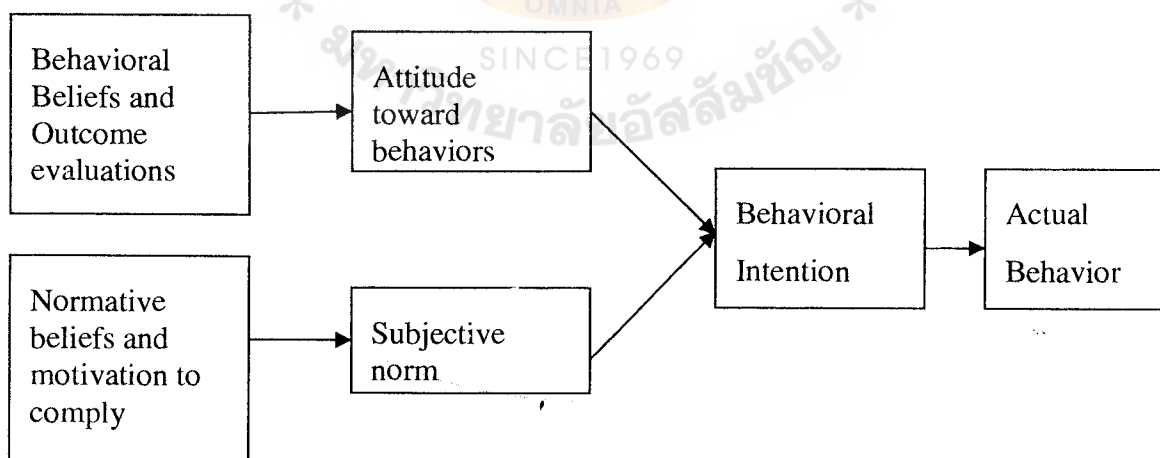
Source: Ajzen, I., & Fishbein, M. (1980). *Understanding attitude and predicting social behavior.* New Jersey: Prentice Hall, Englewood Cliffs.

As indicated in Figure 2.1, an individual's behavioral intention directly determines the level of his or her performance of actual behavior, and the behavioral intention consists of two fundamental issues that are attitude and subjective norm (Algahtani and King, 1999). Attitude towards behavior refers to an individual's favorableness or unfavorableness towards a specified behavior, and subjective norm is defined as an individual's perception that those important references of his or her personal opinion that he or she should or should not behave in question (Ajzen and Fishbein, 1980). With TRA model, a behavior is more predictable when an individual's behavior is totally under volitional control (Bright, 1993). In fact, the higher the intention that an individual has, the higher will be the possibility that a specified behavior will actually be presented (Fishbein and Manfredo, 1992).

2.1.2 Theory of Planned Behavior (TPB)

Kalafatis et al. (1999) mentioned that the theory of planned behavior (TPB) developed by Ajzen in 1991 is a theoretical improvement of the theory of reasoned action (TRA), through which the uncontrollable elements involved in consumers' performances of a particular behavior have been assessed (Ajzen, 1991). In other words, TPB model can be used to predict behaviors when an individual's behavior is not under full volitional control (Bright, 1993). The acknowledgment of TPB has been proved from different studies (Armitage and Conner, 1999; Sheppard et al., 1988); TPB model has been adopted in many fields, including information technology, sociology and social issues, medical and nursing professions (Armitage and Christian, 2003). The TPB model is shown in Figure 2.2

Figure 2.2: Structure of Theory of Planned Behavior
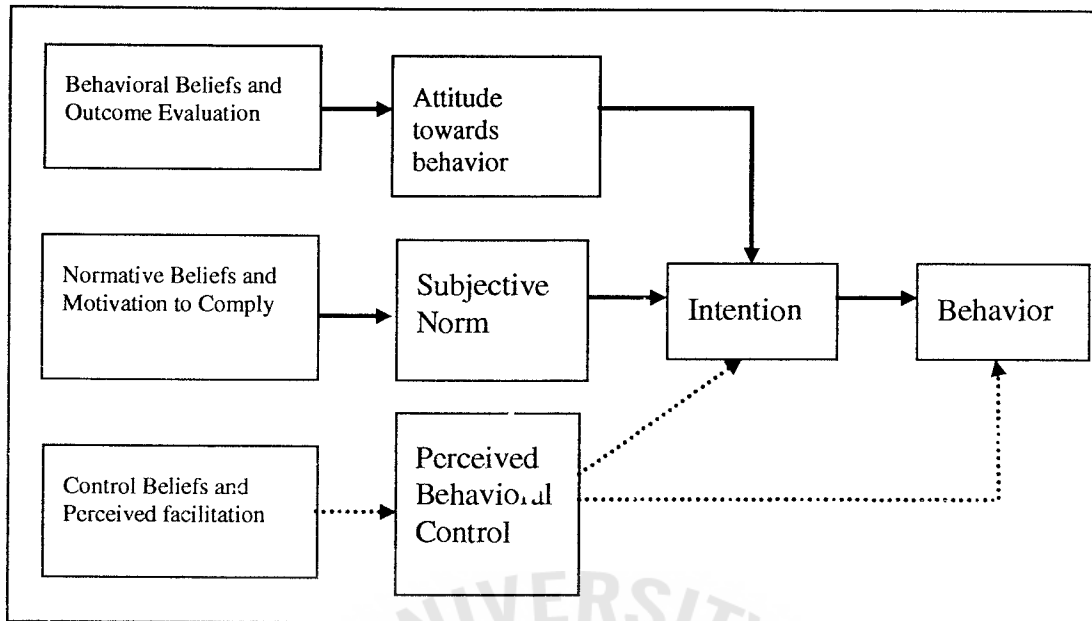
Source: Ajzen, I. (1991). The theory of Planned Behavior. *Organizational Behavior and Human Decision Process*, 50(2), 179-211.

As indicated in Figure 2.2, a solid line (——➤) symbolizes the TRA (Theory of Reasoned Action) model, and a dotted line (·······➤) stands for another determinant of behavioral intention that makes TPB a theoretical improvement of TRA, which is perceived behavioral control. The TPB model consists of three distinctive elements: behavioral beliefs, normative beliefs and control beliefs which respectively link to attitude, subjective norms and perceived behavioral control. Ajzen (1991) stated that to fulfill a particular behavior, behavioral intention is the most vital factor to envisage human behavior. TPB provides a clear model to expatiate the influence of attitudes, subjective norm and perceived behavioral control on consumers' purchase intention. Hence the actual purchase of a particular product has been exhibited. The TPB model works well when people behave under incompletely volitional control.

2.2 Supporting Literature

2.2.1 Behavioral Intention of Green Purchase

Behavioral intention is equivalent to the actual behavior as the timing gap between intention and behavior is narrow and outstandingly when people are free to convert their intentions to concrete behavior (Beharrell and Crockett, 1992). Page and Luding (2003) pointed out that behavioral intention occupies a vital role to actual behavior. Four key elements: target, action, context and time should be included into

18

Behavioral intention and a particular action (Ajzen, 2002). Ajzen and Fishbein (1980) pointed out that if these four elements are excluded, the relationship between intention and behavior will be weak. Moreover, the prediction of intentions will not be accurate. In this study, behavioral intention refers to those consumers who have purchased green products from green product shops:

Target: green products

Action: acquisition

Context: green products shops

Time: From the past until now

With respect to green marketing, it is difficult to predict consumers' purchasing behavior and the formation of a final purchasing decision is more intricate than conventional products (Byrne and Polosky, 2001). However, a positive relationship between green purchasing intention and green purchase behavior is proved (Schahn and Holzer, 1990; Lansana, 1992). Soonthonsmai (2001) claimed that consumer behavior can be examined through longitudinal study or self-reported behavior, self-report about former action providing an accurate determination of actual behavior has been proved by some previous researches (Clark and Tiffit, 1966). The investigation of actual buying behavior of a product having particular attributes can help to measure an individual's purchase behavior (Roozen and De Pelsmacker, 2002). Therefore, consumers' actual purchasing behavior of green product is tested based on self-reported behavior in this study. Also, the study identifies behavior as the actual purchase of green product by those consumers who have purchased green products from green product shops.

2.2.2 Attitude towards behavior

Ajzen (1991) defined attitude towards behavior as the extent to which an individual expresses his or her favorableness or unfavorableness towards evaluating a particular behavior in question. Attitude towards a behavior is the sum of the outcome of an individual's strength and assessment of beliefs for each of the crucial beliefs towards a certain behavior under examination (Beharrell and Crockett, 1992). The more positive attitude consumers have towards a behavior, the stronger intention the consumers will have to perform the behavior under his or her control (Ajzen, 1991). Ajzen and Fishbein (2005) stated that there are two types of attitude; the attitude towards particular objects, cultural community, institutes, policies that can represent a good measurement for various behavioral actions, and another is the attitude towards a particular behavior, symbolizing

a determination of a solo behavior. Consumers' purchase intention and purchase behavior can be predicted by attitude (Hill *et al.*, 1996), and some intervening factors such as searching time, availability, price, product recognition can also affect individual's attitude. In this research, attitude refers to attitude towards a specific behavior of buying green products and attitude towards environment.

- **Environmental Attitude**

As Ajzen (1991) defined attitude towards behavior as the extent to which an individual expresses his or her favorableness or unfavorableness towards evaluating a particular behavior in question, Magistris and Gracia (2008) considered environmental attitude as a degree of judgment concerning on environmental pollution, environmental damages, conservation practices, and recycle use. Kotchen and Reilingn (2000) studied the relationship between environmental attitudes and environmental-based behaviors. Environmental attitude plays a key role in predicting environmental-based behavior and participation decision as environmental attitude is considered a substantial indicator of behavioral intention (Kotchen and Reiling, 2000). For example, consumer will be more likely to buy products or services from those organizations that are perceived as socially-responsible (Charter, 1992), and the products or services from those organization perceived as socially irresponsible will be boycotted by many consumers (Friedman, 1970). In fact, as consumers express their attitudes both positively or negatively; they will be actively translated to actual deeds and produce a certain outcome. Grunert and Juhl (1995) concluded that as consumers hold positive attitudes towards environmental issues, an active acquisition of organic foods and positive frequency of acquisition will occur. Padel and Foster (2005) discovered that the reason for consumer to make decision of purchasing organic food is their attitudes towards environmental protection. Last but not least, according to Walsh and McGuire (1992), consumers' attitudes directly link to energy-saving consumption and eco-purchase.

- **Attitude towards buying**

Ajzen (1991) highlights that the individual has a stronger intention to perform a behavior with consideration only when the individual' attitude with respect to that behavior becomes more favorable. Loureiro *et al.* (2001) stated that when consumers purchased organic apples, their attitudes towards food safety was one of their motivations. Durham and Andrade (2005) pointed out that consumer' attitude towards the health was one of the major reasons to purchase organic food products. Padel and Foster (2005) also expounded that as consumers perceived organic goods as food products that can ensure

them better health, they would be more active to purchase organic food products. Referring to the aforementioned theory of attitude, the attitude towards buying, this research, involves the concern on quality, tastiness, health, and reasonableness of green products.

2.2.3 Perceived behavioral control

Human beings cannot control all human behaviors. Therefore, it is importantly necessary to involve perceived behavioral control (PBC) in consideration when trying to predict the actual behavior (Ajzen, 2002). PBC is defined as an individual's prediction of how easy or how difficult it will be for the individual to carry out the behavior (Ajzen and Madden, 1986). PBC comprises two distinct elements: Perceived self-efficacy which describes how easy or difficult it will be for an individual to perform a certain behavior, and Perceived controllability, which refers to the degree to which a performance of an individual's behavior will be under his or her control. Tavousi *et al.* (2009) suggested that the internal control factors or the external control factors are necessary to explain the control variables. Manstead and Van Eekelen (1998) defined that internal factors refer to ease/difficulty, confidence and/or ability in the performance of a particular behavior reflected by motivation, knowledge, willpower, information, and skills. Also, Ajzen (2002) defined availability, time, money, information, difficulty and expected barriers. In this research, PBC refers to consumers' perception of external control over acquisition of green products. Therefore, the elements of external factors will be selected to product availability and price.

● **Perceived price**

With reference to the foregoing theory of Perceived behavioral control, price can be considered as one of the external factors. Price is the amount of money paid to purchase goods or service (Peter and Olson, 1990). Roberts (1996) mentioned that the most essential purchasing criteria are price, convenience, and value. Price has played a key role in purchasing decision-making, and consumers have become price-sensitive when they approach to "buying green" issue (Mandese, 1991). For example, consumers especially those low-income consumers may refrain from purchasing organic food products due to the high price (Shepherd *et al,* 1996). For organic products, relatively high price has been a crucial obstacle for avoidance of purchasing organic product (Tregear *et al*, 1994; Magnusson *et al*, 2001; Hill and Lynchehaun, 2002, 2001; Batt and Giblett, 1999; Padel and Foster, 2005; Lea and Worsley, 2005; McEachern and Willock,

2004; Vindigni *et al.*, 2002; Botonaki *et al.*, 2006; Fotopoulos and Krystallis, 2002; Worner and Meier-Ploeger, 1999; O'Donovan and McCarthy, 2002; Zanoli and Naspetti, 2002; Hughner *et al.*, 2007; Byrne *et al.*,1991). Moverover, according to Takiainen and Sundqvist (2005), perceived price is considered as perception, feelings and attitudes towards the importance of price when consumers make an acquisition, because price can affect buying intention and demand of products (Sparks and Shepherd, 1992).

- **Perception of availability**

Product availability has influenced consumers to perform their purchasing behavior like buying organic food (Davies *et al.*, 1995). If products are not easy to be found or are unavailable, the consumers may have difficulty to obtain the products (Tanner and Kast, 2003). There is an obstacle for the consumer purchasing organic food in a shop if the organic food is unavailable (Magnusson *et al.*, 2001). According to Ajzen (2002), the considerable difference in behavioral intention and actions can be formed by perceived behavior control, and unavailability is a hindrance for purchasing goods, which is clearly out of consumers' control (Takiainen and Sundqvist, 2005). Unavaliability is also one of the reasons that consumers refrain from buying organic food (Boccaletti and Nardella, 2000; Mangusson *et al.*, 2001; Fotopoulos and Krystallis, 2002; Zanoli and Naspetti, 2002). Based on previous studies, perception of availability in this study refers to the availability and accessibility of green products.

2.2.4 Subjective norm

According to Ajzen (1991), subjective norm symbolizes a social factor that refers to social pressure towards an individual about whether or not that the individual should perform a certain action. George (2004) stated that an individual's proclivity should be influenced by subjective norm in turn to engaging in the behavior. That is to say, an individual becomes more likely to perform a particular behavior as social expectations that individual should be encouraged is the behavior in question. East (1997) mentioned that "subjective" means what an individual think, and "norm" means the individual understands about what others think he/ she should perform. Kalafatis *et al.* (1999) mentioned that friends, parents, religious organizations, etc are the distinctive referents that are involved in subjective norm. As indicated by Lee (2008), social influence plays a key role in adolescents when it comes to purchase green products. In other words, the network and the atmosphere among youngster may be able to yield and generate a theme of environmental-based purchase behavior and the youngest may be

encouraged and influenced by others to participate in purchasing green products. Agarwal (2000) asserted that the social networking between females can exercise a strong influence which should compose a significant fundamental for a force of environmental collectivism. Chang (1998) analyzed the correlation between subject norms and attitude towards behavior and the causal link from norms to attitude was tested leading to a positive relationship through the path from subjective norm to attitudes towards behavior was found. In other words, social environmental can affect individuals' attitude formation (Chang, 1998).

2.3 Related Literature Review

2.3.1 The Related Literature between Attitude and Behavioral Intention

As mention by Bagozzi et al. (1990), the level of a person's intention in the attitude-behavior relation depends on the efforts that the person needs to put to perform a specified behavior. Follows and Jobber (2000) applied attitude-behavior model to study about consumers' environmentally responsible purchase behavior. In the study, a hierarchical path from values through attitudes to purchase intention to purchase was defined, and the finding shows that the negative attitude towards individual consequences can eliminate the positive influence of environmental attitude on purchase intention. De Magistris and Gracia (2008) identified the influence of consumers' attitude on consumers' decision-making process, and the researchers found that when consumers have active attitudes to follow a healthy lifestyle, they will hold more positive attitude towards environmental issues and organic food products and furthermore they are most likely to have a higher intention to buy organic food products. Soler and M.Gil (2002) studied about consumers' acceptability of organic food in Spain, in which consumers' attitudes towards food safety, environmental impact of agriculture, nutrition and food price sensitiveness were examined. The results show a significant relationship between consumers' attitude towards environmental impact of agriculture and their decision to pay premium price for organic products. Also, consumers' food safety concerns play an important role in their decision-making process as well.

2.3.2 The Related Literature between Perceived Behavior Control (Perception of availability and Perceived price) and Behavioral Intention

Perceived behavior control (PBC) presents a way through which an individual perceives his or her own ability to perform a specified behavior. According to Dean *et al.* (2008), PBC has a significant influence on consumers' intention to purchase organic apples. Thøgersen (2007) indicated that PBC plays a major role in consumers' purchase of organic food products. Perceived quality and perceived value were employed to investigate the formation of consumers' intention for purchasing organic product (Kyriakopoulos and van Dijk, 1997). In addition, PBC also presents a significant influence on medical professionals' ethical behavior (Randall and Gibson, 1991). Moreover, PBC contributes strong influence on purchase intention of organic food in Finland (Tarkiainen and Sundqvist, 2005) and of organic vegetables (Sparks and Shepherd, 1992).

2.3.3 The Related Literature between Subjective Norm and Behavioral Intention

Subjective norm reflects a force of social influence that can influence consumers 'believes inside their communities (Chung and Change, 2005). Ajzen (1991) pointed out that social influence can motivate an individual to act in a way that his or her referent group expects. Lee (2008) carried out a study to examine green purchase behavior of young consumers in HongKong, and the findings show that social influence is the best predictor of young consumers' green purchase behavior. In addition, the significant influence of subjective norms on purchase intentions was explicated in a cross-market examination which was conducted by Kalafatis *et al.* (1999) applying TPB model to test consumers' purchase intention in UK and Greece. Tarkiainen and Sundqvist (2005) applied a modified TPB model to examine Finnish consumers' buying intention of organic food, in which subjective norm influences consumers' intentions indirectly through attitude formation.

2.3.4 The Related Literature between Ecological Affect and Behavioral Intention

Smith and Reynolds (2008) mentioned that affect can be divided into positive affect and negative affect. When people are positively affected, they feel good, safe, confident, relaxed and valued. In contrast, when people feel shy, angry, irritated and unhappy, they are negatively affected. In addition, affect is one of the predictor of behavioral intention (Smith and Reynolds, 2008). The role of affect has been highlighted

through various studies, and emotional states have been injected to the model of traditional consumer behavior (Philips and Baumgartner, 2002). When people are in a positive mood, they become non-analytic, top-down and creative; when people are in a negative mood, they are more analytical and take more efforts (Murry and Dacin 1996).

In this study, ecological effects refer to a negative effect towards environmental issues to test how consumers' ecological affect influences their purchasing behaviors. As mentioned above, when consumers have negative affect, they generally become more analytic and effortful with environmental issues. Dispoto (1997) defined that ecological effect as the extent to which people emotionally responded to environmental issues. Li (1997), Maloney and Ward (1973) asserted a positive relation between ecological effect and behavior. Hines *et al.* (1987) found that the correlation between ecological affect and behavior was at an average level with 0.37. Chan and Yam (1995) explained that ecological affect could be considered as a dissimilar factor that affects individual's behavioral response.

2.4 Previous Studies

De Magistris and Gracia (2008) studied about the decision to buy organic food products in Southern Italy. The objective of this study was to explore how consumers in Southern Italy make their purchase decision for organic foods. A total of 200 questionnaires were distributed in Naples. A SEM (Structural equation modeling) method was utilized to analyze the factors that influenced consumers' purchase intention for organic foods. The result of the study was that consumers' attitude towards health and environmental issues are the most vital elements to form consumers' decision for acquisition of organic food products. In addition, consumers' knowledge about organic food products positively determined consumers' attitudes towards organic food products. Last but not least, for those consumers who have health-concerns in terms of eating a healthy diet and leading a balanced lifestyle, they actively express their attitudes towards organic foods and environmental issues, and participate into purchasing organic food products.

Tarkianinen and Sundqvist (2005) studied Finnish consumers' acquisition of organic food through TPB model developed by Ajzen (1991), which examines the extension of TPB in the context of organic food purchase. 200 questionnaires were distributed at one local hypermarket in Southeastern Finland, and a quota sampling

method was used. In the study, the influence of the subjective norms, attitude and perceived behavioral control on consumers' purchase intention and the relationship between purchase intention and actual purchase were examined. The researchers identified three factors including attitude towards buying, price and perception of availability that can affect consumers' purchase intention. A SEM (structural equation modeling) method was used in the path from SN (subjective norms) to attitude and then the intention to purchase organic food. The research contributes some highlights. First, in terms of fitting data, the adjusted model of TPB model is better than the original TPB model. In other words, subjective norms play a distinctive role in organic food-purchasing context that differs from that in original TPB model. Second, adjusted TPB model is able to estimate consumers' purchase intentions better than the original TPB model. Third, consumers' purchase intention is indirectly affected by subjective norms through the formation of attitude. Fourth, there is a significant relationship between behavioral intention and self-reported behavior. That is to say, self-reported behavior can be reliably envisaged by behavioral intention

Beharrell and Crockett (1992) studied the different beliefs and values between organic farmers and conventional farmers and the influences of social factors on food provision in a supply chain. The TRA model (the theory of Reasoned Action) was used in the study to construct studying attitude and their social context and characterizes beliefs and values. Depth interview was employed to get more accurate information in terms of farmers' attitude towards conservation, and multi-regression approach was used to prove the validity of the TRA model applied in this study. The results firstly show that most farmers perform an organic-conventional farming. Secondly, there is a significant difference between their attitudes towards food taste, environmental-friendliness and decline of organic farming due to food shortage. In addition, even though organic and conventional farmers have the same economic appraisal towards organic farming, their beliefs are different in terms of perception of taste of food, environmental-friendliness and decline of organic farming due to the shortage of food. Moreover, differences in the value system of organic farmers, environmental quality and food quality push organic farmers to convert to conventional farming.

Chan and Lau (2002) studied the effects of cultural values, ecological affect and ecological knowledge to Chinese consumers' green purchasing behavior. The research was carried out in Beijing and Guangzhou. 150 households from each city were randomly chosen, and 274 questionnaires were collected from these two cities. First of all,

Two-Way ANOVA was used to test the possibility of the combination of corresponding descriptive statistics from both cities. Secondly, a SEM (Structural equation modeling) approach was utilized for examining the five hypotheses. Third, the confirmatory factor analysis was employed to corroborate all the variables. The results of this research discovered a significant path respectively from ecological effects and ecological knowledge to green purchase intention and actual green purchase behavior. Even though Chinese consumers actively talk of ecological effects and their purchase intentions for green products, Chinese consumers' actual purchase of green products and ecological knowledge are low.

O' Donovan and McCarthy (2002) studied Irish consumers' preferences for organic food, in which four determinants were covered, including health consciousness, perceived value, income and environmental concern to test Irish consumers perception towards organic meat. 250 questionnaires were distributed to three identified groups, which are the respondents who purchased, intended to purchase and purchased without any intention. The hypotheses were tested by Correlation Coefficient and Chi-Square statistical methods. The results of this study firstly show that consumers who actively participate in purchasing organic meat express higher concern on health issues as compared to non-purchasers. Second, for those consumers who purchase organic meat, they believe the quality, safety, labeling, production and value of organic meat are better than conventional meat. Third, product availability and its price are the critical factors that influence the purchase of organic meat. Moreover, the study also indicated that the higher socio-economic level of consumers, the higher willingness consumers will have to purchase organic meat, and the higher concern consumers have on food safety and environmental issues.

Lee (2008) carried out a study to seek an opportunity for green marketing in HongKong through investigating young consumers' green purchase behavior. The research aimed to define important determinants that can influence young consumers' purchase behavior towards green products. Totally 6,010 questionnaires were distributed; 7 factors were included to test the relationship between each factor and green purchase behavior, including social influence, environmental attitude, environmental concern, perceived seriousness of environmental problems, perceived environmental responsibility, perceived effectiveness of environmental behavior and concerns on self-image. Multi-Regression analysis was employed, and the significant result in this study was social influence plays the most important role in young consumers' green purchase

27

behavior followed by environmental concern and concern on self-image in environmental preservation. The results may be useful for international marketer to predict other Asian markets.

D'Souza *et al.* (2006) carried out a study about consumers' perception towards green products in Australia. The objective of this study was to find out the influence of various factors including product labels, product packaging and ingredients, consumers' previous purchase experience of the product, price and quality of the products, consumers' corporate perception and corporate regulatory compliance on consumers' green purchase intention. 155 questionnaires were distributed for data analysis, and AMOS approach was employed to test the consumers' overall perception towards green products and their purchase intention. Based on the results, the researchers firstly indicated that the factor that can significantly result in a negative overall perception towards green products is consumers' corporate perception towards the companies that mainly focus on profitability rather than pollution reduction and regulatory preservation. However, consumers' previous buying experience with the product can lead to a positive effect on their perception. More importantly, the results pointed out that consumers would prefer green products with high quality and cheaper price to that with low quality and higher price. It is an indication for marketers to have a better understanding to gain market share for green products.

Table 2.1 Summary of Previous Studies

Author	Objective	Key Findings
De Magistris and Gracia (2008)	To explore how consumers in Southern Italy make purchase decision for organic foods	Consumers' attitude towards health and environmental issue are the most viral elements to form consumers' decision for acquisition of organic food products. Consumers with higher concern about healthy diet and balanced lifestyle will be more actively express their attitudes towards

		organic foods and environmental issue, and participate in purchase organic food products.
Tarkianinen and Sundqvist (2005)	To examines the extension of TPB in the context of organic food purchase	The adjusted model of TPB model is better than the original TPB model to estimate consumers' purchase intention. Subjective norms play a distinctive role in organic food-purchasing context that differs from that in original TPB model. There is a significant relationship between behavioral intention and self-reported behavior
Beharrell and Crockett (1992)	To explore the different beliefs and value between organic farmers and conventional farmers and the influences of social factors on food provision in supply chain	Most farmers perform an organic-conventional farming. Secondly, there are significant differences between their attitudes towards food taste, environmental-friendliness and decline of organic farming due to food shortage. In addition, organic and conventional farmers have the same economic appraisal towards organic farming, but their beliefs are different in terms of perception towards attributes. Also, differences in value system of organic farmers, environmental quality and food quality push organic farmer to convert to conventional farming.

Chan and Lau (2002)	To investigate the effect of cultural values, ecological affect and ecological knowledge to Chinese consumers' green purchasing behavior.	A significant path respectively from ecological affect and ecological knowledge to green purchase intention and actual green purchase behavior was found. Chinese consumers actively utter ecological affect and purchase intention for green products, but their actual purchase for green products and ecological knowledge are low.
O'Donovan and McCarthy (2002)	To explore the influences of four variables on consumers' preference towards organic food	Consumers with higher intention towards organic food products will have higher health concern. The higher socio-economic level consumers in, the higher willingness consumers have to purchase organic meat, and the higher concern consumers have on food safety and environmental issues.
Lee (2008)	To discover the important factors that can influence young consumers' purchase behavior towards green products in HongKong	Social aspects plays the most important role in young consumers' green purchase behavior followed by environmental concern and concern on self-image in environmental preservation, through which international marketer may be able to predict green marketing in other Asian markets.

D'Souza *et al* (2006)	To find out the influence of various factors on consumers' green purchase intention	Consumers' corporate perception towards the companies with high focus on profitability rather than pollution reduction and regulatory preservation can significantly result in a negative overall perception towards green products. Consumers' previous buying experience with the product can lead to ι positive effect on their perception. Consumers would prefer green product with high quality and cheaper price to that with low quality and higher price.

CHAPTER 3

THEORETICAL AND CONCEPTUAL FRAMEWORK

This chapter exhibits the formation of conceptual framework used to test the factors influencing consumers' actual purchase towards green products, in Nanning city. This chapter consists of four sections. The first section is about the theoretical framework, and the second section is about the illustration of the conceptual framework. The third section demonstrates the specific hypotheses for testing the relationship between each variable, and the final section presents the operationalization of the independent and dependent variables in detail.

3.1 Theoretical Framework

The correlation between different variables will be explained through various previous studies in the following paragraphs. Green purchasing behavior is influenced by various factors.

One of the main factors of green purchasing behaviors is subjective norm, which is exhibited in the extended Fishbein model adapted by Beharrell and Crockett (1992) to conduct a comparative study of organic farmers and conventional farmers to study their attitudes and behavior. Tarkianinen and Sundqvist (2005) adapted the Theory of Planned Behavior (TPB) to assess the correlation between subjective norms and attitudes and intention to purchase organic food. O'Donovan and McCarthy (2002) investigated the Irish consumers' formation of purchase intention for organic meat, in which environmental concern was an undifferentiating variable. The researchers also found that those consumers who purchased organic meat placed higher importance on health than those who did not purchase. Chan and Lau (2002) studied the relation between cultural values, ecological effects and ecological knowledge and Chinese consumers' green purchase behaviors, in which ecological effects and ecological knowledge positively affect the Chinese consumers' intentions to green purchase.

All the factors that have an influence on green purchase behavior are shown from Figures 3.1 to 3.5.

Figure 3.1: Figurative Outline of the Extended Fishbein Model
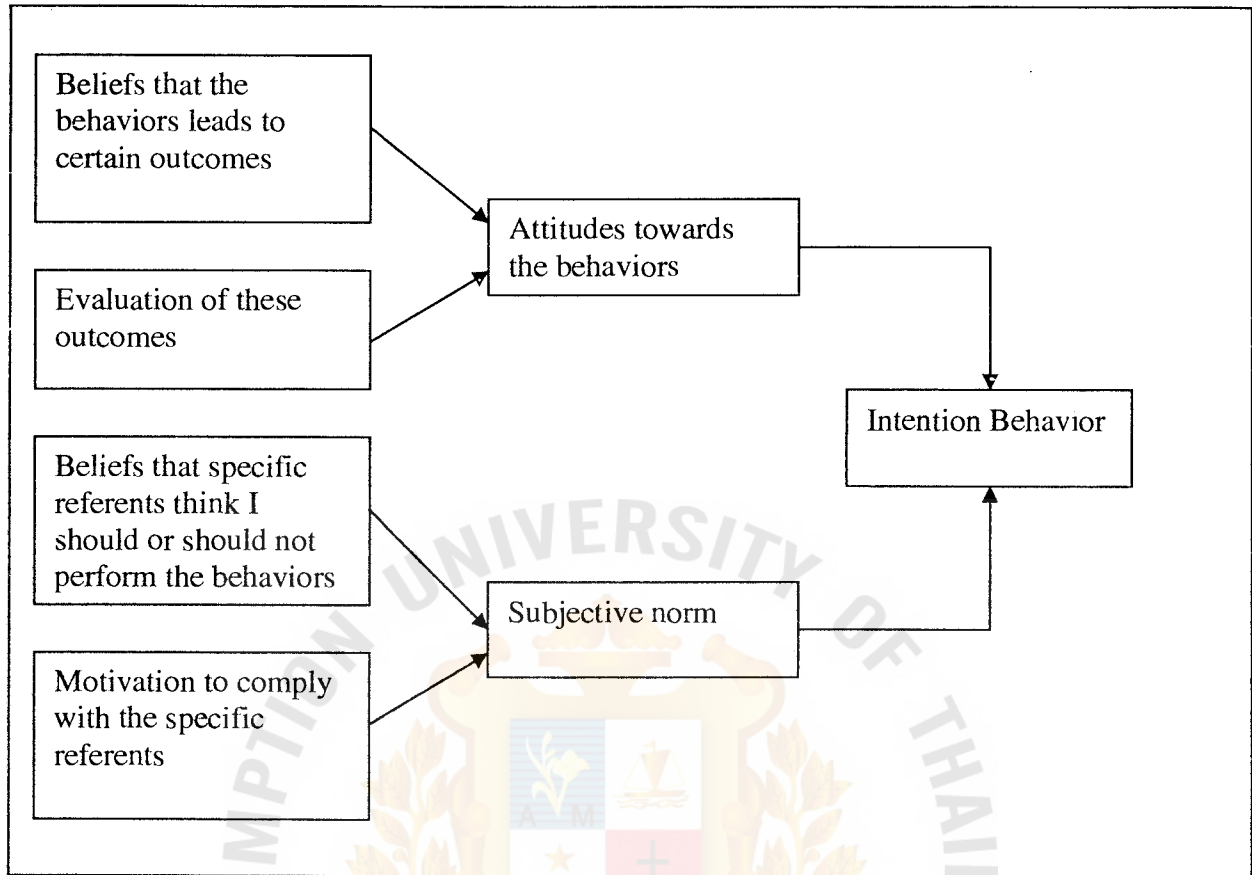
As indicated in Figure 3.1, Beharrell and Crockett (1992) studied the different beliefs and values between organic farmers and conventional farmers. They also sought the social factors' influence on food provision in supply chain. In this study, the Extended Fishbein Model also named the Theory of Reasoned Action was used to construct the study of attitudes and their social context and characteristics, beliefs, and values.

In this study, subjective norm is defined as the sum of the individual's normative beliefs and motivation to comply with the normative reference, and attitudes and subjective norms are made up of a small number of key beliefs known as normative beliefs. In this study, green purchase behavioral intention could be equivalent to actual behavior as the moment in time between intention and behavior is short and more significantly where the individual is free to act on his or her intentions.

In this study, the depth interview method was used, through which the questionnaire was used to evaluate the elements of behavioral intention, belief likelihood, and evaluation of beliefs, normative beliefs and motivation to comply. Belief likelihood aims to measure whether or not the respondents likely think each of the modal salient is to be true. Belief evaluation examined the respondents as to how positively or negatively they see the outcome of each main belief to be. Normative belief tested the respondents about the extent to which they think each of the important referents to be on their side for farming organically. Motivation to comply analyzed the respondents to the extent to which they act in accordance with each important referent.

Based on a differentiation analysis towards salient beliefs and ferments between organic and conventional farmers, the research found that over 94% of farming behavior were organic-conventional. However, three significant attributes were found: organic farming is better for the environment, organic farming produces better tasting healthier food, and organic farming would decline if food surplus turns to food shortage. The research concluded that organic farmers and conventional farmers shared a common overall economic assessment of organic farming, but their beliefs and perceptions of certain attributes were different, so three significant attributes were positively associated with organic farming.

Figure 3.2: Model for intention of buying organic food
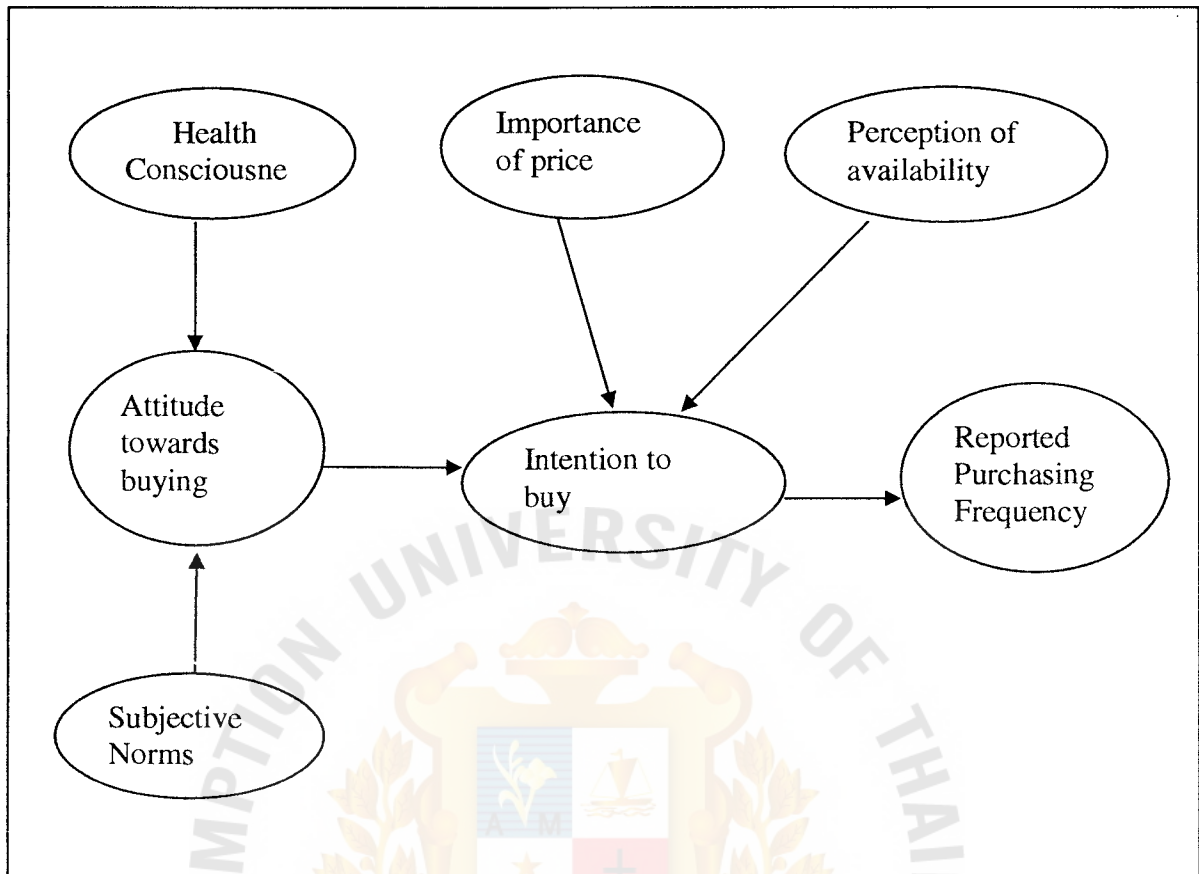
Source: Tarkianinen, A., & Sundqvist, S. (2005). Subjective norms, attitudes and intentions of Finnish consumers in buying organic food: A case study. *British Food Journal*, 107(11), 808-822.

As indicated in Figure 3.2, the extension of theory of planned behavior (TPB) was studied and implemented by Tarkianinen and Sundqvist's (2005) study about Finish consumers' acquisition towards organic food, in which how three independent variables (attitude towards buying, price and perception of availability) affect consumers' purchase intention and the relationship between purchase intention and actual purchases were included.

In the study, hypotheses were examined by structural equation modeling approach. The relationship between attitude towards buying and "intention to buy" was significant (0.558). Also, the path from subjective norm to attitude towards buying was also significant (0.374). The relationship between price and "intention to buy", and the relationship between perceived availability and "intention to buy" were not significant. In addition, health consciousness having a positive relationship with attitude towards buying

was rejected. Furthermore, there was a significant relationship through the path from buying intention to reported purchasing frequency (0.824). The researcher concluded that consumers' attitude could significantly affect their intention to purchase organic food, and the subjective norm could affect purchase intention indirectly but positively via the formation of attitude. The higher the purchase intention consumer has, the higher frequency of actual purchase will occur.

Figure 3.3: Model of organic food products decision-making process for Italian Southern consumer
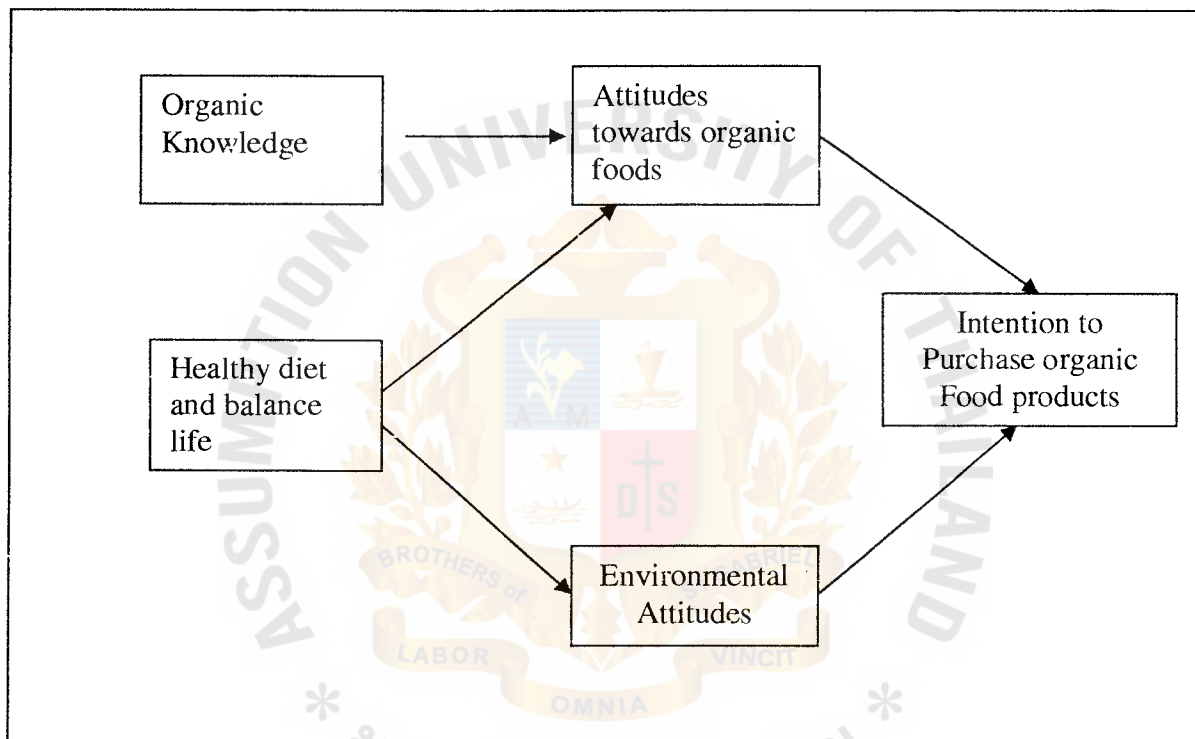
Source: De Magistris,T., & Gracia, A. (2008). The decision to buy organic food products in Southern Italy. *British Food Journal*, 110(9), 929-947

As indicated in Figure 3.3, de Magistris and Gracia (2008) studied Italian Southern consumers' decision-making process for organic food products. In this study, the relationship among information and general external factors of decision-making (organic knowledge and healthy diet and balance life), endogenous determinants of the decision-making process (attitudes towards organic foods and environmental attitudes), and predictive behavior of buying organic foods (intention to purchase organic food) were tested.

The researcher found that consumers' attitude towards organic food and consumers' environmental attitudes are high influential factors for consumers' decision-making for organic food products. The more organic food knowledge consumers have the more positive attitude consumers will have for organic food products. The standardized structural coefficient estimates were used to distinguish the relative importance of the independent variables. The researchers firstly found that there were positive estimate coefficients between "attitudes towards organic food" and "intention to purchase" (0.47), and "environment attitudes" and "intention to purchase" (0.30). The researchers could interpret that consumers would have higher intention to purchase organic food products as they held positive attitudes for organic food and for the environment. In addition, there were positive estimate coefficients between a "healthy diet and a balance life" and "attitudes towards organic food" (0.65), and "healthy diet and balance life" and "environmental attitudes" (0.61); this meant that consumers who were concerned, ate a healthy diet and lead a balanced life would hold a more positive attitude towards organic food and the environment.

Figure 3.4: Hypothesized relationship between ecological constructs and the man-nature orientation
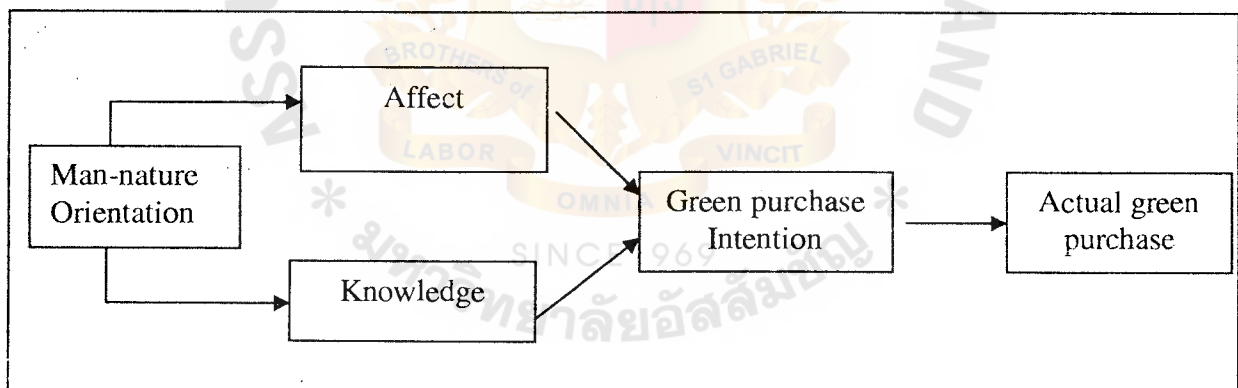
Source: Chan, R.Y.K., & Lau, L. B.Y. (2002), Antecedents of green purchases: A survey in China. *Journal of Consumer Marketing,* 17(4), 338-357.

As indicated in Figure 3.4, Chan and Lau (2002) studied the effects of cultural values, ecological affect and ecological knowledge to Chinese consumers' green purchasing behavior, and the relationship among independent variables (ecological affect and ecological knowledge), intervening variable (green purchase intention) and dependent variable (actual green purchase behavior) were examined, in which a structural equation

model was used to test the importance that ecological knowledge and ecological affect have on green purchase intention and actual green purchase behavior,

The estimated path coefficients from ecological effect of intention to purchase (0.70), from knowledge to intention to purchase (0.73), and from intention to purchase to actual purchase (0.84) were significant. As for man-nature orientation, it had a positive influence on the ecological effect (0.23), but it had the least influence on knowledge (0.08). Nevertheless, according to the findings, the researchers also pointed out that Chinese consumers' ecological knowledge and actual green purchase behavior were low even though Chinese consumers, in contrast, had a positive ecological effect and strong green purchase intention.

3.2 Conceptual Framework

The previous theoretical frameworks are the base for the researcher to develop a new model to investigate the Chinese consumers' green purchase behavior which is shown in Figure 3.5

Figure 3.5 The Conceptual Framework of Factors Affecting Consumers' Green Purchase Behavior in Shanghai, China
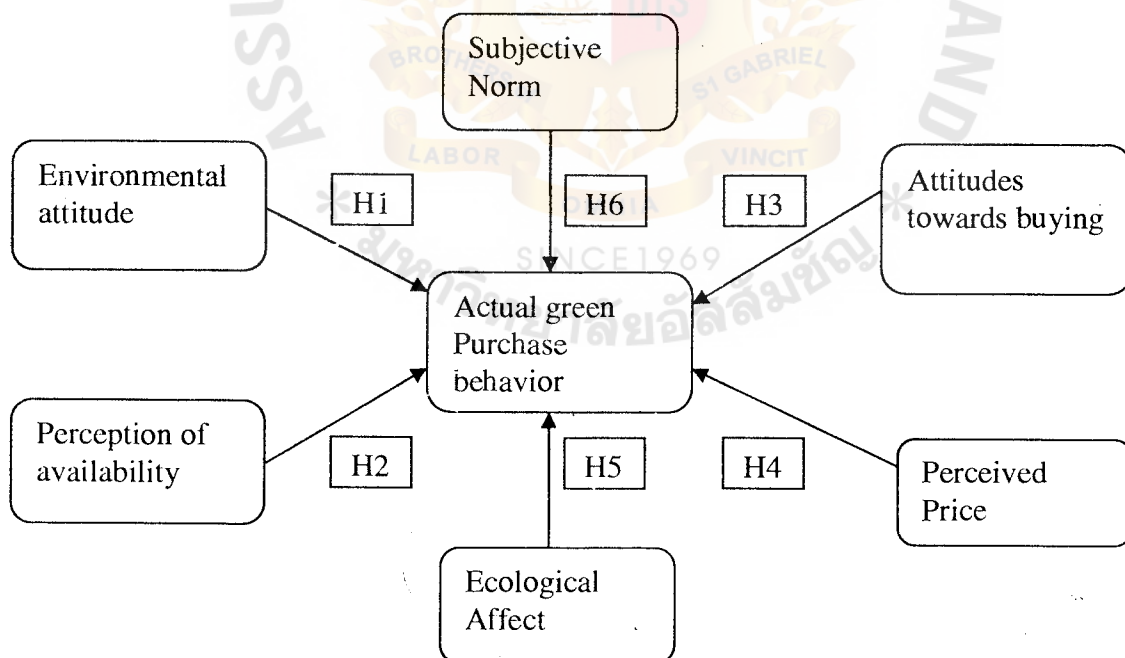
This conceptual framework is developed on the basis of various research models as follows: Beharrell and Crockett (1992), Tarkianinen and Sundqvist (2005), de Magistris and Gracia (2008), and Chan and Lau (2002). In this conceptual framework, the

actual green purchase behavior may be affected by six variables: environmental attitude, perception of availability, attitudes towards buying, prices, ecological affect, and subjective norms. Each variable is illustrated as follows:

First and foremost, attitude is defined as the extent to which an individual expresses his or her favorableness or unfavorableness towards evaluating a parituclar behavior in question. A significant relationship between attitude and green purchase was supported by various previous researchers (Mohai, 1990; Mostafa, 2007; Walsh and McGuire, 1992; Kassarjian, 1971). In this research, attitude refers to the attitude towards buying behavior and the attitude towards environment:

- **Environmental attitude:** The research adapted environmental attitude from De Magistris and Gracia (2008) as one of independent variables for this research. It refers to a degree of judgment concerning environmental pollution, environmental damage, conservation practices, and recycled uses. It has an impact on environmental-based behavior. This has been examined by Magistris and Gracia (2008), Kotchen and Reiling(2000), Friedman (1970), Grunert and Juhl (1995), Padel and Foster (2005), and Walsh and McGuire (1992).

- **Attitude towards buying:** The research adapted attitude towards behavior from Tarkianinen and Sundqvist (2005) as one of independent variables for this research. It refers to buyer's assessment towards his or her buying behavior for a particular product. The buyer expresses a strong intention to perform a behavior with consideration only when his or her attitude with respect to that behavior becomes more favorable. This has been supported by Loureiro *et al.*, (2001), Durham and Andrade (2005), and Padel and Foster (2005).

Secondly, perceived behavioral control is defined as an individual's prediction of how easy or how difficult it will be for the individual to carry out his or her behavior (Ajzen and Madden, 1986). Ajzen (2002) indicated availability, time, money, information, difficulty and expected barriers as external factors, so in this research, perceived behavioral control refers to consumers' perception of external control over acquisition of green products, which consisted of product availability and price.

- **Perception of availability**: The researcher adapted perception of availability from Tarkianinen and Sundqvist (2005) as one of independent variables for this research. Product availability has greatly influenced consumers to perform their green purchase,

and it has been supported by studies Davies *et al.,* (1995), Tanner and Kast (2003), Magnusson *et al.,* (2001), Takiainen and Sundqvist (2005), Boccaletti and Nardella (2000), Fotopoulos and Krystallis (2002), and Zanoli and Naspetti (2002).

Perceived price: The research adapted perceived price from Tarkianinen and Sundqvist (2005) as one of independent variables for this research. Price is a key factor in buying decision-making process. When consumers come to realize that green food is substantially healthier and safer than conventional food, they have a strong willingness to pay a premium price for it (Beharrell & MacFie, 1991; Collins et al., 1992; Hammitt, 1990, 1993; Hutchins & Greenhalag, 1997; Gil et al., 2000; Piyasiri & Ariyawardana, 2002; Zehnder et al., 2003). On the other hand, a relatively high price is one of the barriers for consumers to make a buying-decision for organic food, which is proven by various researchers such as Hill and Lynchehaun, (2002, 2001), Magnusson *et al.,* (2001); Tregear *et al.,*(1994); Batt and Giblett (1999); Padel & Foster (2005); Lea and Worsley (2005); McEachern and Willock (2004); Vindigni *et al.,* (2002), and so on.

Third, subjective norm is also called normative beliefs, which is the extent to feel a person important person to the respondent think the respondent should or should not perform the action in question (Ajzen, 1991). The research adapted subjective norm from Beharrell and Crockett (1992) as one of independent variables for this research Subjective norm has impact on green purchase, which is proven by Kalafatis et al., (1999), , Lee (2008), Agarwal (2000), Chang (1998),

Finally, the researcher adapted ecological affect from Chan and Lau (2000) as one of independent variables for this research. Ecological effect refers to the extent to which people are emotionally involved with the environmental issues (Dispoto, 1997). Ecological effect has an impact on environmental-based behavior, which is in line with the findings of Dispoto (1997), Li (1997), Maloney and Ward (1973), Hines (1987), and Chan and Yam (1995).

Based on the above information, the modified conceptual framework aims to investigate the six variables affecting consumers' green purchase behavior in Shanghai, China. A screening question was designed to obtain the target population, and the sampling process will be actualized in HiQuality Organic Food Chain Store in Shanghai. In addition, gender, age, education, occupation and monthly income were included in consumers' demographic factors to study the characteristics of the target population.

3.3 Research Hypotheses

A hypothesis is an assumption of the relation between two variables which are used to be examined for the purpose of an understanding about the association.

1. $H1_o$: Environmental attitude has no relationship with actual green purchase behavior

   $H1_a$: Environmental attitude has a relationship with actual green purchase behavior

2. $H2_o$: Perception of availability has no relationship with actual green purchase behavior

   $H2_a$: Perception of availability has a relationship with actual green purchase behavior

3. $H3_o$: Attitude towards buying has no relationship with actual green purchase behavior

   $H3_a$: Attitude towards buying has a relationship with actual green purchase behavior

4. $H4_o$: Perceived price has no relationship with actual green purchase behavior

   $H4_a$: Perceived price has a relationship with actual green purchase behavior

5. $H5_o$: Ecological affect has no relationship with actual green purchase behavior

   $H5_a$: Ecological affect has a relationship with actual green purchase behavior

6. $H6_o$: Subjective norms has no relationship with actual green purchase behavior

   $H6_a$: Subjective norms has a relationship with actual green purchase behavior

3.4 Operationlization of Variables

The measurements will be obtained through the production of substantial and accurate measurement. Hence, the researcher generated the alternatives of specific research procedures or the operations that would have an outcome corresponding to the concept of interest. The operationalization of variables is illustrated by Table 3.1

Table 3.1: Operational Definition of dependent and Independent Variable

Variables	Conceptual Definisiton	Operationalizing components	Measurement scale
Actual green purchase	Green purchasing behavior is the action to consume those products that are recycled, preserved advantageous to the environment, and quick to respond to ecological concerns	- Customers' acquisition of green product - The influence of environmental labeling of products on customers' acquisition	Interval Scale

	(Mostafa,2007)	- The influence of recycled/ recyclable packaging on customers' acquisition of products - The influence of chemical elements on customers' acquisition of products	
Environmental attitude	Environmental attitude is perceived as a cognitive judgment toward environmental protection concerning environmental pollution, environmental damages, conservation practices and recycled uses (Magistris and Gracia,2008)	- Destruction of environment - Irreversibleness of environmental damage - Extent of preference to perform environmental preservation - Extent of preference to consume recycled goods - Dispose waster in different rubbish bins	Interval Scale
perception of product availability	Perceived behavioral control can form considerable difference in behavioral intention and actions, which consists of perceived self-efficacy and perceived controllability. Insufficient availability is perceived as a hindrance for acquiring goods, which is clearly not under consumers' control (Ajzen,2002)	- Sufficiency of green products - Possibility of purchasing green product if it is available at regular shopping place - Consideration of having special trip to purchase green products due to unavailability - Possibility of purchasing green product with regard to the availability and affordable price	Interval Scale
Attitudes towards buying	Attitude towards the behavior is defined as the extent to which a person expresses his or her liking or disliking assessment of the behavior (Ajzen, 1991)	- Extent of being reasonableness towards purchasing green products - Superior quality of green products - Tastiness of green products - Health of green products	Interval Scale
Perceived Price	Perceived price is considered as the perception, feelings and attitudes towards the importance of price of green products when consumers make an acquisition (Takiainen and Sundqvist, 2005)	- Importance of the price of green products - Avoidance of purchasing green products due to the expensiveness of price as compared to conventional product - Relative expensiveness of green products - Buying green products with a premium price - Acceptance of green products' prices	Interval Scale
Ecological Affect	Ecological affect refers to the extent to which people emotionally involved with the	- Feeling that most food is contaminated with pesticides	Interval Scale

42

		environmental issues (Dispoto, 1997)	- Government does not do more to help control the pollution of the environment - Feeling after knowing that the plant and animal life are harmed by pollution - Attitude towards the whole pollution issues	
Subjective Norm	Subjective norm is called normative beliefs, which is about whether what important person to a respondent think the respondent should or should not perform the action in question (Ajzen, 1991)	- Whether people influential to the individual think that the acquisition of green product is a wise idea - Whether people important to the individual think that the acquisition of green product is a good idea - Whether family member influential to the individual think that the acquisition of green products is a wise idea - Whether family member important to the individual think that the purchase of green products is a wise idea	Interval Scale

CHAPTER 4

RESEARCH METHODOLOGY

This chapter focuses on describing the methodology adopted in this study. The appropriate research tools are used to analyze the data in order to achieve research objectives. This chapter contains six sections. The first section describes the research methods used. The second section shows the respondents and sampling procedures followed by the third and fourth sections, which focus on research instruments/ questionnaires and pretest. The fifth section deals with the collection of data/ gathering procedures. The final section shows the statistical treatment of data.

4.1 Research Method

Two types of research methods were used in this research, which are descriptive analysis and inferential analysis. Descriptive analysis is used to describe the characteristics of Chinese consumers in a quantitative aspect, which aims to define who, what, when, where, and how questions. It is useful for the target and segmentation of the market (Zikmund, 2003). Inferential analysis is used to test the interaction between variables. This research was envisaged as a relationship study, whereby the researcher used self-administered questionnaires for collecting the information obtained from the respondents in Shanghai (China). The research applied a survey technique in order to gain more understanding about actual purchasing behaviors of Chinese consumers when they are exposed to green products. As Hussey (1997) mentioned, a survey is a positivistic methodology whereby a sample is subjects drawn from a population and studied to make inferences about the population.

4.2 Target Respondents and Sampling Procedures

4.2.1 Population

Based on the conceptual framework, this research studied the consumers' actual purchase behaviors for green products. The population in this study is those who have had experience in acquisition of green products in Shanghai city, so they are considered as users of green products.

As the largest city in the world with around 9 million population and the largest commercial and financial center in China, Shanghai achieved 9.7% of GDP growth rate and 322 billion US dollar of foreign volume in 2008. Per capita GDP in 2008 was Yuan 73,126 which exceeded 7,000 US dollar and was ranked No.9 in the list of China administrative divisions by GDP per capita. The increasing prosperity ensures that the middle class in Shanghai has a strong purchasing power. According to the China State Information Center, middle class includes those people who earn 50,000 Yuan ($ 6,227) per year. Xu (2008) stressed that the growing population of middle class in Shanghai is taking the lead in purchasing organic food products. Also, apart from the increasing prosperity, the emergence of LOHAS has become another force to boost the consumption of organic product. LOHAS is an ellipsis for Lifestyle of Health and Sustainability. Lohasian consume healthy food and organic potherb, wear clothes in natural fibers, and use second-hand household appliances. Xu (2008) mentioned that being a Lohasian has symbolized a fashion for Shanghainess. Media has exerted great effort to propagate LOHAS lifestyle, and www.lohasmetro.com (08/April/2010) and LOHAS Magazine became pioneer to introduce hot topic. With the effort of media exposure, people have gradually come to know of organic concept well (Xu, 2008).

Figure 4.1 Shanghai Map
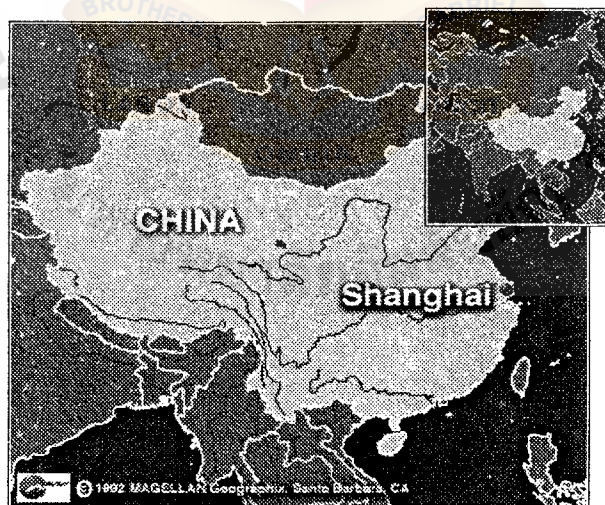
Source: http://www.cnn.com/WORLD/(08/April/2010)

Shanghai is located on the Yantz River Delta on China's eastern coast, and it is a center of finance, economics and education in South China. Huangpu River bisects the city into two parts: Pu Dong, an emergingt financial zone, and Pu Xi, a traditional commercial and manufacturing zone. Shanghai consists of 17 districts and one country.

Figure 4.2 LOHAS METRO.com

Source: http://www.lohasmetro.com/ (08/April/2010)

Figure 4.2 shows a website that promotes LOHAS lifestyle that is to consume healthy and natural food, to live in a healthy way, to participate in outdoor activities and environmental protection campaigns. It symbolizes that the mass media in China has participated in environmental education to sway subjects' lifestyles.

Shanghai Organic Retail Market

As indicated in Shanghai Organic Retail Market Profile as the largest organic product market in China, 60 percent of Shanghai dwellers have high willingness to purchase certified organic products rather than ordinary products. Xu (2008) stated that organic foods in Shanghai were distributed through various retail channels, and supermarkets and organic specialty shops played a critical role. Those sepciality shops have offered organic and natural food have grown up rapidly in the past few years. Also, many of them are chain stores, including HiQuality. Milk, grains, fruit spreads and juice, vegetables and poultry were the most popular products. Rock Wing Co.Ltd, an organic consulting company in Shanghai, stressed that argricultural products contributs 90% of the total sales of organic food products, domestically processed food accounts for 5% and another 5% come from imported products. In 2005, the first organic specialty shop in China was opened in Shanghai named Ostore, which mainly sold imported organic goods such as Rapunzel. However, it was shut down in 2007 because of high cost, lack of cooperation in supply-chain management, and immature development of Chinese organic product market. Ostore's failure is just an epitome of those failed organic retailers throughout the entire country.

Table 4.1 Key Organic Specialty Shops in Shanghai

Retailer	Number of Stores	Business started
High Qualty Organic Food	15+1(opened in 2010)	2006
Lohaocity	1	2006
Xi Bu Zi Yuan	5	2005
Organic (Ou Ge Ni)	2	2007
Gold Food (Hui Tian Ran)	3	2008
Health Oraganic	1	2008

Source: Xu, F. (2008). Shanghai Organic Retail Market Profile. USDA Foreign
Agricultural Service, *Gain Report* (CH8821), 9.

Table 4.1 displayed some organic product retailers in Shanghai, and High
Quality Organic Food (HiQuality) is the biggest organic product chain store which
currently owns 15 shops and its 16th branch in Shanghai Expo Village was opened as
2010 Shanghai Expo came. Xi Bu Zi Yuan currently has 5 shops that rank in the 2nd
place.

HiQuality Organic Food Chain Store

HiQuality Organic Food started the business in
2006 and has opened 16 stores till 2010 in
Shanghai mainly targeting high-end residential
areas to meet an ever-growing demand for daily
puchase of organic products. HiQuality is an
abbreviation of high quality. HiQuality has two
bases of organic argriculture production both in
Shanghai and Lin An. Apart from these two bases,
HiQuality has also built up a network with organic
farms and organic product manufacturers.
Nowadays, HiQuality has around 12 product categories covering vegetables, fruits, eggs,
milk, wheat, juice, honey, tea, and cooking oil. Unlike other organic food retailers who
aim at foreigners and high-end consumers as their target customers and set up premium
price for ogranic foodstuff, HiQuality targets ordinary Chinese consumers as its target
customers and comparatively offers organic foodstuff at reasonable prices.

Figure 4.3 HiQuality Branch-Bei Jing Xi Road Branch

Bei Jing Xi Road branch is one of the HiQuality branches shown in Figure 4.3. All branches of HiQuality are planned and operated in an unified standard such as outlet design, logo, price, etc. For example, the measurement of a store is around 100 square metres.

2010 Shanghai World Expo was an important opportunity for Shanghai becoming the best city of ecological laboratory, and HiQuality exclusively is endowed with the privilege to open an outlet in Shanghai Expo Village. The location of 16th branch is shown in Figure 4.4:

Figure 4.4 Location of Shanghai Expo Village Branch
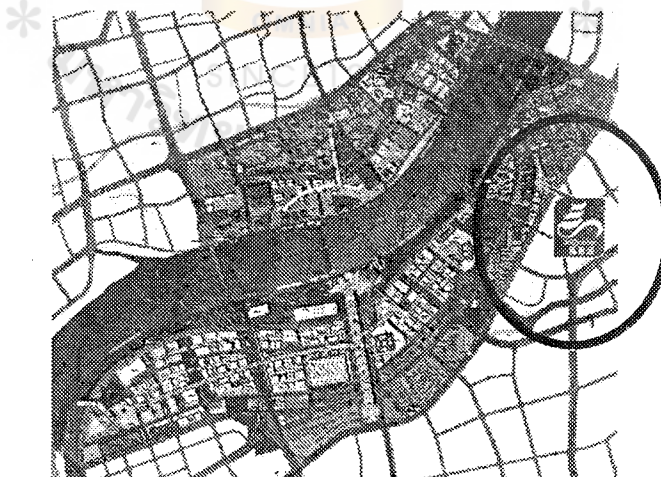
HiQuality's 16th branch was opened in 2010 Shanghai Expo Village as indicated in Figure 4.4, and HiQuality is the only organic food product company that is endowed

with the previlege to open a food product shop in Shanghai Expo Village. Shanghai Expo aims to promote green issues from various aspects, and the selection of HiQuality is to echo an increase of demand for a green Shanghai Expo.

Figure 4.5 Location of 16 HiQuality's branches in Shanghai
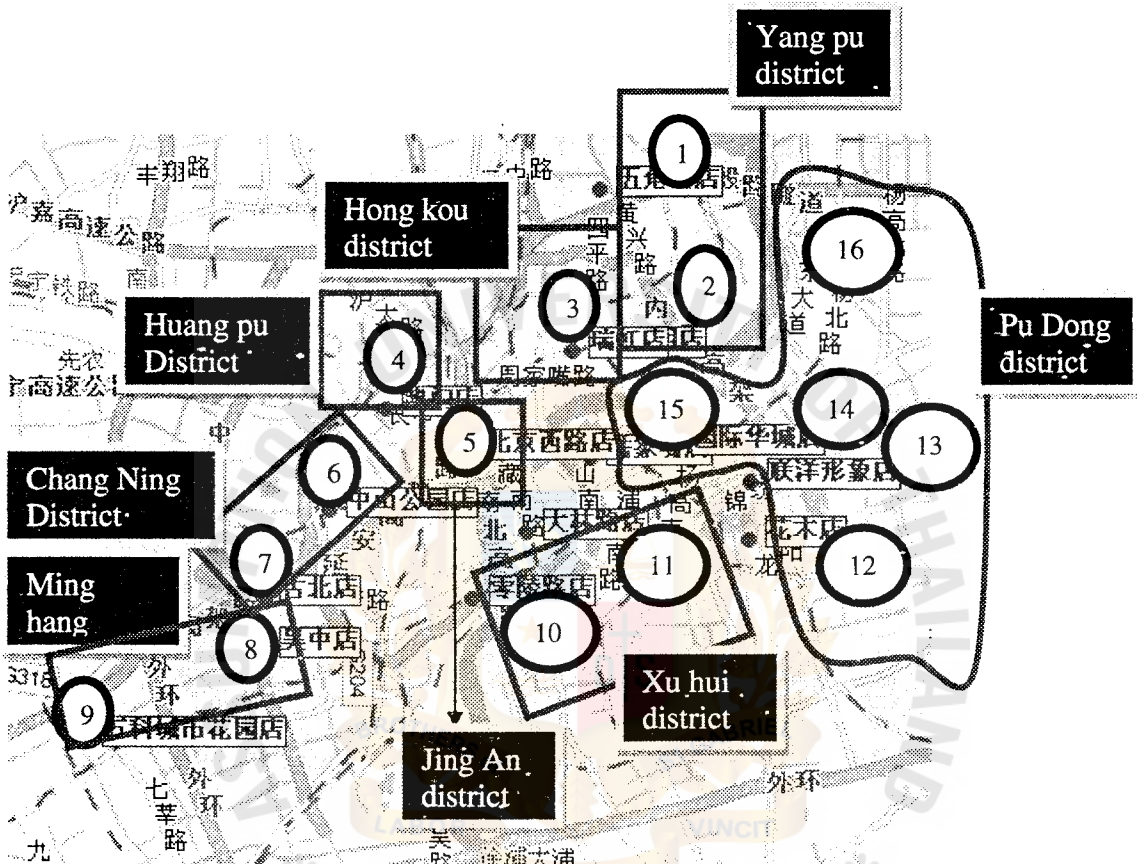
Figure 4.5 exhibits the current 16 branches of HiQuality Organic Food Chain stores in Shanghai. There are 17 districts in Shanghai, and these branches are mainly located in 8 districts in both PuDong zone and Pu Xi zone. Pu Xi zone includes Yang Pu District (1, 2), Hong Kou District(3), Huang Pu District(4), Jing An District (5), Chang Ning District(6, 7), Ming Hang District(8, 9) and Xu Hui District (10, 11). Pu Dong zone include Pu Dong District (12,13,14,15,16).

1. Wu Jiao Chang Branch	4. Ao Men Road Branch
2. Kun Ming Road Branch	5. Bei Jing Xi Road Branch
3. Rui Hong Branch	6. Zhongshan Park Branch

7. Gu Bei Road Branch

8. Wu Zhong Road Branch

9. Wan Ke CITY GARDEN Branch

10. Ling Lin Road Branch

11. Da Lin Road Branch

12. Hua Mu Branch

13. Lian Yang Xing Xiang Branch

14. Guo Ji Hua Cheng Branch

15. Lu Jia Zui Branch

16. Shanghai Expo Village Branch

Table 4.2 HiQuality branches

Hi Quality	Address
1. Wu Jiao Chang Branch	No58-66, Da Xue Road, Yang Pu District
2. Kun Ming Road Branch	Building 204, No 572, Kun Ming Road, Yang Pu District
3. Rui Hong Branch	Zone B-03, No123, Lin Ping Road, Hong Kou District
4. Ao Men Road Branch	No1747, Shan Xi Bei Roa, Pu Tuo District
5. Bei Jing Xi Lu Branch	No489, Bei Jing Xi Raod, Jing An District
6. Zhong Shan Park Branch	No999, Chang Ning Road, Chang Ning District
7. Gu Bei Road Branch	Huang Jin Chen Dao, Chang Ning District
8. Wu Zhong Road Branch	No 85, Alley 635, Wu Zhong Road, Min Hang District
9. Wan Ke CITY GARDEN Branch	No208, Alley8888, Zhong Chun Road, Min Hang District
10. Lin Ling Road Branch	No 23, Lin Ling Road, Xu Hui District
11. Da Lin Road Branch	Room 105, No188, Da Lin Road, Huang Pu District
12. Hua Mu Branch	No 23, Alley 999, Mei Hua Road, Pu Dong
13. Lin Yang Xing Xiang Branch	No.1120, Ying Chun Road, Pu Dong
14. Guo Ji Hua Cheng Branch	2nd Floor, No19, Alley 1515, Zhang Yang Road, Pu Dong
15. Lu Jia Zui Branch	No3, Alley 200, Dong Tai Road, Pu Dong
16. Shi Bo Branch	No.270 Shi Bo Cun Road

Source: http://www.haikele.com/article_cat.php?id=1000 (08/April/2010)

Table 4.2 exhibited the addresses of 16 branches of HiQuality Organic Food Chain Store, and these branches are located in commercial areas, academics institution areas, and financial areas.

Population Summary:

The study focuses on the customers who have had experience in buying green products in Shanghai City. In this study, the target population is customers who have purchased green products from HiQuality Organic Food stores.

4.2.2 Sample Size

The first previous research conducted by Chan and Lau (2000) had a sample size of 274 respondents to investigate the relationship between ecological constructs and the man-nature orientation. Magistris and Gracia(2008) studied the decision to buy organic food products in Southern Italy with a sample size of 200 respondents. Tarkiainen and Sundqvist (2005) conducted a survey aimed to study the relationship between subjective norms, attitudes and intention to buy organic food with a sample size of 200 respondents. O'Donovan and McCarthy (2002) studied Irish consumers' preference for organic meat with a sample size of 250 respondents. D'Souza et al., (2006) studied green products and corporate strategy, in which a total of 155 questionnaires were used for data analysis. Kalafatis et al., (1999) conducted a cross-market examination to study green marketing and Ajzen's theory of planned behaviors, was carried out in UK and Greece with a sample size of 175 respondents and 170 respondents respectively. Sekaran (2003) stated that either too large or too small sample sized would not be useful for research projects. Thus the researcher finally collected 402 questionnaires from the respondents who have had experiences in buying green products from HiQuality Organic Food Chain Store in Shanghai.

4.2.3 Sampling Method

According to Zikmund (2003), the process of using small number of items or parts of the entire population to generate conclusive representation for the entire population is called Sampling. Probability and non-probability techniques were used in this research. Also, Zikmund (2003) pointed that the probability of any particular member of the population being chosen was unknown.

1. Simple Random Sampling

The researcher uses the simple random sampling by drawing techniques to ensure that each element in the population shares an equal chance of being included in the sample (Zikmund, 2003). In this study, each branch of HiQuality Organic Food had an equal chance to be selected, and the researcher draws 5 branches out of 16 HiQuality stores: Wu Jiao Chang Branch, ZhongShan Park Branch, Rui Hong Branch, Ao Men Lu Branch and Kun Ming Lu Branch. In this study the researcher targeted on consumers in Shanghai City. Bentler and Chou (1987) defined the ratio of sample size to the number of population parameters as 10%; however, the research chose 5 branches out of 16 branches, which accounted for 31% that is more than 10%. It is more concrete to the population.

2. Quota sampling

Kinnear (1987) defined quota sampling as a method through which the researcher is able to control the sampling procedure to obtain a sample; it is similar to the population. Zikmund (2003) indicated that by implementing quota sampling technique, certain characteristics of a population sample is able to represent to the accurate level that the researcher demands for. The number of experienced customers was unknown. The researcher focused on the customers' actual purchase behavior of green products, so the

data was collected from approximately 400/5=80 customers at each branch. The proportion and the selected branches are shown in the Table 4.3 and Figure 4.6:

Table 4.3: Five Selected HiQuality Branches

HiQuality Branch	Amount (respondents)
** 1. Wu Jiao Chang Branch	80 (81)
2 ZhongShan Park Branch	80
3 Rui Hong Branch	80
4 Ao Men Lu Branch	80
** 5. Kun Ming Lu Branch	80 (81)
Total	402

Finally, the researcher collected 80 questionnaires from ZhongShan Park Branch, Rui Hong Branch, and Ao Men Lu Branch, and 81 questionnaires from Wu Jiao Chang Branch and Kun Ming Lu Branch. Totally, the researcher collected 402 questionnaires for this research.

Figure 4.6: The location of 5 selected HiQuality Branches

Source: http://www.haikele.com/map.html (08/April/2010)
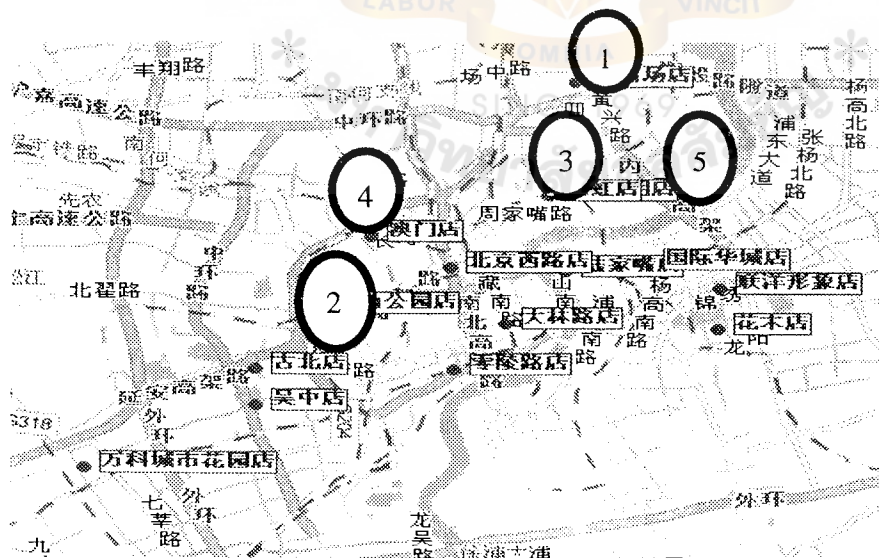
As indicated in Figure 4.6, five selected branches were Wu Jiao Chang Branch (1), Zhong Shan Park Branch (2), Rui Hong Branch (3), Ao Men Branch (4) and Kun Ming Branch (5).

3. Convenience Sampling

Zikmund (2003) defined that convenience sampling refers to obtain the respondents or units that are most conveniently available. The researcher collected the data from anybody who is available to answer the question and collected 80 questionnaires from each branch.

4.3 Research Instrument

The research questionnaire consists of four parts with 36 questions. The questionnaire was translated to Chinese language to make it more convenient and understandable for the respondents. The details are as the follows:

Part I: Screening Questions

The screening question (Yes-No question) was to screen whether the respondents have had experience in buying green products from HiQuality food stores.

Part II: Factors that Influence Green purchase

This part consists of six variables that are Environmental Attitude, Perception of Availability, Attitude towards Buying, Perceived Price, Ecological Affect, and Subject Norm. These six variables used five-point Likert scale to measure the extent of consumers' favorableness towards green purchase. As indicated in Zikumand (2003), Likert scale is a measurement of attitudes used for describing respondents' extent of agreements or disagreements with constructed statements that vary from very positive to

very negative towards an attitudinal object. The scale in this part was ranked as follows: 1 refers to "Strongly disagree", 2 refers to "Disagree", 3 refers to "Neutral", 4 refers to "Agree", and 5 refers to "Strongly agree".

Part III: Green Products Purchase Behavior

This part consists of four questions to measure the degree of customers' actual purchase for green products. The scale in this part is ranked as follows: 1 refers to "Strongly disagree", 2 refers to "Disagree", 3 refers to "Neutral", 4 refers to "Agree", and 5 refers to "Strongly agree".

Part IV: Personal Information

As indicated by Robert (1996), demographic factors are useful to segment market and ecological conscious behavior can be estimated by the demographic factors (Schlegelmilch *et al.,* 1996), the demographic factors are included in this research as background factors. According to Roberts (1996), gender, age, education, income and occupation are the elements of standard demographic variables.

4.1: Age: There are six age ranges that describe the age ranges of the respondents

4.2: Gender: There are two choices offered, male and female

4.3: Education level: There are four choices provided, high school or less, college graduate, bachelor's degree, master's degree or higher

4.4: Occupation: There are five choices provided; university student, government Sector employee, business owner, private sector employee, and others

4.5 Monthly Income: there are five levels of monthly income offered to gather the income information from the respondents.

4.4 Pretest

Churchill (2002) stressed that a pretest was the use of questionnaires for experimenting based on a miniature pilot study to decide and conclude how effective the questionnaire would be. The pretest is a tool to ensure the success of the questionnaire and the research project. In this study, individual questions focused on personal interviews, in which the researcher would see how clear the questions would be and how the respondents responded to the questions. According to Vanichbancha (2003), the number of pretest should be between 20 to 80 respondents. In this study, for developing questionnaire, the researcher distributed the questionnaires to 20 respondents and interviewed them to make sure that the questionnaire was well understood. After the researcher was sure that the questionnaire was understood by respondents clearly, the researcher collected the data from 50 respondents for the pretest to ensure the success of the questionnaire and the accuracy of the information for trial study.

In this research, the researcher applied Cronbach's Alpha test (α-test) to test the reliability of questionnaire using the five-points Likert scale ranging from 5-strongly agree to 1-strongly disagree, and the questionnaire was collected and processed using SPSS program. Reliability is to measure the internal consistency of multi-items in measuring their respective constructs (Hair *et al.*, 2006). Based on Sekaran (1992), if an α-test used to test reliability values is greater than 0.60, it means that the questionnaires will be reliable and accepted. The result of reliability testing is shown in Table 4.4:

Table 4.4: Reliability of Research Instrument

Variables	Alpha
Environmental Attitudes	.713
Perception of availability	.602
Attitude towards buying	.710
Price	.807
Ecological affect	.837
Subjective norm	.616
Green products purchasing behavior	.802

As all variables are greater than 0.60, which is the acceptable level of α -test (Sekaran, 1992), the researcher could conclude that the questionnaire was acceptable in this study.

4.5 Collection of Data

In this study, the researchers used both the primary data and the secondary data to gather the information that can be a good foundation for the researcher to conduct the study.

The primary data is gathered and assembled specifically for the research project at hand (Zikmund, 2003). The primary data was collected by the survey method, since survey is commonly used to generate the primary data. In this study, the primary data was collected from the target respondents, who have purchased organic food from organic food stores in Shanghai City. All data was processed using the statistical package for social science (SPSS) program.

Lacobucci (2002) defined secondary data as those data that had been previously collected for a prior intention rather than for an immediate study at hand. Additional time and efforts are required to obtain the information as being compared to the primary data. The secondary data for this research was taken from several sources, including the journals, text books, newspapers, magazines, articles and the previous studies, which had

been done by various researchers. The secondary data linked to this study helped the researcher to find out the concepts to assist in the analysis, recommendations and to draw a meaningful conclusion for this research.

4.6 Statistical Treatment of Data

The data will be collected and coded using SPSS program, which helped analyze the data applying transformation and statistical analyses of the study and the research data. Three statistical methods were used in the study:

4.6.1 Descriptive Analysis

Zikmund (2003) identified descriptive analysis as the transformation of raw data into a form that will make those data more understandable and interpretable. The most common ways to summarize the data are calculating averages, frequency distributions, and percentage distributions. In this research, the descriptive analysis was used to explore the data collected manifested in terms of the descriptive analysis for age range, gender, monthly income, education background and occupation was manifested through a series of tables, graphics, and so on. The formula included in this study offered by Kazmier (1996) is:

Mean:

$$\bar{X} = \frac{\sum X}{n}$$

Standard Deviation (SD)

$$S = \sqrt{S^2} = \sqrt{\frac{\sum(X_i - \bar{X})^2}{n-1}}$$

Where X= individual value

$\bar{x}$= the arithmetic mean of a sample of values

N = the number of items in the population

58

4.6.2 Correlation Analysis

Correlation is a method to study the relationship between two variables in a linear fashion (Coakes *et al.*, 2006). A Pearson Product-Moment Correlation Coefficient is used for illustrating the relationship between two continuous variables and is available through the analysis and correlate menus. Its range of possible values is from -1 to +1. In addition, Bivariate correlation refers to the correlation between two continuous variables. In this study, Pearson product-moment correlation coefficient (Bivariate correlation) measures the relationship between environmental attitudes and green product purchasing behavior, perception of availability and green product purchasing behavior, attitude towards buying and green product purchasing behavior, price and green product purchasing behavior, ecological effect and green product purchasing behavior, and subjective norms and green product purchasing behavior. The interpretation of Pearson correlation coefficient and each correlation coefficient levels is shown in Table 4.5:

Table 4.5: R-value and criteria

Correlation (r)	Interpretation of Reliability Level
>0.90	Very strong, negligible
0.70-0.90	Strong, high, marked
0.40-0.70	Moderate
0.20-0.40	Weak, low
< 0.20	Very weak, negligible

Source: De Muth, E.J. (2006). *Basic statistics and pharmaceutical statistical applications* (2nd ed), NW: Taylor & Francis Group.

De Muth (2006) stated that the sign of "+"or "–" could symbolize a positive or negative correlation, and the values for correlation coefficients would not stand for same distances along a linear scale. De Muth (2006) concluded that the bigger the r would be, the greater the consistency of the two measures would have. As such, the formula provided by Zikmund (2003) included in the study as follows:

$$r_{xy} = r_{yx} = \frac{\Sigma(X_i - \overline{X})(Y_i - \overline{Y})}{\sqrt{\Sigma(X_i - \overline{X})^2 \, \Sigma(Y_i - \overline{Y})^2}}$$

Where r = sample correlation coefficient

$\overline{x}$ and $\overline{y}$ = mean

x_i and y_i = values for sample unit i

4.7 Summary of Statistical tools used in testing hypotheses

Zikmund (2003) stated that the significant level is a critical probability in choosing between the null and alternative hypotheses and the significant level can be set at 0.01 or 0.05. The confidence level is a percentage that indicates the long-run probability that the results will be correct, and traditionally the 95% confidence level has been used by the researchers (Kitchens, 1998). Based on the previous theories, the researcher in this study defines the significant level as 0.05. If P-value is less than 0.05, the null hypothesis will be rejected, which means that there is a relationship between the two variables; if the P-value is grater then 0.05, the null hypothesis would be failed to be rejected, which means that there is no relationship between the two variables.

Table 4.6: Summary of Statistical tools used in testing hypotheses

Null Hypothesis	Null hypothesis description	Statistical tools used
$H1_o$:	Environmental attitude has no relationship with actual green purchase behavior	Pearson Correlation Coefficient
$H2_o$	Perception of availability has no relationship with actual green purchase behavior	Pearson Correlation Coefficient
$H3_o$	Attitude towards buying has no relationship with actual green purchase behavior	Pearson Correlation

		Coefficient
$H4_0$	Perceived Price has no relationship with actual green purchase behavior	Pearson Correlation Coefficient
$H5_0$	Ecological affect has no relationship with actual green purchase behavior	Pearson Correlation Coefficient
$H6_0$	Subjective norms has no relationship with actual green purchase behavior	Pearson Correlation Coefficient

CHAPTER 5

PRESENTATION OF DATA AND DISCUSION OF RESULTS

The purpose of this chapter is to present the research results conducted in Shanghai based on the modified conceptual framework and the aforementioned theories. This chapter consists of three sections. The first section is to demonstrate descriptive statistics by using frequency, percentage, mean and standard deviation. The second section is to present the result of reliability test. The last section is to illustrate the results of hypothesis test.

5.1 Descriptive Statistics

Zikmund (2003) identified descriptive analysis as the transformation of raw data into a form that will make those data more understandable and interpretable. To calculate averages, frequency distributions, and percentage distributions are the common ways to summarize the data. The descriptive analysis of respondents' demographic information in this study was demonstrated as follows:

Table 5.1: The analysis of respondents' gender by applying frequency and percentage

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	180	44.8	44.8	44.8
	female	222	55.2	55.2	100.0
	Total	402	100.0	100.0	

As indicated in Table 5.1, the majority of the respondents were females represented as 222 (55.2%) followed by 188 males (44.8%). The result shows that the female consumers play a great part in purchasing green products.

Table 5.2: The analysis of respondents' age by applying frequency and percentage

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	younger than 20years old	6	1.5	1.5	1.5
	21-25 yeas	50	12.4	12.4	13.9
	26-30years	150	37.3	37.3	51.2
	31-35 years	108	26.9	2C 9	78.1
	36-40	60	14.9	14.9	93.0
	41 or above 41	28	7.0	7.0	100.0
	Total	402	100.0	100.0	

As indicated in Table 5.2, out of 402 respondents, the largest age range of respondents was between 26 to 30 years (37.3%) represented by 150, followed by 108 respondents (26.9%) in the age range of 31 to 35 years, 60 respondents (14.9%) in the age range of 36 to 40 years, 50 respondents (12.4%) in the age range of 21 to 25 years, 28 respondents (7%) in the age range of above 40 years and 6 respondents (1.5%) in the age range of less than or equal to 20 years respectively.

Table 5.3: The analysis of respondents' educational level by applying frequency and percentage

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school or less	26	6.5	6.5	6.5
	college graduate	88	21.9	21.9	28.4
	bachelor	167	41.5	41.5	69.9
	master or above	121	30.1	30.1	100.0
	Total	402	100.0	100.0	

As indicated in Table 5.3, out of 402 respondents, level of education of most of the respondents was bachelor degree represented by 167 respondents (41.5%), followed by 121 respondents (30.1%) with master degree or above, 88 respondents (21.9%) college graduates, and 26 respondents (6.5%) high school or less respectively.

Table 5.4: The analysis of respondents' occupation by applying frequency and percentage

occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	university students	6	1.5	1.5	1.5
	government sector employee	127	31.6	31.6	33.1
	private sector employee	166	41.3	41.3	74.4
	business owner	72	17.9	17.9	92.3
	others	31	7.7	7.7	100.0
	Total	402	100.0	100.0	

As indicated in Table 5.4, out of 402 respondents, the majority of the respondents were private sector employed represented by 166 respondents (41.3%), followed by 127 government sector employees (31.6%), 72 business owners (17.9%), 6 university students (1.5%), and 31 respondents (7.7%) with other employee status respectively.

Table 5.5: The analysis of respondents' monthly income by applying frequency and percentage

income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under RMB1,000	5	1.2	1.2	1.2
	1,001-2,000	34	8.5	8.5	9.7
	2,001-3,000	120	29.9	29.9	39.6
	3,001-4,000	152	37.8	37.8	77.4
	4,001 or above	91	22.6	22.6	100.0
	Total	402	100.0	100.0	

As indicated in Table 5.5, out of 402 respondents, the largest monthly income range of respondents was between 3,001 to 4,000 RMB (37.8%) represented by 152, followed by 120 respondents (29.9%) in the monthly income range of 2,001 to 3,000 RMB, 91 respondents (22.6%) in the monthly income range of above 4,000 RMB, 34 respondents (8.5%) in the monthly income range of 1,001 to 2,000 RMB, and 5 respondents (1.2%) in the monthly income range of less than or equal to 1,000 RMB respectively.

Table 5.6: The analysis of the factors affecting respondents' green purchase behavior by illustrating Mean and Standard Deviation

Variables	N	MEAN	Std. Deviation
Environmental Attitudes			
The current development path is destroying the environment.	402	3.89	.908
Environmental damage will be solved if we do something.	402	3.74	.942

I practice environmental conservation tasks.	402	3.68	.947
I prefer consuming recycled products.	402	3.98	.870
I dispose my garbage in different containers.	402	3.46	.939
Total	402	**3.7478**	**.64831**
Perception of Availability			
Green products are always sufficiently available.	402	3.63	.971
I consider purchasing green product if it is available at my regular place of purchase.	402	3.96	.925
I consider making a special trip to a store that sells green product if green products are not available at my regular shopping place.	402	3.96	.887
Total	402	**3.8483**	**.75838**
Attitude towards Buying/Using			
I think that buying green products is reasonable.	402	3.09	.900
I think green products have superior quality.	402	3.83	.702
I think buying green products can ensure good health.	402	3.66	.988
I think buying green products is safe.	402	3.99	.935
My attitude towards buying green products is positive.	402	3.97	.906
Total	402	**3.9065**	**.62692**
Perceived price			
The price of a green product is very important to me.	402	3.78	.978
I refrain from buying green products because they are too expansive as compared to conventional products.	402	3.80	.956
I consider purchasing green product if it is available at affordable price	402	3.79	.939
The price of green product is relatively expensive.	402	3.87	.996
Generally, the price of green product is acceptable to me.	402	3.92	.955
Total	402	**3.8398**	**.62835**
Ecological Affect			
It frightens me to think that much of the food I eat is contaminated with pesticides.	402	3.87	.835
It genuinely infuriates me to think that the government doesn't do more to help control pollution of the environment.	402	4.00	.929
I become incensed when I think about the harm being done to plant and animal life by pollution.	402	4.09	.900

When I think of the ways industries are causing pollution, I get frustrated and angry.	402	3.83	.702
Total	402	**3.9465**	**.67226**
Subjective Norms			
People who influence my behavior would think that my purchase of green product was a wise choice.	402	3.66	.988
People who are important to me would think that my purchase of green product was a wise choice.	402	3.99	.935
My family members who influence me most would think that my purchase of green product was a wise choice.	402	3.97	.906
My family members who are important to me would think that my purchase of green product was a wise choice.	402	3.80	.946
Total	402	**3.8539**	**.7443**

As indicated in Table 5.6, the highest mean of factors affecting consumers' green purchase behaviors in Shanghai is 3.9465 for Ecological Affect, followed by 3.9065 for Attitude towards buying/ using, 3.8539 for Subjective Norm, 3.8483 for Perception of Availability, 3.8398 in Perceived price, , whereas the lowest mean is 3.7478 for Environmental Attitude respectively.

Table 5.7: The analysis of the factors affecting respondents' Green purchasing behavior by illustrating Mean and Standard Deviation

Green Product Purchasing Behavior	N	Mean	Std. Deviation
I often buy green product.	402	3.75	.947
I often buy products that are labeled as environmentally-safe.	402	4.00	.853
I often buy products that use recycled/recyclable packaging.	402	3.78	.851
I often buy products that contain no or fewer chemical ingredients.	402	3.56	1.027
Total	402	**3.7749**	**.7329**

Table 5.7 demonstrated that the mean of green purchasing behavior was 3.7725. Out of four statements, the highest mean score was 4.00 in buying products with

environmentally-safe label, whereas the lowest mean score was 3.56 in buying products that contain no or fewer chemical ingredients.

5.2 Reliability Analysis

The researcher conducted the survey by distributing the questionnaire to 402 respondents in Shanghai during 14th May, 2010 until 22nd August, 2010. The reliability of the questionnaire was examined by applying Cronbach's coefficient alpha which was similar to the pretest aforementioned in Chapter 4. The results are presented in Table 5.8.

Table 5.8: The reliability of the questionnaire of the Study

Variables	Cronbach's Alpha
Environmental Attitudes	.745
Perception of availability	.751
Attitude towards buying	.744
Price	.689
Ecological affect	.806
Subjective norm	.797
Green products purchasing behavior	.805

As indicated in Table 5.8, all the Cronbach's coefficient alpha values were greater than 0.6, which indicated that the questionnaire of this study is reliable and acceptable.

5.3 Hypotheses Analysis

There were six hypotheses examined in accordance with the requirement of this research. In this research, Pearson Correlation Coefficient was applied to test the relationship between each independent variable and dependent variable.

Hypothesis 1

$H1_0$: Environmental attitude has no relationship with actual green purchase behavior

$H1_a$ Environmental attitude has a relationship with actual green purchase behavior

Table 5.9: The analysis of the relationship between Environmental Attitude and Actual Green Purchase Behavior

Correlations

		EATT	PPBMEAN
EATT	Pearson Correlation	1	.831**
	Sig. (2-tailed)		.000
	N	402	402
PPBMEAN	Pearson Correlation	.831**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than 0.01(0.000 < 0.01). The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between environmental attitude and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.831) indicates a strongly positive relationship between environmental attitude and actual green purchase behavior.

Hypothesis 2

H2$_o$ Perception of availability has no relationship with actual green purchase behavior

H2$_a$ Perception of availability has a relationship with actual green purchase behavior

Table 5.10: The analysis of the relationship between Perception of availability and Actual Green Purchase Behavior

Correlations

		PPBMEAN	PA
PPBMEAN	Pearson Correlation	1	.633**
	Sig. (2-tailed)		.000
	N	402	402
PA	Pearson Correlation	.633**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than 0.01(0.000 < 0.01). The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between perception of availability and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.633) indicated a strong positive relationship between perception of availability and actual green purchase behavior.

Hypothesis 3

H3$_o$ Attitude towards buying/ using has no relationship with actual green purchase behavior

H3$_a$ Attitude towards buying has a relationship with actual green purchase behavior

Table 5.11: The Analysis of the Relationship between Attitude towards buying / using and Actual green purchase behavior

Correlations

		PPBMEAN	ATTBUY
PPBMEAN	Pearson Correlation	1	.630**
	Sig. (2-tailed)		.000
	N	402	402
ATTBUY	Pearson Correlation	.630**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than 0.01(0.000 < 0.01). The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between attitude towards buying/ using and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.630) indicated a moderate positive relationship between attitude towards buying / using and actual green purchase behavior.

Hypothesis 4

$H4_o$: Perceived price has no relationship with actual green purchase behavior

$H4_a$: Perceived price has a relationship with actual green purchase behavior

Table 5.12: The analysis of the relationship between Perceived Price and Actual Green Purchase Behavior

Correlations

		PRICE	PPBMEAN
PRICE	Pearson Correlation	1	.532**
	Sig. (2-tailed)		.000
	N	402	402
PPBMEAN	Pearson Correlation	.532**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than 0.01 (0.000 < 0.01). The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between perceived price and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.626) indicated a moderate positive relationship between perceived price and actual green purchase behavior.

Hypothesis 5

$H5_o$: Ecological affect has no relationship with actual green purchase behavior

$H5_a$: Ecological affect has a relationship with actual green purchase behavior

Table 5.13: The analysis of the relationship between Ecological Affect and Actual Green Purchase Behavior

Correlations

		PPBMEAN	EAF
PPBMEAN	Pearson Correlation	1	.425**
	Sig. (2-tailed)		.000
	N	402	402
EAF	Pearson Correlation	.425**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than $0.01 (0.000 < 0.01)$. The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between ecological affect and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.425) indicated a moderate positive relationship between ecological affect and actual green purchase behavior.

Hypothesis 6

$H6_0$: Subjective norms has no relationship with actual green purchase behavior

$H6_a$: Subjective norms has a relationship with actual green purchase behavior

Table 5.14: The Analysis of the Relationship between Subjective norms and Actual green purchase behavior

Correlations

		PPBMEAN	SN
PPBMEAN	Pearson Correlation	1	.687**
	Sig. (2-tailed)		.000
	N	402	402
SN	Pearson Correlation	.687**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

Pearson Correlation Coefficient test shows a significant level of 0.000 which is less than 0.01(0.000 < 0.01). The result indicates that the null hypothesis is rejected. Therefore, there is a significant relationship between subjective norm and actual green purchase behavior at the 0.01 significant level. In addition, correlation coefficient value (.687) indicated a moderate positive relationship between subjective norm and actual green purchase behavior.

Table 5.15: Summery of hypothesis test

Null Hypothesis Statement	Significant level	Result
H1o: There is no relationship between consumers' environmental attitudes and their green purchase behaviors in Shanghai, China	.000	Reject Ho
H2o: There is no relationship between product availability and consumers' green purchase behaviors in Shanghai, China	.000	Reject Ho
H3o: There is no relationship between consumers' attitude towards buying/ using green products and their green purchase behaviors in Shanghai, China	.000	Reject Ho
H4o: There is no relationship between perceived price and consumers' green purchase behaviors in Shanghai, China	.000	Reject Ho
H5o: There is no relationship between ecological affect and consumers' green purchase behaviors in Shanghai, China	.000	Reject Ho
H6o: There is no relationship between subjective norms and consumers' green purchase behaviors in Shanghai, China	.000	Reject Ho

As indicated in Table 5.15, all the null hypotheses in this study are rejected, which means that there is a positive relationship between each independent variable and dependent variable.

CHAPTER 6

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to summarize the research results presented in Chapter 5. This chapter is divided into five parts. The first part discusses the research findings in terms of descriptive statistics and hypotheses testing. The second part provides discussion and implication of this research. The third section is to sum up the research. Recommendations are concluded in part four and finally there are some suggestions for the further study.

6.1 Summary of Research Findings

This section reveals respondents' demographic characteristics, actual green purchase behavior, environmental attitude, perception of availability, attitude towards buying / using, perceived price, ecological affect, subjective norms and hypotheses testing.

6.1.1 Demographic Factors

The research obtained the data from 402 respondents who have purchased green products in HiQuality Organic Food Store in Shanghai, China. All the highest percentages of demographic factors were summarized in Table 6.1:

Table 6.1: Summary of Demographics represented by Highest Percentages

Consumer Profile	Variables	Percentage (%)
Gender	Female	55.2
Age level	26-30 years old	37.3
Income	RMB3,001-4,000	37.8
Education level	Bachelor degree	41.5
Employment category	private sector employed	41.3

Table 6.1 indicates that the majority of all respondents were female which account for 55.2 percent of the respondents, and most of the respondents were in the age group of 26 to 30 years old that account for 37.3 percent. For education level, the highest percentage was 'bachelor degree' with 41.5 percent. In addition, 37.8 percent of the respondents have their monthly income between 3,001 RMB and 4,000 RMB. Moreover, 41.3 percent of the respondents are employed in private sector.

6.1.2 Descriptive Analysis

The results of descriptive analysis are exhibited as following:

Actual green purchase behavior: the average mean score is equal to 3.77 which means that the respondents in Shanghai affirm their actual purchase for green product. The highest mean is 4.00 in buying products with environmentally-safe label, showing that the respondents pay attention to the products labeled as environmentally-safe, and is the major force to push the consumers to buy green products, whereas the lowest mean is 3.56 in buying products that contain no or fewer chemical ingredients which means that the consumers still feel uncertain about the ingredients inside the products.

Environmental attitude: obtained an average mean score of 3.74 which means that consumers generate a positive attitude about environment. The highest mean score is 3.98 for the statement "prefer consuming recycled products", exhibiting that there is a tendency to consume recycled products in Shanghai. The lowest mean score is 3.46 for the item "disposing of my garbage in different rubbish bins", implying that there is still a need to encourage and enforce the consumers to dispose of garbage in an environmental friendly manner so that the demand for landfills will be reduced through recycling and composting the trash.

Perception of availability: received an average mean score of 3.8483, which means that the consumers acknowledged the availability of green products. The highest mean scores are 3.96 for both statements "consider purchasing green product if it is available at my regular place of goods purchase" and "consider making a special trip to purchase green product if it is not available at my regular shopping place", indicating that the consumers have a very strong intention to purchase green products.

Attitude towards buying: got an average mean score of 3.9065, which means that the consumers yield a very positive attitude for purchasing or consuming green products. The highest mean score is 3.99 for the statement "buying green products is safe", showing that the consumers are highly concerned about safety issue, and they think that green products can reduce the safety risk.

Perceived price: received an average mean score of 3.8398 indicated that the respondents will accept more green products if the prices of green products are not perceived to be expensive. The highest mean scores are 3.90 for both statements "generally the price of green product is acceptable for me" and "I consider purchasing green product if it is available at affordable price", which mean that most respondents demand a fair price from green products.

Ecological affect: obtained an average mean score of 3.9465, which can be interpreted that the consumers' ecological issue strongly influenced the consumers to participate into green consumption. The highest mean score is 4.09 for the item "I become incensed when I think about the harm being done to plant and animal life by pollution." It can be interpreted that the consumers have a strong opinion with regard to the living circumstances of plants and animals.

Subjective norm: received an average mean score of 3.8539, which shows that the consumers tend to be influenced by their reference group. The highest mean score is 3.99 for the statement "People who are important to me would think that my purchase of green product was a wise choice", which can be interpreted that the consumers are strongly influenced by those who they perceived as important to them.

6.1.3 Summary of Hypothesis Testing

Six hypotheses were formed based on the objectives and questions of the study for testing. The statistical technique used for analyzing the data was Pearson Correlation Coefficient.

Table 6.2: Summary of Hypothesis Testing

		Purchase Behavior	Environmental Attitude	Perception Of Availability	Attitude Towards Buying	Perceived Price	Ecological Affect	Subjective Norm
Purchase Behavior Mean	Pearson correlation	1	.831	.633	.630	.532	.425	.687
	Sig.(2-tailed)		.000	.000	.000	.000	.000	.000
	N	402	402	402	402	402	402	402

As shown in the Table 6.2 that there is a significant relationship between each independent variable and dependent variable at the 0.01 significant level. The summary of all six hypotheses outcomes are as follows:

Hypothesis one: There is a positive relationship between environmental attitude and actual green purchase behavior

Hypothesis two: There is a positive relationship between perception of availability and actual green purchase behavior

Hypothesis three: There is a positive relationship between attitude towards buying and actual green purchase behavior

Hypothesis four: There is a positive relationship between perceived price and actual green purchase behavior

Hypothesis five: There is a positive relationship between ecological affect and actual green purchase behavior

Hypothesis six: There is a positive relationship between subjective norm and actual green purchase behavior

6.2 Discussion and Implications of the Research

According to the research outcomes in the aforementioned section, the hypothesis testing shows that all null hypotheses are rejected. The discussions of all six hypotheses were shown as follows:

Hypothesis one (H1): The result of the analysis indicated that there was a positive relationship between environmental attitude and actual green purchase behavior.

The researcher can conclude that correlation value of .831 shows that environmental attitude has a strong impact on consumers' actual green purchase behavior for green products. It can be interpreted that environmental attitudes has positive impact on environmental behavior. As the consumers' attitudes towards environmental issue are strong and positive, or as the consumers express higher concern about environment, they most likely will convert their thoughts into environmental behavior. The consumers presented a higher intention to purchase green products. This result is similar to the findings of Kotchen and Reiling (2000), and Lee (2008, 2009). Also, 71.6 percent

respondents had at least at bachelor degree, so there is most likely the respondents with higher education level would express stronger environmental attitude. According to the findings, the respondents who are more encompassed environmental practices (through practicing environmental conservation task and recycling practices) are more actively participate in buying green products. This result is in line with the findings of De Magistris and Gracia (2008), who mentioned that the consumers with higher involvement with environmental practices will be more willing to buy organic food products. In addition, this finding is also supported by the finding of "Greendex 2010" survey (National Geographic, 2010), which grades countries according to the green consumption patterns of the citizens. Chinese consumers gained the third highest score (56.1) after India and Brazil as the awareness of environmental protection has increased among Chinese consumers. Chinese consumers have actively started to consume green products such as recycled products, green food products, energy-efficient appliances, compact fluorescent bulbs, organic and not-toxic alternatives to household chemicals and pesticides.

Hypothesis two (H2): The result of the analysis indicated that there was a positive relationship between perception of availability and actual green purchase behavior.

The researcher can conclude that correlation value of .633 shows that product availability has a strong impact on consumers' actual green purchase behavior for green products, which is supported by findings of Davies *et al.,* (1995), who stressed that product availability has greatly influenced consumers purchasing behavior like buying organic food. If products are not easily found or unavailable, the consumers may have difficulty to obtain the products (Tanner & Kast, 2003). The mean score of 3.96 for both statements "considering to purchase green product if it is available at regular shopping place" and "making a special trip to purchase green product if it is not available at regular

shopping place" shows that the availability is a major reason for the consumers to obtain green products, and the unavailability can be an obstacle for their purchase. This result is in line with the findings of Magnusson *et al.*, (2001), who mentioned that there can be obstacle for the consumers purchasing organic food at a shop if the organic food is unavailable. In fact, the research finding implies that lack of product availability could be a barrier for consumers to obtain green product, which is similar to the findings of various researchers(Vindigni *et al.*, 2002, Chryssohoidis and Krystallis, 2000; Lea and Worsley, 2005; Makatouni, 2002; Mintel, 2000; Botonaki *et al.*, 2006; Fotopoulos and Krystallis, 2002b; Worner and Meier-Ploeger,1999; O'Donovan and McCarthy, 2002; Rodríguez *et al.*, 2008, Zanoli and Naspetti, 2002; Hughner *et al.*, 2007).

Hypothesis three (H3): The result of the analysis indicated that there was a positive relationship between attitude towards buying/using and actual green purchase behavior behavior.

Correlation value of .630 shows that consumers' attitude towards buying/using green product has a strong impact on their actual green purchase behavior, which is in line with the findings of Tarkianien and Sundqvist (2005), who identified a significant relationship between attitude towards buying organic food and intention to buy. Choo *et al.*, (2004) studied the purchase behavior of new food product and established that attitude had positive impact on behavioral intention among Indian consumers. It means that consumers' attitude towards buying/ using green products are facilitated by the attitudes of consumers. Once the consumers feel favorable about green products, they will develop an optimistic attitude towards green products.

Hypothesis four (H4): The result of the analysis indicated that there was a positive relationship between perceived price and actual green purchase behavior behavior.

The research finding implies that the green products will be more acceptable to the consumers only when prices are not perceived to be expensive as compared to conventional products. Correlation value of .532 is similar to the findings of Tarkianinen and Sundqvist (2005), who found that the relationship between price and buying intentions was not found when the price of organic product is expensive, which indicated that the expensive price of green product is an obstacle for consumers to make a buying-decision. In addition, a mean score of 3.88 for the item "the price of green product is relatively expensive" is same as the findings of Hill & Lynchehaun (2002, 2001), Magnusson *et al.*, (2001), Tregear *et al.*, (1994), Batt and Giblett(1999), Padel and Foster (2005), Lea and Worsley (2005), McEachern and Willock (2004), Vindigni *et al.*, (2002), Botonaki *et al.*, (2006), Fotopoulos and Krystallis (2002), Worner and Meier-Ploeger (1999), O'Donovan and McCarthy (2002), Zanoli and Naspetti (2002), Hughner *et al.*, (2007), and Byrne *et al.*,(1991), who found that as compared to conventional products, a relative high price is one of barriers for consumers to purchase organic products. Also, the mean score of 3.78 for the statement "the price of green product is very important to me" reflects that consumers perceive price as an important factor, which is supported by studies of Peter and Olson (1990), who pointed out that price is a key factor in buying decision-making process.

Hypothesis five (H5): The result of the analysis indicated that there was a positive relationship between ecological affect and actual green purchase behavior.

A mean score of 3.9465 reflects that the respondents in Shanghai expressed a strong sentimental connection with ecological issues as compared to the finding of Benton (1994), in which American college students only got mean score of 3.30 for ecological affect. Also, this result is in agreement with studies of Chan and Lau (2000), who found that Chinese people exhibited their favor for ecological affect (3.77 out of 5).

The research interpreted that the respondents appear to express a strong response towards ecological issues. In addition, when ecological affect was segmented by education level, it can be interpreted that the respondents with higher educational level have stronger emotion towards ecological issues. This finding is similar to the aforementioned finding regarding Hypothesis one (H1).

Hypothesis six (H6): The result of the analysis indicated that there was a positive relationship between subjective norm and actual green purchase behavior behavior.

The respondents' actual green purchase behavior is positively correlated with subjective norm with correlation value of .687. The finding implies that the respondents' purchasing behavior can be influenced by the people close to them. As Chinese culture is perceived to be collectivistic culture, in which an individual is expected to subordinate his interests to conform to larger social norms (Hofsted, 1980), it can also be argued that Chinese consumers are strongly affected by having a sense of social identity through collective perception about their concern for the consumption of green food product. The result is also in agreement with the findings of Lee (2008), who mentioned that social influence plays a key role in adolescents when it comes to purchase of green products.

6.3 Conclusions

Based on the research findings, the researcher's observation and interviews with the consumers while collecting the data, some issues and suggestions can be discussed and proposed. The present research was undertaken to investigate consumers' actual purchase behavior towards green products in Shanghai, China. Influencing factors such as environmental attitude, perception of availability, attitude towards buying/ using, perceived price, ecological affect and subjective norm were included in order to

understand consumers' buying behavior. The questionnaires were distributed to a total of 402 respondents in Shanghai, who have had experiences of purchasing green products at HiQuality Organic Food Store.

The findings revealed that the majority of the respondents were female, aged between 26 to 30 years old, bachelor degree, private sector employed and monthly income of RMB 3,001 to 4,000.

For hypothesis testing, the data were analyzed by using SPSS to test six hypotheses. Environmental attitude has the strongest relationship with the respondents' actual green purchase behavior behavior (.831), followed by subjective norm (.687), perception of availability (.633), attitude towards buying/ using (.630), perceived price (.532), and ecological affect (.425). The respondents in this study bring to light to their strong emotion towards environmental issue, and environmental attitude is the predominant motive for the respondents' decision-making about purchasing green products because it has the strongest influence on the respondents' actual purchase for green products. The researcher can conclude that the network and among Chinese consumers themselves can generate a theme of environmental-based purchase behavior and they may be encouraged and influenced by their reference groups to participate in purchasing green products. Chinese consumers have expressed their favor towards consuming green products, so their thoughts are most likely to be converted into the real action. In addition, price is a key factor for consumers to decide to buy or not to buy a product. According to the findings, relatively expensive price is a main obstacle for Chinese consumers to obtain green products, and they may not make a purchase decision for green products as their prices are relatively expensive as compared to conventional products.

6.4 Recommendations

There are some recommendations that the researcher would propose to develop green consumption.

Firstly, the research findings revealed the importance of attitude towards environment (H1), green product (H4) and ecological issues (H5). Therefore, the marketers can look into the matter. As consumers express higher concern about environmental issues and green products, there is a need to stress the properties of green product from the perspective of health and quality. Conventional agriculture plays a main role in modern agriculture system, in which a wide range of synthetic chemicals has been used that will more or less remain residues in the production process (Finisterra do Paco and Raposo, 2008). Thus, the marketers need to popularize the different production methods that green products have to differentiate from conventional products. In addition, a life cycle assessment (LCA) should be implemented by industry. LCA is considered as the analysis and evaluation of environmental impact of a given product throughout its lifespan, and by implementing LCA, the cradle-to-grave environmental assessment so-called "green designed" is used from the extraction of material to product manufacture to product use and finally to recycle and disposal. Therefore, the industry can improve the environmental performance of product. Moreover, in order to encourage more consumers to develop a positive attitude towards environment and ecological issue and to consume green products, there is an urgent need to take action to popularize environmental protection knowledge as the degradation of environment and bio-diversity is soaring at an alarming rate at this moment. For example, general public should be educated that using recycling products is a desirable approach to reduce the environmental and ecological damage risk, because it can obviate the need to extract raw materials from the earth. Thus,

it can preserve natural resources and eliminate ecological impact from the extraction phase.

Secondly, based on the findings of hypothesis two (H2), product accessibility and availability are two important issues for consumers, green food product enterprises and marketers. The findings point to the needs of improvement about green food products in terms of supply, distribution and allocation due to the rising demand for green food product. Some respondents suggested that green food products should be distributed to various convenience stores rather than restricting only to hypermarkets and some particular shops. Additionally, the stores should expand the operating hours, because it will be easy and convenient for them to access the products.

Next, the importance of subjective norm (H6) in Chinese interpersonal network was revealed. Chinese consumers express a high concern about a sense of ascription, acceptance, social identify and recognition. Predominantly, the marketers should use a good word-of-mouth as a platform to deliver a positive message to the customers, through which a firm reputation of green products will be established. Also, the marketers can create an "opinion leader" in order to cultivate other potential customers for green consumption. In addition, the marketers should develop a membership program for those customers who purchase green food products, so the marketers will be able to conduct positive word-of-mouth for consuming green food products among customers. More importantly, based on the findings from demographic analysis, the researcher would like to suggest that the marketers should use those young celebrities who have positive social images to attract to younger consumers so that more and more young consumers will generate an optimistic attitude towards green consumption. Potentially, these young consumers may take action in buying green products in the near future.

From the results of hypothesis four (H4), the researcher deems it necessary that marketers of the "green labeled products" implement the following strategies to ensure the product's successful launch as well as sustainable consumption: firstly, effective advertisement message about the green labeled products' elaborating superior benefits in terms of their greater ability in satisfying consumers' needs and ameliorating environments, as well as their availability needs to be mapped out and implemented prior to and continuously after the product's launch to inform, cultivate familiarity, purchase intention, and remind the target market. Secondly, since premium quality – high price image of "green labeled products" as commonly perceived by consumers, by and large tend to deter their purchase intention. Therefore, to increase product's affordability, thereby accelerate consumers' buying decision, create product's tradability, and simultaneously increase the product's purchase volume, marketers of "green labeled products" should consider using such promotional strategy as discount pricing during weekends, the period when consumers would normally shop for household consumption. The intermittent promotional strategy would not entail negative image on the green's product quality. Thirdly, the "green labeled products" should be marketed at a price perceived by consumers as reasonable so as to convince low end consumers (low socio-economic class consumers) to try and eventually adopt the usage of green products.

In conclusion, the researcher would suggest that the enterprises and marketers of "green labeled products" should exert more effort to ascertain that all employees in the company wholeheartedly share its philosophy of making the environment greener through the marketing and usage of green products, and the aforementioned strategies are consistently implemented so that the consumption of green products becomes a reality.

6.5 Further Study

The researcher conducted the study on actual green purchase behavior of consumers in Shanghai giving useful information for the marketers of green products. The following suggestions will be useful for the researcher to expand to related fields.

1. This study focuses on the consumers in Shanghai who have had experience in purchasing green product, so it is better to understand, to a certain extent, buying characteristics of consumers in Shanghai. However, different cultures have different perceptions and user behaviors; hence a further study could investigate other culture or another population such as Thai consumers. Comparative studies could be undertaken to find the differences between Thai consumers and Chinese consumers on purchasing green products.

2. Further studies could focus on the food safety and quality issues. Consumers nowadays pay more attention to the food they have eaten in terms of the nutritious level, health issues, safety issue and quality (Gil *et al.*, 2000), and food safety issues from agribusiness perspective are widely discussed by scholars (Fox, 1995; Hayes *et al.*, 1995; Stefani & Henson, 2001).Thus; the new research can include food / product safety and quality issues.

3. The study focused on the analysis of green food products, so the further study should involve other types of green products, or should explore consumers' perceptions towards labels, packaging, green values, or green service for a particular green product.

4. Further study can also focus on consumers' satisfaction and repurchase motives towards consumption of green product, through which the research will be able to find out the consumers motivation for their second purchase or even more.

5. Further study should analyze each factor's impact on actual buying behavior by segmentation, through which a clear understanding about Chinese consumers' characteristics will be revealed. Schiffman and Kanuk (2004) identified the market segmentation as a process to divide a market into subgroup of consumers based on their common needs.

6. As surveys are useful for providing an explanation as to what consumers do and think, the in-depth research either individual interview or focus group should be organized for the further study through which the researcher will have a better understanding about how consumers feel about green products and why the consumers feel in a specific way.
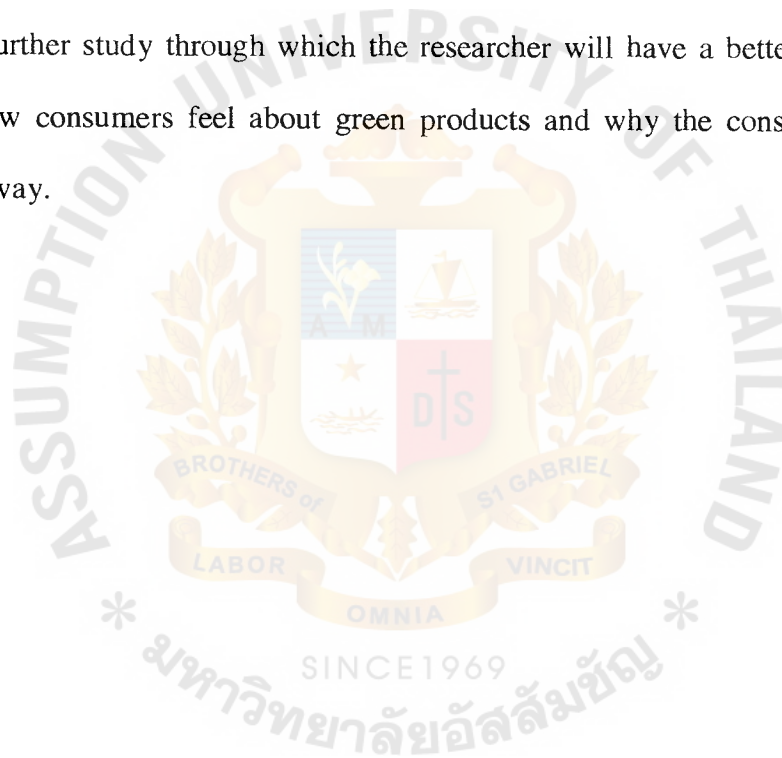
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http://www.icapcarbonaction.com/.../china.../icap_china_conf_plenary5_cheng.pdf (20/May/2010)

http://www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=4362 (20/May/2010)

http://www.ofcc.org.cn/Sites/ofcc/List_5515_6882.html (08/April/2010)

http://www.sepacec.com (08/April /2010)

http://www.theglobalist.com/StoryId.aspx?StoryId=4156(20/May/2010)

APPENDIX A
QUESTIONNAIRE IN ENGLISH VERSION

Questionnaire

This questionnaire is designed to obtain information for my research entitled "A study of factors influencing consumers' green purchase behavior in Shanghai, China," for the purpose of research project for completion of the Master of Business Administration at Assumption University. Please answer all the following questions in this questionnaire and thank you for your cooperation.

Part I: Screening Question

1. Do you have an experience about green product? (Please mark √)
   ☐ Yes (Please continue)
   ☐ No (No further)

Part II: Factors Influencing Green Purchase

Please indicate by selecting from 1 to 5 which best reflects the degree of your attitude towards purchase of green products."1 "refers to "strongly disagree", "2" refers to "disagree", "3"refers to "neutral", "4" refers to "agree" and "5" refers to "strongly agree"

	Variables	1	2	3	4	5
1.1	**Environmental Attitudes**					
1	The current development is destroying the green environment.					
2	Environmental damage will be reversible if we do something					
3	I practice environmental conservation tasks.					
4	I prefer consuming recycled products.					
5	I dispose my garbage in different rubbish bins					
1.2	**Perception of Availability**					
6	Green products are always sufficiently available.					
7	I consider purchasing green product if it is available at my regular place of goods purchase.					
8	I consider making a special trip to a store that sells green product if green products are not available at my regular shopping place.					

1.3	Attitude towards Buying					
9	I think that buying green products is reasonable.					
10	I think green products have superior quality.					
11	I think buying green products can ensure good health.					
12	I think buying green products is safe.					
13	My attitude towards buying green products is positive.					
1.4	Perceived Price					
14	The price of a green product is very important to me.					
*15	I refrain from buying green products because they are too expansive as compared to conventional products.					
16	I consider purchasing green products if it is available at affordable price.					
*17	The price of green product is relatively expensive					
18	Generally, the price of green product is acceptable for me.					
1.5	Ecological Affect					
*19	It frightens me to think that much of the food I eat is contaminated with pesticides.					
*20	It genuinely infuriates me to think that the government doesn't do more to help control pollution of the environment.					
21	I become incensed when I think about the harm being done to plant and animal life by pollution.					
*22	When I think of the ways industries are causing pollution, I get frustrated and angry.					
1.6	Subjective Norm					
23	People who influence my behavior would think that my purchase of green product was a wise choice.					
24	People who are important to me would think that my purchase of green product was a wise choice.					
25	My family members who influence me most would think that my purchase of green product was a wise choice.					
26	My family members who are important to me would think that my purchase of green product was a wise choice.					

*The researcher already converted scores when analyzing the data

Part III Green Products Purchase Behavior

Please indicate by selecting from 1 to 5 which best reflects the degree of your actual purchase of green products."1 "refers to "strongly disagree", "2" refers to "disagree", "3"refers to "neutral", "4" refers to "agree" and "5" refers to "strongly agree"

	Green Product Purchasing Behavior	1	2	3	4	5
1	I often buy green product.					
2	I often buy products that are labeled as environmentally-safe.					
3	I often buy products that use recycled/recyclable packaging.					
4	I often buy products that contain no or fewer chemical ingredients.					

Part IV Personal Information

Direction: This part seeks information regarding your personal background. For each question, please marks " √ " to the response that applies to you.

1. Age Category

☐ Under 20 years	☐ 21 – 25 years
☐ 26 - 30 years	☐ 31 – 35 years
☐ 36- 40 years	☐ 41 years or above

2. **Gender**

☐ Male	☐ Female

3. **Highest Education**

☐ High school or less
☐ College graduate
☐ Bachelor degree
☐ Master degree or higher

4. Occupation

☐ University students
☐ Government Sector Employee
☐ Private Sector Employee
☐ Business Owner
☐ Others (Please specify) _____

5. Monthly Income

☐ Under 1,000 Yuan
☐ 1,001-2,000 Yuan
☐ 2,001-3,000 Yuan
☐ 3,001-4,000 Yuan
☐ Over 4,001 Yuan
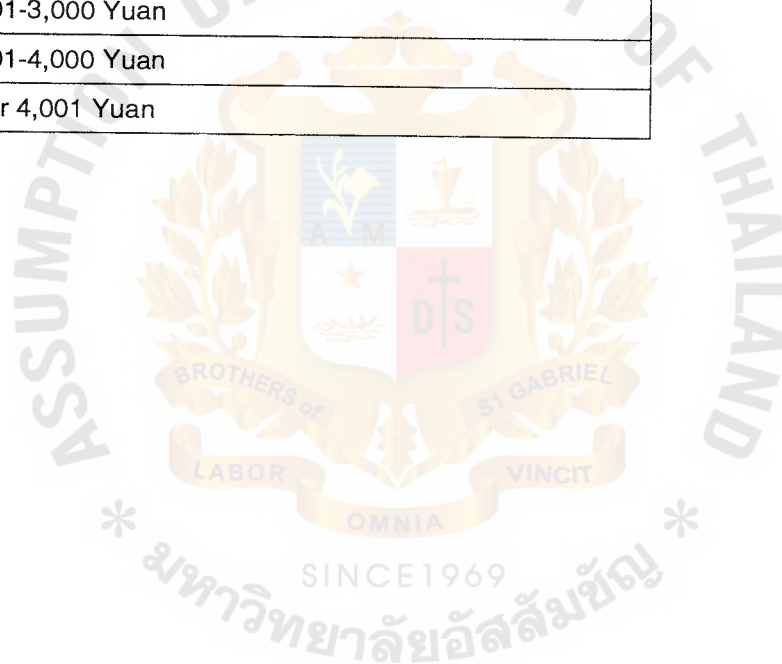
APPENDIX B

QUESTIONNAIRE IN CHINESE VERSION

问卷调查：

您好！为了更好的了解环保产品的市场发展趋向，从而更好的适应环境保护发展的趋势，响应和参与低碳经济建设，我们希望通过数据收集和分析来了解中国消费者的绿色产品的消费行为和态度。请您抽出宝贵的十分钟来填写这份问卷。您的支持与参与是我们成功的基石，谢谢您的合作！此外，您所提供的信息将仅被用于学术研究，不会被用于其他的商业用途，请放心填写。

第一部分： 您有过购买或是使用绿色产品的经历吗？（请打 √ 回答）
□ 有过
□ 没有

第二部分　影响绿色消费的因素

请在所提供的 5 个选项中选择一个最能够反应你对绿色食品的态度。其中，"1"代表"非常不同意"，"2"代表"同意"，"3"代表"中间"，"4"代表"同意"，"5"代表"非常同意"

		1	2	3	4	5
2.1	环境态度					
1	现今的发展之路正在摧毁环境					
2	如果我们做些有益环境的事情，那么环境的破坏将可以逆转					
3	我将环境保护实践化					
4	我喜欢消费可循环利用的产品					
5	我将垃圾分类实践化					
2.2	产品的可获得性					
6	绿色产品一直是非常充足的					
7	在我经常购物的地方如果有绿色产品，我会考虑购买绿色产品					
8	在我经常购物的地方如果没有绿色产品，我会考虑特地的到其他有绿色产品的商店购买绿色产品					
2.3	购买态度					
9	我认为购买绿色产品是合理的					
10	我认为绿色产品代表好质量					
11	我认为绿色产品能够确保健康需求					

12	我认为购买绿色产品是安全的					
13	对于绿色产品，我的态度是积极的					
2.4	**价格**					
14	对于绿色产品，价格对我来说是非常重要的					
*15	我克制购买绿色产品是因为它们的价格相对于传统产品来说是太昂贵了					
16	如果绿色产品的可买性是建立在一个可支付的价格基础上，我会考虑购买绿色产品					
*17	绿色产品的价格相对来说是比较贵的					
18	通常来说，绿色产品的价格是可接受的					
2.5	**生态影响**					
19	当我想到我吃的食物里含有农药，我很害怕					
20	当政府没有对环境污染做出太多的控制，我很生气					
21	当想到污染对植物和动物造成的伤害，我会愤怒					
22	每当我想到工业所造成的环境污染，我都会很生气和灰心失望					
2.6	**主观规范**					
23	那些可以影响我行为的人们认为我购买绿色产品是一个明智的选择					
24	那些对我来说是重要的人们认为我购买绿色产品是一个明智的选择					
25	在我家里，对我最有影响的家庭成员认为我购买绿色产品是一个明智的选择					
26	在我家里，重要的家庭成员认为我购买绿色产品是一个明智的选择					

第三部分 绿色产品实际购买行为

请在所提供的 5 个选项中选择一个最能够反应你绿色产品的实际购买行为。其中，
"1"代表"非常不同意"，"2"代表"同意"，"3"代表"中间"，"4"代表
"同意"，"5"代表"非常同意"

	绿色产品消费行为	1	2	3	4	5
1	我经常购买绿色产品					
2	我经常购买那些有环保安全标志的产品					
3	我经常购买那些使用可循环包装的产品					
4	我经常购买那些不含或者是只包含很少化学成分的产品					

第四部分 个人信息

提示：这个部分的问题只是在于获取您的基本个人信息。请在适合的况里打"√"

1 年龄

□ 20 周岁以下	□ 21－25 周岁
□ 26 - 30 周岁	□ 31－35 周岁
□ 36- 40 周岁	□ 40 周岁以上

2 性别

□ 男性	□ 女性

3 最高学历

□ 高中或高中以下
□ 大专学历
□ 本科学历
□ 研究生学历或更高

4 职业

☐ 大学学生
☐ 政府职员
☐ 商人
☐ 私人企业职员
☐ 其他，请注明_____

5 月收入

☐ 低于 1000 人民币
☐ 1,001-2,000 人民币
☐ 2,001-3,000 人民币
☐ 3,001-4,000 人民币
☐ 4,001 人民币以上
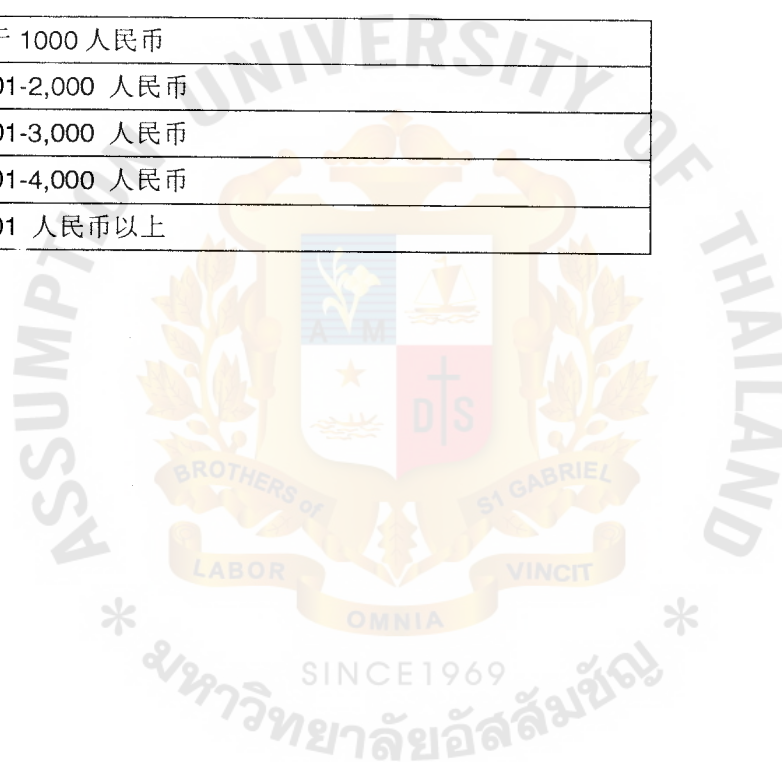
Reliability of Variable

a. Environmental attitude

Reliability Statistics

Cronbach's Alpha	N of Items
.745	5

b. Product Availability

Reliability Statistics

Cronbach's Alpha	N of Items
.751	3

c. Attitude towards buying

Reliability Statistics

Cronbach's Alpha	N of Items
.744	5

d. Price

Reliability Statistics

Cronbach's Alpha	N of Items
.689	5

e. Ecological Affect

Reliability Statistics

Cronbach's Alpha	N of Items
.806	4

f. Subjective norm

Reliability Statistics

Cronbach's Alpha	N of Items
.797	4

g. Actual Purchasing Behavior

Reliability Statistics

Cronbach's Alpha	N of Items
.805	4

Descriptive Analysis

a. Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	younger than 20years old	6	1.5	1.5	1.5
	21-25 yeas	50	12.4	12.4	13.9
	26-30years	150	37.3	37.3	51.2
	31-35 years	108	26.9	26.9	78.1
	36-40	60	14.9	14.9	93.0
	41 or above 41	28	7.0	7.0	100.0
	Total	402	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	180	44.8	44.8	44.8
	female	222	55.2	55.2	100.0
	Total	402	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school or less	26	6.5	6.5	6.5
	college graduate	88	21.9	21.9	28.4
	bachelor	167	41.5	41.5	69.9
	master or above	121	30.1	30.1	100.0
	Total	402	100.0	100.0	

occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	unversity students	6	1.5	1.5	1.5
	government sector employee	127	31.6	31.6	33.1
	private sector employee	166	41.3	41.3	74.4
	business owner	72	17.9	17.9	92.3
	others	31	7.7	7.7	100.0
	Total	402	100.0	100.0	

income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	under RMB1,000	5	1.2	1.2	1.2
	RMB 1,001-2,000	34	8.5	8.5	9.7
	RMB 2,001-3,000	119	29.6	29.6	39.3
	RMB 3,001-4,000	153	38.1	38.1	77.4
	RMB 4,001 or above	91	22.6	22.6	100.0
	Total	402	100.0	100.0	

b. Mean Score and Standard Deviation

Environmental Attitude

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
current development destroyed the environment	402	1	5	3.89	.908
environ damage will be reversible if we do something	402	1	5	3.74	.942
i practice environ conservation task	402	1	5	3.68	.947
i prefer consuming recycled products	402	1	5	3.98	.870
i dispose garbage in different containers	402	1	5	3.46	.939
EATT	402	1.40	5.00	3.7478	.64831
Valid N (listwise)	402				

Perception of Availability

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
green products are always sufficiently available	402	1	5	3.63	.971
consider to purchase if green product is available at regular place of shopping	402	1	5	3.96	.925
making a special trip for green product if it is not available	402	1	5	3.96	.887
PA	402	1.67	5.00	3.8483	.75838
Valid N (listwise)	402				

Attitude towards Buying

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
buying green is reasonable	402	1	5	4.09	.900
green products have superior quality	402	1	5	3.83	.702
green products can ensure good health	402	1	5	3.66	.988
green product is safe	402	1	5	3.99	.935
my attitude for buying green is positive	402	1	5	3.97	.906
ATTBUY	402	2.20	5.00	3.9065	.62692
Valid N (listwise)	402				

Perceived Price

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
price is very important to me	402	1	5	3.78	.978
refrain from buying green coz they are too expensive	402	1	5	3.74	.953
consider to purchase if it is available at affordable price	402	1	5	3.90	.918
price of green product is relatively expensive	402	2	5	3.88	.879
the price of green is acceptable	402	1	5	3.90	.976
PRICE	402	1.80	5.00	3.8398	.62835
Valid N (listwise)	402				

Ecological Affect

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
it frightens me to think that much of the food i eat is contaminated with pesticides	402	1	5	3.87	.835
it infuriates me to think that govern doesn't do more to help controlling pollution of environ	402	1	5	4.00	.929
i become incensed when i think about the harm being done to plant and animal life by pollution	402	1	5	4.09	.900
when i think of the was industries are causing pollution, i get frustrated and angry	402	1	5	3.83	.702
EAF	402	1.75	5.00	3.9465	.67226
Valid N (listwise)	402				

Subjective Norm

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
people who influence my behavior would think that my purchase of green was a wise choice	402	1	5	3.66	.988
people who are important to me would think that my purchase of green was a wise choice	402	1	5	3.99	.935
my family member who influence my behavior would think that my purchase of green was a wise choice	402	1	5	3.97	.906
my family member who is important to me would think that my purchase of green was a wise choice	402	1	5	3.80	.946
SN	402	1 75	5.00	3.8539	.74443
Valid N (listwise)	402				

Correlation Coefficient Analysis (Pearson Correlation)

a. Environmental Attitude and Actual green purchase behavior

Correlations

		PBMEAN	EATT
PBMEAN	Pearson Correlation	1	.831**
	Sig. (2-tailed)		.000
	N	402	402
EATT	Pearson Correlation	.831**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

b. Perception of Availability and Actual green purchase behavior

Correlations

		PBMEAN	PA
PBMEAN	Pearson Correlation	1	.633**
	Sig. (2-tailed)		.000
	N	402	402
PA	Pearson Correlation	.633**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

c. Attitude towards Buying and Actual green purchase behavior

Correlations

		PBMEAN	ATTBUY
PBMEAN	Pearson Correlation	1	.630**
	Sig. (2-tailed)		.000
	N	402	402
ATTBUY	Pearson Correlation	.630**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

d. Perceived Price and Actual green purchase behavior

Correlations

		PBMEAN	PRICE
PBMEAN	Pearson Correlation	1	.532**
	Sig. (2-tailed)		.000
	N	402	402
PRICE	Pearson Correlation	.532**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

e. Ecological Affect and Actual green purchase behavior

Correlations

		PBMEAN	EAF
PBMEAN	Pearson Correlation	1	.425**
	Sig. (2-tailed)		.000
	N	402	402
EAF	Pearson Correlation	.425**	1
	Sig. (2-tailed)	.000	
	N	402	402

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

f. Subjective Norm and Actual green purchase behavior

Correlations

		PBMEAN	SN
PBMEAN	Pearson Correlation	1	.687**
	Sig. (2-tailed)		.000
	N	402	402
SN	Pearson Correlation	.687**	1
	Sig. (2-tailed)	.000	
	N	402	402

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