

Building a Survey Tool to Assess Consumers' Perception and Behavior Towards Green Consumption

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Abstract. Studies on green consumption behavior in Vietnam are neither popular nor conducted carefully, especially empirical studies. With the aim of contributing to this research field, this paper adopts a new approach to find out consumers' perception and behaviors towards green consumption by constructing a survey tool. Based upon the conceptual framework developed as a combination of determinants affecting green consumption found in previous studies and Ajzen's Theory of planned behavior, a sample questionnaire for survey has been designed and pre-tested. The paper also provides guidelines for question design, trials and adjustments.

Keywords: Green consumption, influential factors, questionnaire, survey.

1. Introduction

Consumption decisions have changed towards products that are greener, more suitable and more environmentally friendly due to the rise in consumers' awareness of current environmental matters. In developed countries, the green consumption movement has existed for a long time and now has become increasingly popular. With higher incomes and consumption awareness, green consumption has been improved in developing economies. Green consumption is an important part of sustainable consumption - a pillar of green growth, which is a development strategy that many countries including Vietnam are pursuing. Vietnam is currently building its green product

development programme with a vision towards 2020. However, green consumption practice in Vietnam in many facets - from consumers to enterprises to government - is in its early stages. Research activities in this field are still not adequately addressed by experts. There is a lack of in-depth and empirical studies, especially on green consumption behavior. Meanwhile, green consumption is a part of the supply-demand relationship; therefore understanding the intrinsic nature of green consumer behavior will help governments and businesses grasp and meet the needs of consumers in the direction of "green", as well as the development of consumption trends in Vietnam. This fact poses the challenge to develop a survey tool for governments and businesses to use to actively explore and identify the current situation of green consumption and its influential factors.

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2. Green consumption concepts and findings from previous studies

The survey tool is built on the basis of green consumption concepts as well as the results from previous research on factors affecting green consumption behavior. The concepts relating to green consumption are relatively new and defined with various approaches. Green consumption emphasizes environmental factors, contributing to sustainable development. Alfredsson (2004) explained that green consumption is related to the index of energy use and CO₂ emissions. According to Carrigan et al (2004), people who buy environmentally friendly products are called green consumers. Green consumption is related not only to consuming goods without damage to the natural environment, but also to buying environmentally friendly products and to recycling. Sisira (2011), Mansvelt & Robbins (2011) also have a comprehensive definition of green consumption from the perspective which considers it a process through social behaviors including purchase of bio-foods, recycling, reuse and limits to excessive use and using an environmentally friendly transport system. In the framework of this study, the authors approach the concept of green consumption as a series of activities: (1) green product purchase, (2) green usage (such as saving, reusing, recycling, green packaging usage, and green waste treatment) and (3) encouraging the community to purchase green products and use things in a green way.

In understanding green consumption, the concept of green products also needs clarifying. Green products (eco-products or environmentally friendly products) are considered as products that do not pollute the earth or damage natural resources and can be recycled or conserved (Shamdasani et al, 1993). A product that has packaging materials that reduce any negative environmental impact is a green product (Wasik, 1996). These products are usually recognized by authorities and

organizations with green labels – which identify environmental criteria that green products meet that conventional products cannot.

One vital aspect of the green consumption theory is the factors that influence the decision to buy green products. Many studies have been conducted to evaluate factors affecting green consumption and have made important experimental findings about the positive relationship between the intention to buy green products and age, income and education (Roberts, 1996; Barr et al, 2003; Tikka et al, 2000). Schwepker & Cornwell (1991), Davis (1993) and Synodinos (1990) have the same viewpoint that consumers' attitudes towards an eco-label must show their concern for eco-labels. However, Pickett-Baker & Ozaki (2008) argue that a person with an interest in the environment does not necessarily have to buy environmentally friendly products.

The influential group has significant impact on the formation of the intention and the purchasing habits of consumers with conventional products in general, and green products in particular. Buying decisions are also influenced by family factors (Grønhoj, 2006); society (Chan, 2001); government (Chyong et al, 2006; Haron et al., 2005, Fraj & Martinez, 2006); media (Stefania Valentini, 2011; Kang & James, 2007). The process from intention to actual behavior is driven by product attributes. Researchers have identified several factors including price and product quality (D'Souza et al, 2007), the company's environmental reputation (Cornwell, 1991), and the reliability of environmental advertising (Thøgersen, 2000). According to Tang et al (2004), consumers choose a product because of the nature of environmentally friendly products; Diamantopoulos et al (2003) and Gan et al (2008) suggested that the characteristics of traditional products such as brand name, price and quality are still the most important factors that consumers consider when making a purchase decision. Davies & Knight (2007)

pointed out that customers require evidence to ensure that a company or product brand has a positive impact on the environment and give priority to products with reputed brands (Forte & Lamont, 1998). A report by the Massachusetts Department of Environmental Protection (2002) also found that the way to overcome the difficulties in identifying and locating green products is to use the eco-label (green label) to provide information that products have a less negative environmental impact.

Based on these theories associated with the assessment and analysis of models used in the studies on green consumption, the authors found that the model built and developed by Ajzen is highly applicable and popular, and so the authors have built a conceptual framework with factors that influence green consumption. Ajzen's theory and the conceptual framework development were interpreted in detail in Vu Anh Dung et al (2012). The framework is applied in building the tool to assess factors affecting green consumption as follows:

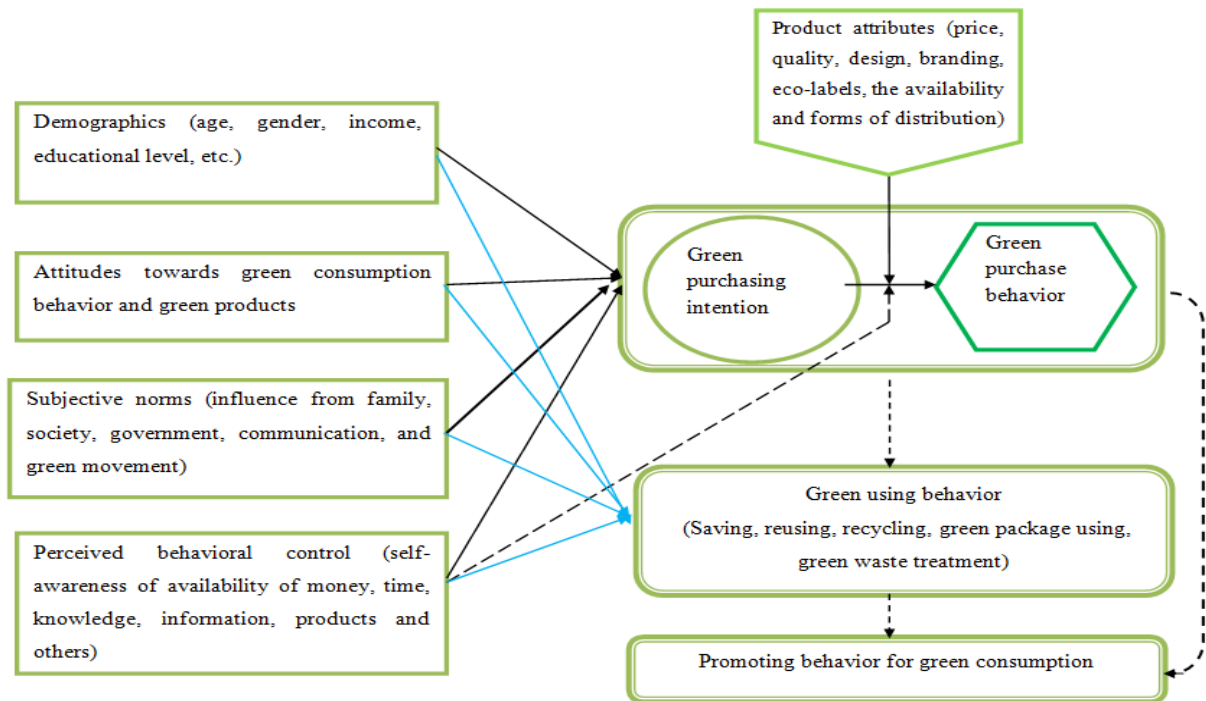


Figure 1: The conceptual framework of factors affecting green consumption behavior.

This model consists of 9 groups of factors, including:

- *Green purchasing intention*: behavioral intention to buy or not to buy green products
- *Green product purchase behavior*: actual action to buy some green product
- *Green using behaviors*: saving, reusing, recycling, green package using, green waste treatment.

- The saving behavior: to restrict energy usage, to use just enough resources and limited use of disposable products...
- The recycling behavior: to create new products from old household items, to collect old furniture taken to the recycling facility...
- The reusing behavior: to take advantage of the still useful resources (paper printed in

one side, empty bottles...), to limit the purchase of new appliances...

- The green packaging usage: to reduce use of plastic bags; to use the lane/bags/friendly environment bags/recycling bags, to use clean plastic bags many times.

- The green waste treatment: to throw garbage in the right place, to classify inorganic and organic garbage...

- *The promoting behaviors for green consumption*: to share, to remind others to have green consumption behavior

- *Demographics*: age, gender, education level and income.

- *Attitudes towards green consumption and green products*: the like/dislike, support/no support for green products and green consumer behavior.

- *Subjective norms towards green consumption behavior*: awareness of pressure from governments, green social movements, green communication, and influencing groups (e.g., family, surrounding people, etc.), about whether or not to implement green consumption behavior.

- *Perceived behavioral control of consumers towards green consumption behavior*: consumer's perception and self-

awareness about the resources, barriers or facilitators to help them conduct green consumption behavior, such as their own availability of time, of money, of access to information, of the availability of the product (for green purchasing behavior) or the tools to carry out acts of green using (saving, recycling, reusing, using green packaging and green waste treatment)

- *Product attributes*: price, quality, design, branding, eco-labels, green product availability and forms of distribution.

3. Construction of survey to assess consumer perception and behaviors towards green consumption

On the basis of a conceptual framework of influential factors in green consumption behavior developed above, the authors have conducted a sample survey questionnaire with the aim of testing the role of the factors in this model. A full process from the questionnaire design to its implementation includes five main steps: (1) Questionnaire development, (2) Trial and expert consulting, (3) Questionnaire adjustment (4) Pilot study and (5) Data Analysis

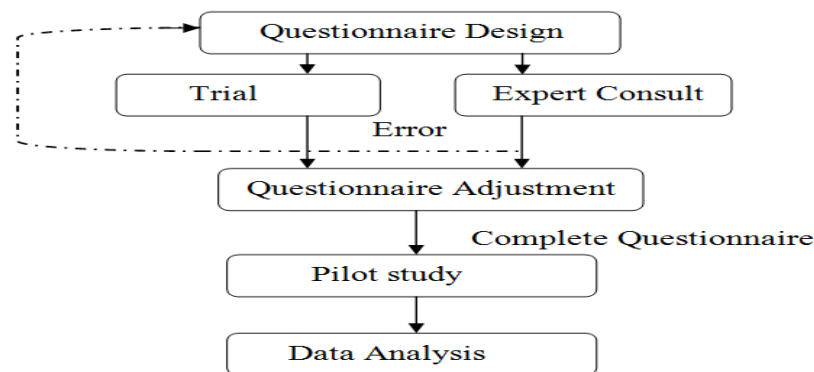


Figure 2: Questionnaire Design and Investigation Process.

These steps, including (1), (2) and (3), were repeated as many times as was necessary until the questionnaire was identified as completed

and could be used in the actual investigation. Step (4) and (5) are the investigative steps. Depending on the purpose of the organization

or individual conducting the survey, the choice of object of study, sample size, data processing and analysis software can vary. This article provides a specific description of the steps for completing the questionnaire to help market researchers understand the tool and to adjust the appropriate questions for research purposes by themselves.

(1) Questionnaire development

Measurements

The Likert scale is a measurement tool commonly used in many studies on cognitive behavior applied theory of planned behavior (Jillian et al, 2004). A Likert item is simply a statement that the respondent is asked to evaluate according to any kind of subjective or objective criteria; in general, the level of agreement or disagreement is measured. It is considered symmetric since there are equal amounts of positive and negative positions (Burns & Burns, 2008). Often a 5 – point Likert scale is used, although many psychometricians advocate using a 7 - or 9 - point scale. Recently, an empirical study found that a 5- or 7- point scale may produce slightly higher mean scores relative to the highest possible attainable score, compared to those produced from a 10-point scale, and this difference was statistically significant (Dawes, 2008). For these reasons, in this specific type of survey, a 5 - point scale is chosen.

In the questionnaire, two types of scales are used, namely: An Agreement Scale (1 = Strongly disagree, 2 = Disagree, 3 = Confused, 4 = Agree, 5 = Strongly agree); and a Frequency Scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). The Frequency Scale is used to measure the actual behavior, while the Agreement Scale is used to measure the factors that affect behavior.

In addition, the responses of consumers to their perception and awareness of green products, green consumption and environmental issues (e.g. climate change), as well as questions about price, purchase intention, are

recognized by choosing the most suitable answers.

Question design

The research team referred to the sample questions used for the theory of planned behavior in order to develop a questionnaire that ensures high consistency with the theory applied. Meanwhile, there are necessary adjustments in style, content and form to fit the object of the study, who in this case are Vietnamese consumers with their perception and behavior towards green consumption. The complete questionnaire is explained as follows.

1) Personal Information

Personal information is used not only to manage the profile of the respondents, but also to provide data for demographic factors. In the conceptual framework, the survey focused on four criteria: age, gender, education level and income. Through a literature review, these factors are identified as influential factors to the green consumption. The scale used to measure these criteria is based on relevant studies and democratic features in Vietnam.

2) Section 1: General knowledge about the environment, green consumption and green products

Based on the definitions of green consumption and green products given in the paper, this section aims to assess the consumers' understanding of green products, green consumption and awareness of the environment and climate change in general.

3) Section 2: Green purchase, green using behaviors and promoting behavior for green consumption

This is the key section of the questionnaire, with the purpose of understanding the intention, actual behavior and factors affecting the intention - the behavior of consumers towards green consumption. Based upon the conceptual framework, questions are logically arranged in the groups of elements measuring intentions and behavior (headings 1.1, 2.1. 3.1., 4.1, 5.1,

6.1, 7.1 & 8) and influential factors (headings 1.2, 2.2, 2.3, 3.2, 4.2, 5.2, 6.2 & 7.2), respectively. Because behaviors are grouped, factors associated are also divided accordingly, as follows:

- Group of 1.1 and 1.2: purchase intention and factors affecting the intention
- Group of 2.1, 2.2 and 2.3: the actual purchase behavior and the mediation of product attributes
- Group of 3.1 and 3.2: saving behavior and its influential factors.
- Group of 4.1 and 4.2: recycling behavior and its influential factors.
- Group of 5.1 and 5.2: reusing behavior and its influential factors.
- Group of 6.1 and 6.2: green packaging and influential factors.
- Group of 7.1 and 7.2: green waste treatment and influential factors.
- Group 8: Acts of propaganda about the green consumption

The influential factors are not considered as causes (do not ask why respondents behave but ask how they agree with the assumptions of influential factors in order to avoid rational or moral responses when making an answer). Questions measuring actual behavior (2.1, 3.1, 4.1, 5.1, 6.1, 7.1 & 8) are measured by the Frequency scale, while questions measuring influential factors (2.3, 3.2, 4.2, 5.2, 6.2 & 7.2) are measured by the Agreement scale, as described above.

Preface: Preface is a means to help the respondents grasp and understand the purpose of the questionnaire. As the first impression of the answerers, it plays an important role. The preface must ensure to provide information about the survey, the research team, the purpose of the questionnaire, the contribution of respondents to the study, and the commitment of the team on the use of the answers for intended purpose. The preface should be written

with caution to make respondents feel comfortable and open to answer questions.

Structure of the questionnaire: The questions are divided into groups. As a conventional survey, the personal information relating to age, gender, place of residence, and household income comes first. This information is not only used for the data analysis, but also as a means to guide the respondents to gradually approach the central questions.

Because the survey relates to green consumption behavior and green products, which are relatively new concepts, and are not widely available, the questionnaire cannot go directly to questions about green products and green consumption. The questionnaire, therefore, starts by asking whether the respondents have heard of green products and green consumption. Next, many multiple choice questions about definitions and understanding of green products and green consumption are asked, giving the respondents the chance to express their personal views. At the same time, two questions about environmental issues were also included to assess the consumer awareness of current environmental matters.

The last section is associated with actual behaviors and influential factors, with the seamless sequence of questions, in a logic process from the actual actions to factors affecting behaviors.

(2) Trial and expert consultation

After completing the preliminary design, the research team conducted the trial interviews in a number of shopping centers and residential areas to collect feedback from the respondents. From the responses of the trial interviews about the content, form and semantics of the question, the length of the questionnaire, comments have been incorporated to make adjustments accordingly. The principles in the selection of locations, objects, time and even the way to introduce and explain the questionnaire for respondents ensure the best results are drawn. Besides the trial interview, the research team

also consulted experts in related fields about the content and structure of the questionnaire, and how to present the questionnaire, to ensure both the basic requirements of a questionnaire and the specific objectives of the research. Necessary adjustments have been made carefully step by step.

(3) Questionnaire Adjustment

The questionnaire has been adjusted 14 times within more than 2 months of working continuously, combining the design, trial interviews and expert consultation in questionnaire design and in the field of green consumption. Because the framework consists of many elements, with the aim of measuring the current situation and determining the relationship between the variables in the model, there are many questions raised. At the same time, the survey associates with sensitive areas, i.e. perception and behavior, where the answer given in response may be not real but rational. Therefore, questions should be treated with great caution. Sensitive areas here are understood as very elusive psychological issues (attitude and perception), as well as environmental behavior highly related to ethics. As a result, respondents tend to select choices reflecting not themselves but to portray good images with good behavior and attitude. To avoid this bias, a number of questions are given in contrast to ideal behaviors, such as “fall asleep when the TV and lights are still working”, “Buy more products than the actual demanded quantity”, “Use plastic bags for each individual item, when buying many items”, etc. The scale for these questions need interpreting precisely, the higher frequency of those behaviors demonstrates more negative responses to green consumption.

4. Pre - test and results

After building the survey tool, the authors conducted a pilot test of consumers in Hanoi, Vietnam within one month from 1st to 30th

March, 2012, through direct interviews and online survey. The subjects of the pre-test were consumers who were no younger than 18 years old and who had been living in Hanoi for at least 6 months, could meet the requirement about ability to make their own purchase decisions, had access to up-to-date information about green products and green consumption and were familiar with the Hanoi market as well. A total of 221 completed questionnaires (including 156/ 200 paper questionnaires (yielding a response rate of 78%) and 65 online ones) were obtained and deemed sufficiently complete to be useable. The data were processed by SPSS 16.0 software. The result of the pretest survey was discussed by Vũ Anh Dũng et al. (2012).

5. Discussion

With the process elaborately built and tested by experts in the field of questionnaire design and research on green consumption, a useful tool (particularly the questionnaire) was developed for the initiative to learn and measure the cognitive - behavioral relationship or relationships of factors affecting consumer behavior, with the aim of helping government and businessmen successfully design green policy and make decisions.

However, there are two issues to keep in mind when using this questionnaire in the actual investigation of government or private businesses according to the characteristics of the organizations and their goals.

Firstly, the content and length of the questionnaire may be changed depending on the certain aspects that are the concern of the researchers (e.g., the influence of product attributes, or just the green consumer behavior). Government or the social - economic organizations may not often adjust the content of the questionnaire, because they care about green consumers' perceptions and behavior in general, from which the overall solution can be

found (the sample questionnaire in this paper is considered to be suitable to be used as a survey tool by authorities). Businesses may pay more attention to the product attributes or some particular influential factors such as communication and movement, in an effort to find out the most practical solutions in business to promote their brand image and sales. Thus, these enterprises can add further questions to those aspects. However, keeping the structural frame of the questionnaire is recommended for all research, because of the fact that the elements in the model developed have certain mutual impacts, and all can be the basis for stakeholders to imply appropriate policies and corresponding solutions.

Second, even if the questionnaire is completed and systematic, the actual process of investigation demands very specific and strict requirements to ensure that the results are reliable, making scientific and practical sense. In this stage, the selection of the correct sample size and object to study plays a crucial role.

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