

Factors Influencing Customers' Decision to Buy Green Product Design in Malaysia

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ABSTRACT

In the early 2000's green technology is a buzz word. However in a developing country like Malaysia, customers' acceptance of green products is still low due to the low number of environmentally friendly products acceptance compared to their non-green counterparts. Though green issues convince all human activities, few academic disciplines have integrated green issues into their literature. The growing social and regulatory concerns for the environment lead an increasing number of people to consider green issues as a major source of strategic change. Even though it is increased eco-awareness of Malaysian during the past few decades, there are some barriers to the diffusions of more ecologically oriented consumption and buying power styles. Therefore, Malaysian is increasingly recognizing the importance of green marketing concepts. Terms like "Green Marketing" appear frequently in the popular press. On the basis of benefit and cost analysis, the purpose of this study is to identify the factors influencing customers' decision in buying green product. This study argues that customers' intention to buy green products are determined by benefit-to-self, benefit to environment, comparative cost and attainable cost. A survey is based on sample of 360 customers and potential customers of green products in Melaka, Malaysia and Regression Analysis is used. The implication of this research to the design of green products is then discussed. Here the researcher will find out how customers are reacting after having a concept like green product.

Keywords: green product design, intention to buy, benefit, cost.

INTRODUCTION

Nowadays, the use of vast amounts of hazardous materials in the product design in fueling its global expansion of the rapidly changing product lines is significantly depleting natural resources. Some businesses have been quick to accept concepts like environmental management systems and waste minimization, and have integrated environmental issues into all organizational activities. Hence, green or environmental marketing, which is defined by Polonsky (1994) as all activities that are designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment, has become a strategic concern for the business organization. Customers' acceptance of environmentally friendly products is still low. In Malaysia, this conclusion can be drawn from the fact that the number of environmentally friendly products offered in the market is relatively low compared to their non-green counterparts.

The best way to overcome this problem is through the design of products which meets customers' expectation. Different customers will have different perception of the same product. Consequently, companies should understand how customers perceive environmentally friendly products. It is very important for a manufacturer to find out the benefits which customers need, want, or expect to get from a green product. This knowledge will be very useful in the design process of green product. There are two main factors which greatly weaken the positioning of environmentally friendly products in comparison to their competitors. These factors are benefit and price. Benefits of an environmentally friendly product such as its effect on health cannot be obtained or seen by customers immediately after consumption. It takes time until it becomes effective. Hence, such benefit is often referred to as intangible benefit. Moreover, many environmentally friendly products come with higher price tags than their non-green competitors due to the higher cost of raw materials and more complicated process involved. The combination of higher price and intangible benefits make the green products have inferior positioning than their competitors in customers' decision making process.

LITERATURE REVIEW

Green Product Design

According to Royal Society of Chemistry report in sustainable water: Chemical Science Priorities, green product design extends the principles of green chemistry to the design and use of products and their ultimate disposal. This would include the design of highly functional products that are efficacious in their intended use, that possess little or no toxicity to human health and the environment and would biodegrade rapidly to innocuous degradation products that do not persist in the environment. This is also one of the key principles of the European Registration, Evaluation, Authorization and Restriction of Chemical substances legislation (REACH) which seeks to minimize the impact of chemicals on humans and the environment along their whole life cycle.

Environmental factors should be considered early at design process. According to Jackson (1993), environmental issues should be noticed from the beginning of production and consumption process. Therefore, the risk of environmental damage could be avoided at the source. In addition, one of the principles of clean production is prevention, which means that environmental issues should be considered at the earliest stage of production. Furthermore, design stage is very important because it will determine the performance of the product at every stage of product lifecycle (Piasecki, 1995 in Chung and Tsai, 2007, pg.277). Chung and Tsai (2007) find in their study that green design activities influence the performance of product. A manufacturer with higher degree of green design activities will produce new products with better performance. Therefore, product design should be the first step when considering environmental issues in the production process as a whole.

There are some factors which can be considered by customers when buying green products. The important things that contribute and influenced is, environmental benefits. However, customers are rarely willing to sacrifice themselves only for the interests of environment (Ottman, 1998). This fact leads to the second factor which is considered by customers as the benefits for themselves (benefit-to-self). It is assumed that environmental benefit and benefit to self influences the green buying behavior. Green buying behavior is represented by the intention to buy because it can predict the green behavior (Chan and Yam, 1995; Li, 1997; Chan and Lau, 2000; Sothonsmai, 2001; Chandon *et al.*, 2005). The effort to increase customers' intention to buy green products in Indonesia is more relevant in recent condition due to the limited number of green customers.

The third and fourth factors which influence customers' decision in buying green products are related to cost. It has been mentioned that previous researchers found that green customers are cautious about a product's price. This factor can become a barrier to buy green products (Mainieri *et al.*, 1997; Shrum *et al.*, 1995). Unfortunately, the price of green products is generally higher than nongreen products (Ottman, 1998). In addition, the price of products will greatly influence the buying decision for consumers in developing countries due to their economic conditions. Cost can be differentiated into attainable cost and comparative cost. Basically, customers' perception of the price of a product is relative to a certain point of reference. While comparative cost reflects the customers' perception of the price of green products when compared to the benefit offered, it can be assumed that customers are more willing

While comparative cost reflects customers' perception on the price of green products compare to benefit offered. It is assumed that customers will be more willing to buy green products if the price is comparable with their benefit and avoided risk.

Intention to buy is defined as customers' possibility of wanting and planning to buy a green product in the future. The measurement of intention to buy green products is built by referring to the previous research conducted by Sothonsmai (2001) and Chan and Lau (2000). To increase the possibility of converting intention into behaviour, buying location is also observed (Ajzen and Fishbein, 1980).

In order to determine the drivers of value which are relevant in the context of green products, an analysis on the characteristics of green consumers is conducted. Former studies show that some of these characteristics are identified on green customers: careful buyers, information seekers, and price observers (Mainieri *et al.* 1997; Shrum *et al.* 1995). However, in terms of inconvenience, cost is a major barrier to green behavior (Laroche *et al.* 2001).

While Laroche *et al.* (2001) examine the attitude towards green products from two aspects, namely attitudes towards inconvenience and importance; they find that these two factors positively influence the willingness to pay for green products. Verhoef (2005) investigates the effect of price and quality on green buying behavior. The study shows that price significantly influences customers' choice and the frequency of green buying, whereas quality only influences choice. Other factors which also determine green behavior are the degree of environmental concern. Former studies show that

customers with higher degree of environmental concern also have higher degree of intention to conduct green behavior (Berger and Corbin, 1992; Roberts and Bacon, 1997; Minton and Rose, 1997; Lee and Holden, 1999; Straughan and Roberts, 1999). Therefore, customers' decision on buying green products is also determined by the contribution made by green products on the environment.

As stated earlier, environmental benefit is defined as the customers' perception of positive contributions made by green products on the environment. Benefit to self represents the customers' perception of the contribution made by green products on customers themselves, such as increasing health. The measurement items are built based on the definition of the construct [ref. to Ottman (1998); Sweeney and Soutar (2001) and Khalifa (2004)]. Each of these constructs is measured by using the four items. Comparative cost is defined as customers' perception of the price of green products when compared to the benefits offered. On the other hand, attainable cost is defined as customers' perception of the price of green products relative to customer's economic income. Measurement items for comparative and attainable cost are developed by referring to the measurement instruments developed by Roig *et al.* (2006) and Verhoef (2005).

The Green Consumer

The green consumers are the driving forces behind the green marketing process. It is they who drive consumer demand, which in turn encourages improvements in the environmental performance of many products and companies. Thus, for a marketer it is important to identify the types of green in developed country but country like Malaysia and its organization has found that one out of every six consumer is green, but their environmental commitments vary because of their different standards, expectation from producers, demand and buying power. It is thus not efficient to say that the green consumer is one who engages in green consumption, specifically, consumes in a more sustainable and socially responsible way. A consumer acquires bundle of wants and need and this is also true for the green consumer. A great deal of market research has been concerned with identifying the green consumer. A clear picture has not yet been established and it differs a lot between markets. But some generalizations about the green consumer can made on the basis of the research done so far.

The green consumer:

- Is inconsistent
- Is confused
- Is generally a woman
- Is adult who are likely to be more concerned about the environment
- Is sophisticated in wants and needs (Peattie (1992),p.118)

RESEARCH METHODOLOGY & MODEL DEVELOPMENT (PROPOSED RESEARCH MODEL)

For the methodology used in this study mostly refers to Churchill (1979), which consists of several steps. At the beginning, a literature review is conducted to find out characteristics of the customers of green products; as well as factors which are usually considered by customers in the green buying decision. From this review, it can be concluded that customers are generally willing to buy a product when they perceive that the benefit offered is higher than the cost; relative to the product's substitution (Gupta and Lehman, 2005). The comparison between benefits and costs of a product is referred to as value (Urban, 1993). In the same fashion, Cooper (2001) finds that products with higher value are likely to be more successful in the market compared to products with less value. A longitudinal study finds that there is a significant relationship between customers' perception on value of a product and total market share (Sinha and DeSarbo, 1998).

The hypothesis of this research are as below:

H1: *Customers' perceptions of green-product's environmental benefit increases intentions to buy green products*

H2: *Customers' perceptions of green-product's environmental benefit for self increases intentions to buy green products*

H3: *Customers' perceptions of green-product's comparative cost increases intentions to buy green products*

H4: *Customers' perceptions of green-product's attainable cost increases intentions to buy green products*

The survey is then distributed to customers and potential customers of green products. There are many different type shopping mall are chosen as the location for data collection, assuming that visitors to these places do not have economical and physical buying problems. Three hundred and eighty one of the 400 data gathered are valid. The data are collected during the period of February and March 2011.

This study assumes that benefits to environment, benefits to self, comparative cost and attainable cost are crucial factors for customers and are then used as independent variables. The intention to buy green products is used as a dependent variable because the aim of this research is to identify factors which influence customers' decision making. Besides, former researches show that intention predicts behavior (Chandon et al, 2005; Soothonsmai, 2001, Chan and Yam, 1995; Li, 1997; Chan and Lau, 2000). The research model can be seen in Fig. 1. A measurement instrument is then developed to verify the proposed model. At the preliminary stage, the domain of each construct is established (Churchill, 1979). The definition of each construct is developed based on the literature.

LIMITATIONS AND FURTHER STUDIES

Actually this research has not finished yet since the data still in progress. So, what the important things here is how other researcher find out the several factors which contribute and support this research indirectly or directly. Since that, this research also has some limitations. First of all, this research does not take the preference differences among groups of customers based on demographical or psychological characteristics into account. As former researchers Roberts (1996), Straughan and Roberts (1999), Laroche *et al.*, (2001) and Casey and Scott (2006) conclude, there are significant differences between women and men in terms of intention to buy green products. Moreover, it is assumed that intention to buy is an indication of buying behaviour. Previous studies have shown a correlation between intentions and actions (Li, 1997; Chan and Lau, 2000; Chandon *et al.*, 2005). Nevertheless, there is still a possibility that intentions are not necessarily followed by actions; especially in the context of self-reported data.

Thus, it is suggested that future research also needs to measure the actual buying behavior of respondents. Finally, this research does not investigate the weight of each factor of green products. Further research needs to be done using specific objects and ask respondents to rate those factors. It needs to be noted that although the research model remains the same, different products might result in different weight.

CONCLUSION

Since this paper investigates the customers' perception of the value green products based on the intangible benefits and cost. These two factors are selected in order to address the main weaknesses of green products as describes earlier. Green product design is a different marketing concept and it is growing in importance in Malaysia. These issues will affect the environment hazardous like chemical industry, petroleum-refining industry, garments and packaging waste management if no action will be taken. Now, it is the right time to protect all the environment friendly works which can keep environment fresh for the next generation and similarly Malaysia can able to establish green marketing issues in the customer and organization mind so that green product design can enhance marketability, improve product performance, protect environment hazard, protect health hazard, quality deterioration and represent a powerful new source of innovation. In this way, the market can be able to increase good realization in customer mind.

Regarding on this research, designers should play an important role to consider the price of final product. Although the target customers state that they are concerned about the environmental benefits of green products, they also consider cost as a significant factor which determines their buying decision. On the next stage of design process; environmental benefits, attainable cost and comparative cost can be used as product attributes in developing the House of Quality. Further efforts needs to be made in translating customer attributes into detailed product specifications. Certainly, different types of green products will have different product specifications.

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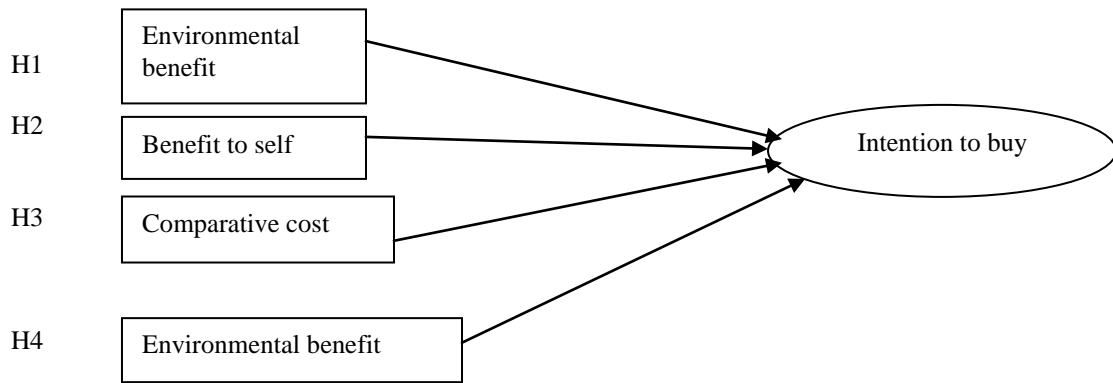


FIGURE 1: Causal Path of Perceived Benefit and Cost on Intention to Buy