

Effect of green marketing on consumer purchase behavior

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ABSTRACT

In recent years, concern about the environment has been highlighted in many areas of life. Our limited resources are damaged, the future of human life disturbs this planet, thus leaders and thinkers have to create a solution. The influence of green marketing tools have been analysed in this study, namely the eco-label, eco-brand and environmental advertisement. The sampling used was available cluster sampling. Tehran city is divided into four parts, North, South, East and West. The western and northern areas of the city were selected and we distributed our questionnaire. The sample size was 384 people. Formulae and data was analysed using the Spearman correlation test and multiple regression analysis. The results show that environmental advertisement had the most significant effect on consumer purchasing behavior and eco-brand had the least effect.

Keywords: green marketing, environmental advertisement, eco-brand, eco-labeling, consumer purchase behavior

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INTRODUCTION

Over the past few decades, concern about the environment has become not only a significant public issue, but also a crucial topic in academic research. A sharp rise in environmentalism has emerged in the US and Western Europe. A positive change within consumer behavior towards environmentally related products can be seen due to the increased level of environmental awareness since the 1970s.¹ This change contributed to the start of the green revolution to prevent further damage to the environment. Indeed green marketing is a type of marketing that aims to reduce our affects on the environment by design, produce, packaging, labeling and consumption.²

Green marketing has concentrated on product (packaging and labeling) and incentive strategies in recent years. Assessing universal incentives to be green are necessary because it can show us how green marketing in all organizational activities can be carried out.²

Companies apply a strategic approach to environmental and entrepreneurial parts of industry to create the possibility of modifying consumer satisfaction through new and green products. This can also create a competitive advantage and reduces the pressure of competition.²

Purchasing behavior generally consists of five parts: the discovery of the need to seek solutions, evaluate solutions, decision to purchase and post-purchase behavior. Factors such as socio-cultural, psychological-individual, marketing and mixed situations, all influence consumer purchasing behavior.

Organizations and consumers should have a responsibility towards environmental issues and by the purchasing of green products they participate in this process. Although the reasons to participate in green activities and their commitment to the environment is different, the green consumer has a vital role in helping the environment.³ Generally, these consumers will not buy products that endanger human health, have associated risk during the production process, cause any serious damage to the environment, inflict serious damage to the environment during the production process, produce excess waste, are involved in the extraction of raw materials, damage endangered plant and animal species and/or a natural resource.⁴

Applying these policies plays an essential role in switching consumer purchasing behavior to buy environmentally friendly products, therefore, reducing the negative impact of synthetic products on the environment, however the findings often contradict each other. Therefore, research may only be relevant in certain cultural, time and geographical contexts.²

Certain studies have investigated the change in consumer's behavior, where those who worry about the environment will indicate their concerns through different behaviors, such as checking the products they will purchase to ensure they are buying ethically.⁵

In this study the effects of green marketing tools on consumer purchasing behavior were examined.

A REVIEW OF THE RESEARCH LITERATURE

Many investigations have looked into how we can help to protect the environment. There is a significant relationship between demographic characteristics, cognitive psychology, personality and attitude and activities that help to protect the environment.⁶

Pickett et al.,⁷ evaluated the effect of these factors, the results showed that the influence of psychological and social factors are more powerful than demographic factors on consumer's green behavior. In addition, they believe that by affecting these factors, people show different behavior, and therefore have a positive effect on developing marketing strategies.⁷

Moreover, another study assessed environmental knowledge as one of the effective variables on green consumer behavior. Creating concern in relation to environmental issues is the role of 'knowledge' in green marketing. Knowledge and awareness about the environment are directly related to a person's intended purchasing. People who have more knowledge than others in this field, who show concern for the environment, could process the information related to environmentally friendly products.⁸

Marketing experts need to focus on environmental knowledge in organizations, and advertise their products in order to achieve their objectives, such as consumer purchase behavior.⁹

1. GREEN MARKETING

Marketing means 'working in the market', with the aim that completing transactions will satisfy the needs and desires of a human being. Green marketing is currently not achieving its potential for improving the quality of life of consumers, whilst improving the natural ecosystem.¹⁰

Green marketing has substantial coverage within the media. It seems that many personal and industrial consumers are more conscious about the environment and increasingly interested in its preservation.²

The American Marketing Association workshop attempted to bring together academics, practitioners, and public policy makers to examine marketing's impact on the natural environment. At this workshop ecological marketing was defined as: the study of the positive and negative aspects of marketing activities on pollution, energy depletion and non-energy resource depletion.¹¹

Green marketing has passed different stages during the course of its development. Each stage has specific characteristics and changing situational and environmental needs.¹²

Green marketing has passed three eras, the first, ecological green marketing, lasted from the 1960s into the early 1970s. Characteristics of this era concentrated on external problems of the environment, such as air pollution.¹³ The second era, green environmental marketing, this process began in the late 80s and it consisted of new concepts, such as clean technology, sustainability, consumer and competitive advantage emerged. The significant difference between the first and second eras was that the first era was focused on effective industries on the environment, but the second era, environmental marketing, included all services and manufacturing methods, such as tourism.¹³

The third era is sustainable green marketing. With increasing demands and expectations of people and strict rules of state the second era was not able to continue. Sustainable development, in the area of marketing science, made a great impact on the economy.¹²

The Toyota factory created "environmental technology". Their perspective was shaped, not only by laws, but also the pressure to form a unified product line, for example to produce the next generation of cars as electric – combustion hybrids. The results show that Toyota is now the leader in this segment of the market, and this section has grown significantly in recent years.

The modern environmental movement in America began in the late 1960's and was recognized as being a leader in the environmental statement. At that time European countries reconstructed the economic devastation caused by the Second World War.¹⁴

The ecological movement in America started during the 1960s and increased in public awareness and concern, in the context of this the Environmental Quality Council (CEQ) and Environmental Protection Agency (EPA) were created in the 1970s, and several environmental laws were passed during the 1970s.¹⁵ In addition, ethical consumers noted that 5% of the world's population uses 30% of the world resources. Over the years, environmental regulations were slowly integrated. Finally, concern for the environment began in West Germany, the Netherlands and Scandinavia, however, this is a relatively recent development for many countries.¹⁶

In the late 1970s, the "Green party" was created in Germany. This organization included elected members of political offices in Europe, as a result it was the main drive behind forming the "Green Revolution". Nowadays, the environment is the major issue in many European countries (e.g. Britain and Italy) that before was faced with some reluctance from the population.²

According to Ottman^{17,18} and Peattie¹⁹ demand and attitudes for green products is likely to be uneven across market segments and cultures. Consequently, research on the effect of green marketing tools on purchase behavior in emerging Asian markets is considered to be well-timed.²

According to Chan,²⁰ the reasons for the lack of attention are the inadequate green products and services in the market. Although this argument is somewhat true in the consumer society, in Iran, green food products, light bulbs or CFC-free spray are frequently found. The first step, 'buying' them, shows the consumer interest in environmental issues, and the next step has reflected this approach in the buying behavior.

Hence, it can be said that the purchasing behavior of consumers influenced varies and the intensity of the effect is can be different. For instance, in a recession, the economic issues are so important that other issues, such as the environment, are ignored.²¹

2. GREEN MARKETING TOOLS

Green marketing tools, such as eco-label, eco-brand and environmental advertisement, will make perception easier and increase awareness of green products attributes and characteristics. The consequence of this will guide consumers into purchasing environmentally friendly products. Applying these policy tools plays an essential role in altering consumer purchasing behavior to buy environmental friendly products, therefore, reducing the negative impact of synthetic products on the environment.²

According to Hartmann and Ibáñez²² green marketing generally focuses on the efficiency of cognitive persuasion strategies, and believes that the consumer's high involvement concerning environmental issues is an affect of growing environmental knowledge.

Stanton and Futrell²³ define green or environmental marketing as 'actions intended to replace current needs and wants with minimal harmful impact on our environment'.

Ginsberg and Bloom²⁴ claim that there is no single marketing tool that would be appropriate for all firms. Rather, strategies should be different based on different markets and the degree of consumer concern on the environment.

Studying the determinants of consumers' green purchase behavior would be beneficial for green marketers, although our focus is on the influence of green marketing tools on purchase behavior. The majority of these studies have been conducted in industrialized countries.^{20,25-27}

In the following we will review each of the green marketing tools.

2.1. Eco-labeling

One of the significant green marketing tools used is the eco-label on environmentally friendly products. Environmental labels are used by marketing to promote the identification of green products.²⁸

Labels consist of a range of small pieces of paper, up to very complex diagrams that are included as a part of the goods packaging. Labels can contain simply the brand products or a range of varied information. In some cases, the seller may want a simple 'Label', but law obliges them to provide additional information.²⁹

Sammer and Wüstenhagen³⁰, identify the eco-label as an important tool to allocated asymmetry information between sellers and buyers. They also state that labels are a signal to accomplish two main functions for consumers: an information function that informs them about intangible product characteristics, such as product quality and a value function, which provides a value in themselves (e.g. prestige).

Rex and Baumann³¹ define eco-labels as a tool for consumers to facilitate making a decision to select environmentally-friendly products, it also enables them to know how products are made.

Many of the studies on eco-labels look for ways to make them effective in consumers' purchase behavior and environmentally safe products.^{28,30} Sometimes consumer distrust of eco-labels can be expressed through their ignorance in identifying eco-labels and the regulations that companies follow to place authorized labels on their products.³²

Nik Abdul Rashid's³³ study, has shown that awareness of eco-label has a positive effect between the knowledge of a green product and consumer's intention to purchase. However, other studies indicate that although the functions of labels are recognized by some consumers, this does not automatically lead them to green purchasing decisions.³⁴

Few studies have investigated the link between environmental labeling and a consumer's intention and behavior to purchase environmentally friendly products.^{33,35,36} In addition,³⁵ explains that little is understood about the effect of label information on a consumer's intention to purchase environmental friendly products.

Kuhn³⁷ illustrates that these situations will emerge from growth in pollution from enlarging the market as a result of achieving greater market share through manufactured environmental friendly products.

2.2. Eco-brand

The American Marketing Association define a brand as "a name, term, sign, symbol, or design, or the combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of a competitor." This definition can be generalized for the eco-brand as well. Eco-brand is a name, symbol or design of products that are harmless to the environment. Utilizing eco-brand features can help consumers to differentiate them in some way from other non-green products.²⁾

According to a prior study by Rahbar and Abdul Wahid³⁸, Malaysian consumers consider glass based, household cleaning, aerosols, pesticides and plastics as non-green product categories, with a high level of impact on the environment. Hence, it can be predicted that consumers will respond positively to products with environmental features, known as 'eco-branded' products. Earlier research in western countries supports the idea that consumers in the USA and Germany take positive action to eco-branded products, such as the Body Shop and green energy.³⁹

The significant factor motivating consumers to change actual purchase behavior to buy eco-friendly products is emotional brand benefits.⁴⁰ Hartmann et al.⁴⁰ list different types of emotional brand benefits as: a feeling of well-being, auto-expression benefits through the socially visible consumption and nature-related benefits.

Knowing about consumers' brand purchase decisions are very important for marketers and market researchers. This effect is known as brand equity. Brand equity can be defined as data that has different effects on consumer response to the marketing. Green brands that generally focus on the environment should be used to highlight the status of green products, in a similar way to non-green products.⁴¹

2.3. Environmental advertisement

In the wake of increasing consumer concern about the environment, in the late 1980s and early 1990s, green marketing activities progressed, especially in the field of environmental advertising.⁴²

In parallel with improving green movements worldwide and with increasing public attention to environmental problems, most organizations have chosen environmental advertisements through the media or newspapers, as a method of introducing their products to environmentally responsible consumers. The objective of green advertisements was influencing consumers' purchase behavior by encouraging them to buy products that do not harm the environment and direct their attention to the positive consequences of their purchase behavior.²

Davis⁴³ describes that environmental advertising by corporations usually contains three elements. First, the advertisement begins with a statement of corporate concern for the environment. Secondly, the advertisement describes the way the corporation has changed its procedures in order to demonstrate its concern and dedication to improving the environment. Thirdly, the advertisement describes specific environmental actions in which the corporation is involved, and/or results for which the corporation takes credit.

According to Baldwin,⁴⁴ environmental advertisements help to form a consumer's values and translate these values into the purchase of green products.²

As stated by Chase and Smith,⁴⁵ 'Environmental messages in advertisements and product labeling was found to "sometimes" influence the purchasing decisions of 70% of respondents.'²

3. CONSUMER PURCHASE BEHAVIOR

Comprehending this point is of high significance, that consumers can affect the environment as the environment itself can influence consumers. Therefore, changes in the cost of pattern/model or the saving of consumers can affect the economy.⁴⁶

Consumer purchasing behavior is defined as: final consumer behavior during the purchase. There are four types of purchase behavior: Complex purchase behavior, those purchasing behaviors that seek variety, purchasing behavior that seeks to reduce tensions after purchase and normal purchasing behavior.²⁹

Numerous estimations indicate that consumers take the environment seriously, but generally nothing is seen or observed in their acts, for example, in purchasing the environmentally-friendly products.⁴⁷

Consumer behavior perception and "knowing customers" is not so simple. Sometimes customers express their needs and desires, but do so in different ways. They may be unaware of their inner motivations or react to the affecting factors and at the last moment will change their opinion. Nevertheless, members of marketing should survey their customer needs, their receiving subjective, their buying and purchasing behavior.⁴⁸

Green marketing activities are increasing in many countries, and these activities have had an important influence on increasing consumer knowledge and in shifting consumers into purchasing green products.⁴⁹ The 'greenness' can be due to outer or inner pressure.⁵⁰

Thus, in this study we have a main hypothesis and three sub-hypotheses that are as follows:

The main hypothesis: A significant and positive relationship exists between green marketing tools and customer's purchase behavior.

Sub-H1: A significant and positive relationship exists between eco-label and customer's purchase behavior.

Sub-H2: A significant and positive relationship exists between eco-brand and customer's purchase behavior.

Sub-H3: A significant and positive relationship exists between environmental advertisement and customer's purchase behavior.

METHOD

Our research study sought to examine the impact of green marketing tools on consumer purchasing behavior, by using analytical model investigation, a questionnaire and regression analysis. This is an applied research, we aim to solve existing problems within organizations. The study is also commercial and the results aim to improve the process of providing a product or a particular method of product.

The number of samples is obtained as follows:

$$n = \frac{z^2 \cdot 1 - \alpha / 2 \times p \times q}{e^2} = \frac{(1.96)^2 (0.5 \times 0.5)}{(0.05)^2} = 384$$

- z = Standardized value corresponding to the confidence level
- p = Estimating observed attribute variable in the community
- q = Estimation of different objects that are not observed
- e = Allowable error in the measurement range of observations

The society sampling in access includes the information aggregation of a society members that is simply accessible for achieving its information (Sekaran, translated by Saebi and Shirazi, 2012).

The method of sampling is cluster sampling. Tehran is divided into four areas, North, South, East and West, and we chose the northern and western areas. The questionnaires were distributed in chain stores in these areas. Minimum specimen volume is 384 people, at 95% reliability.

The data was collected using a questionnaire. These were collected from customers in chain stores in the Northern and Western parts of Tehran. We use closed questions with five options on a Likert scale. The responses range from, strongly disagree to strongly agree, and were set so as to help individuals quickly select one option. Thus, researchers can easily extract and analyse the information. There are two variables in this study. Each of the hypotheses listed factors that are considered as independent variables (green marketing tools). Consumer purchasing behavior is chosen as the dependent variable, see table 1. All these variables were used in the formulation of the questionnaire.

Table 1. Summary of questionnaire, showing the balance of questions related to topic.

	Number of questions	References
Variables Independent variables: (green marketing tools)		
1- Eco labeling	6	Rahbar and Abdul Wahid ²
2- Eco-brand	6	Rahbar and Abdul Wahid ²
3- Environmental advertisement	4	Rahbar and Abdul Wahid ²
Dependent variable:		
Customer purchasing behavior	4	Rahbar and Abdul Wahid ²

If the questions related to the measuring tools, are the representative of attributes and particular skills that aim to measure them, the test has reliability for content.⁵¹

The questionnaire is composed of five sections. The first part focused on the demographic characteristics of respondents. Perception towards environmental advertising was measured in the second part of the questionnaire, following the Chan²⁰ study. Four items, measuring the perceived impact of environmental advertisement on consumer's actual purchasing behavior, were used on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

The third part measures perception of eco-label of green marketing tools as a guide to consumers to for recognizing environmentally-friendly products. It was adapted from Nik Abdul Rashid,⁵² the original study consisted of three components to evaluate consumer's cognitive behavior towards the eco-label. The three components are: awareness, knowledge and trust.

The fourth part of the questionnaire was designed to measure the impact of eco-brand on consumer purchase behavior. The last part of the questionnaire includes purchase behavior as the dependant variable. In this study, the variable is measured by the level of the priority given when respondents decide on their actual product purchase of green products with ecological features, versus non-green products.

The display of both group A and group B products, were followed by related statements on consumer purchase behavior. The researchers have closely followed Nik Abdul Rashid's method, but the two groups of products were created following Yam-Tang and Chan's study⁵³ and classification of environmentally sensitive products. Statistical techniques were used to process the data included, namely Spearman correlation coefficients and multiple regression analysis.

Following data collection and getting a sufficient response rate, the Cronbach's alpha coefficients for each tool was computed. All values indicated the reliability of the instruments. There were two control questions in the eco-brand and eco-label, but in final analysis these were excluded.

In this study, according to similar questions, each variable was designed. Moreover, experts regarding questionnaire, advised on appropriate recommendations.

RESULTS

Generally, it is not possible that one method always outperforms all other methods in every situation. This usually depends on the characteristics of the training patterns and unfortunately it is difficult to know in advance exactly which technique or algorithm is best for the problem at hand.⁵⁴

Descriptive statistics examined demographic variables are presented in Table 2.

Table 2. Descriptive statistics of the variables.

	Eco-labeling	Eco-brand	Environmental advertisement	Customer purchasing behavior
Average	13/05	11/58	14/57	14/53
Middle	14	12	16	16
Mode	16	10	16	16
Variance	17/11	12/5	16/91	19/038
Standard deviation criterion	4/13	3/53	4/11	4/36
First quarter	10	9	13	12
Second quartile	14	12	16	16
Third quartile	16	14	17	18
Domain	16	16	16	16
Minimum Limit	4	4	4	4
Maximum Limit	20	20	20	20
Skewness	0/222	- 0/036	- 0/932	- 0/735
The traction test	0/661	- 0/541	00/0980	- 00/351

Multivariate regression analysis, see table 3, indicates that the green marketing tools as variables, predict the amounts of variance in purchasing behavior. Standardized beta values for each variable are presented in Table 3, and the importance of each predictor variable has been interpreted.

Table 3. Green marketing tools: regression results on consumer purchasing behavior.

Independent variable	Standardized regression coefficients	T level	Significance level
Constant	0/848	n/a	n/a
Environmental advertisement	0/6	14/98	0/000
Eco-labeling	0/24	548/8	0/000
Eco-brand	0/077	2/33	0/02

CONCLUSION

Correlation test results show that the correlation coefficient values predicted by the model, green marketing tools is equal to 0/814. The square of the correlation coefficient is equal to 0/663. This suggests that green marketing tools predicted 66/3% of the variance change in customer purchasing behavior. The results of the multivariate regression model revealed that the environmental advertisement has the largest share in predicting purchasing behavior (Beta:0/6). The eco-labeling variable is next (Beta:0/24), and eco-brand shows the least impact on forecasting purchasing behavior.

The first hypothesis examined the relationship between green marketing tools and customer purchasing behavior, and shows that environmental advertising has the largest effect on purchasing

behavior and eco-brand the least impact. Recommendations offered in this field should continue to inform the public on environmental matters, for example, how to keep it safe, and provide a continued awareness of products that do less harm to the environment.

This is a new phenomenon in our country, which is required for training, information, building culture and new technologies. We need public officials, people and producers to assist in this area, to help each other move towards a healthy production and cleaner future. In addition, environmental products should come with more advertising, increased variety and lower prices so to be fully appreciated.

The second hypothesis, examined the relationship between eco-label and customer purchase behavior. The conclusion is that we must use trained graphic artists that specialize in this area to design better eco-labels. With the increased awareness on eco-labels, it would help in promoting green product consumption among consumers. However, government should monitor the credibility and trustworthiness of messages in eco-labels. Government should endeavor to inform citizens about the meaning and availability of the new eco-labels and eco-brands, and the benefits of using eco-labeled and eco-branded products on environment.⁵⁵

The third hypothesis examined the relationship that exists between eco-brand and customer purchase behavior. Eco-brand is a new topic and has an impact on purchasing behavior. More investigations into the 'eco-brand' are needed. Information and articles on this topic are scarce, and it is also one of the limitations of this research. We hope that other researchers will investigate this area in the future.

The fourth hypothesis, examined the relationship that exists between environmental advertisement and customer purchase behavior. It has been shown that advertising has the greatest effect on consumer purchasing behavior, as a result we can utilize this opportunity to increase familiarity with environmental products today.

One of the factors contributing to the failure of applying environmental advertisements to enhance purchase behavior is due to the low credibility of green advertisements among consumers.⁵⁶

Whitson and Henry³⁶ note that only a few studies (eg. Nik Abdul Rashid²⁸; D'Souza et al.³⁵; D'Souza⁵²) have been done on consumer purchase behavior and environmental labeling.

Not all consumers are strongly influenced by green marketing. Thus, there is a need to identify and concentrate promotion of goods on those market targets that are environmentally concerned. These segments tend to be younger and more affluent members of the population.⁵⁷

SUGGESTIONS

There are some recommendations for future studies in this area. First, other green marketing tools can be examined. Any discussion of gender differences can also be considered. The confidence of the eco-brand and eco-label can be worked on. The novelty of this study is the 'feeling' towards the health benefits of a brand. People buy products that are less damaging to the environment so that they feel better.

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