

Investigation of the Influence of Green Strategies on Consumers' Responses

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ABSTRACT

Development of technology and population growth have influenced environment greatly so that environment will be annihilated in the long run if the present trend continues. Global warming is the result of overuse of energy, air pollution, ozone layer thinness and greenhouse effect. Felling trees, production of industrial and non-industrial waste material have adverse impacts on the earth and this necessitates a revision of environment-friendly approaches. The present research aims to evaluate the impact of green strategies on consumers' respondents. Statistical population of the research included all students of Qazvin Islamic Azad University. Data were collected by questionnaires. Data analysis was conducted by means of one-way variance analysis. Results showed that all five hypotheses were rejected.

KEYWORDS: Green marketing, green consumer, green product and green strategy

INTRODUCTION

Today, as science and technology develop and public knowledge level has been improved in different nations, many people want environment to be protected and welcome establishment of organizations which protect environment. Many people seek products and technologies which are environment-friendly and do not endanger the earth. On the other hand, paying attention to environmental issues has been long considered as a social responsibility for organizations and many organizations try to fulfill this responsibility and reach competitive advantage by adopting such strategies. Recent interviews with 750 managing directors all over the world show that 93% of them think application of environment-protecting programs in their businesses may contribute to their future survival (UN Global Compact, 2010). Protection of environment is now a slogan for companies which seek competitive advantage in the world. Many companies believe that application of green strategies and programs to their business may be very helpful. These strategies and programs vary from production of new green product, recovered product to application of greener and safer processes. Although green strategies are innumerable, three strategies which are more general than others are mentioned below:

1. New green product strategy: in this strategy, a company can produce an innovative and new environment-friendly product or add new green capabilities to the present products. Consumers will perceive this kind of product as a new green product.
2. Recycled product strategy: the second strategic selection for companies is production of a product which is recyclable and can be reused. This approach needs a strong logistic system which requires also consumers' involvement and consumers had better consider these products as different from new green products.
3. Green processes strategy: the third strategy which is used for development of green processes can be started from daily corporate activities and be developed. These methods may include reduction in water consumption, reduce harmful gases dissemination, reduce industrial waste material, and reduce energy consumption and acid rains.

Furthermore, these strategies can help respond to consumers which are interested in protection of environment and use green products (Borin *et al.*, 2013).

The main advantages of adoption of the above strategies are as follows:

- Fulfillment of social responsibility for environment
- Introduction of brand as an environment-friendly brand
- Creation of a powerful mental image in consumers who are more interested in environment protection.
- Acquisition of competitive advantage

THEORETICAL LITERATURE

Green marketing

Green marketing refers to product or sales process based upon their environmental advantages. Such products or services may be environment-friendly or may be packaged or produced in an environment-friendly manner. Green marketing assumes that potential consumers consider greenness of a product or service as its advantage and consider it in their decision-makings. Green marketing may also believe, to some extent, that consumers tend to pay more for green products than ordinary products. Of course, this assumption has not been verified firmly (Ward, 2012). "green marketing" is a marketing strategy which helps marketers with reaching this target. This kind of marketing produces environmental advantages and supports environmental worries of customers. "green marketing" includes green products and also green companies. In addition to green marketing, phrases like "environmental marketing" and "stable marketing" also describe relationship between marketing and environment (Prakash, 2002). The present era is full of unpredictable developments and companies are confronted with issues like unclear borders of markets, segmentation of markets, short product life cycles, rapid changes in customers' purchase models and so on (Rahnama *et al.*, 2012). Green marketing was introduced in 60s and was followed by many environmental discussions. As political and social pressures increased, companies stepped beyond slogans and tried to find formulas for new packaging methods and product production methods and actually tried to get accompanied with environmental considerations. Green marketing mix includes green product, green price, green promotion and green distribution (place). Green product is the most important element in this marketing mix. Green products help protect environment and reduce or eliminate use of pollutants. Green price is a critical element in green marketing mix. Green products are usually more expensive than traditional products. Most green products have higher primary costs but their long-term prices are lower. Most consumers tend to pay higher prices only when they learn about added value of products. Green promotion means conveying real environmental information to consumers. Green distribution has two aspects: internal and external aspects. In internal aspect, employees and managers must feel comfortable in addition to observation of environmental issues. In external aspect, supply places should be selected so that they harm environment least.

Green product

A green product should introduce a significant reduction in environmental harms. Further, green products may require mixing recycle strategies, recycled contents, packaging reduction or lesser use of poisonous materials (D'souza *et al.*, 2007). In order to produce a green product, environmental impacts can be minimized by following ways:

1. Efficient use of raw materials:

The most important way for reducing environmental impacts is lesser use of raw materials and this can be embedded in designing as follows:

- Being long-lasting and need for infrequent repairs: such products are environmentally attractive because they do not usually need to be replaced and also they do not need to be fixed frequently and these two items cause less harms to environment.
- Specific design in order to use materials optimally: for example, ladder-shaped hanging stairs consumes less timber in building houses.
- Use of recyclable materials and organic materials: these kinds of materials have the potential to help us with storing resources and energy.

2. Supply of resources in a responsible manner:

In this method, supply chain and material supply are revised in order to include environmental activities and abide by social responsibility.

3. Protection of water and energy resources: use of vital energy instruments like use of solar cells which store energy and are used several times and recycle of consumed water in cooling processes and hygienic uses.
4. Processes with least negative impact on environment: reduction in waste material production, pollution and other negative impacts on the environment (GreenSpec Team, 2012).

Green consumer

For decades, a company's value depended on its properties, tangible assets, factories and other equipment. Today's companies, however, have found that their real values are in their potential purchasers' minds and that known that they should act in a way that they are accepted by customers (Heidarzadeh *et al.*, 2011). Many attempts have been made to define "green consumer" parallel to definition of environmental considerations in businesses (D'Souza *et al.*, 2007). Zinkham and Carlson (1995) believe that green consumers have worries beyond simple purchases and are worried also about production processes in conditions of shortage in consumed resources. Green consumers are pessimistic to marketing and tend to get involved in processes which are not

normal to other consumers (Zinkhan & Carlson, 1995). Ordinary consumers may make purchase decisions based on their feelings and buy a product without knowing about it (Abdolvand *et al.*, 2011). To put it in another way, green consumers are those who purchase recyclable products or environment-friendly products. Such individuals are usually called "tree huggers" because of their interest in environment (Suttle, 2013).

Green strategies

Companies can use three methods (strategies) for moving towards becoming green:

1. processes with added value (in corporate level)

Making added value processes green can be done via redesigning, elimination of some of the processes, adjustment of technology or introduction of new technology and all these items are aimed at reducing environmental impacts.

2. Managerial systems (in corporate levels)

Companies can apply managerial systems so that they provide conditions for reducing environmental impacts of processes which have added value.

3. Products (in product level)

The third strategy concerns products. This can be done via the following methods:

- Improvement: a product's life increases with improvement of its elements.
- Repair: a product's life is increased with basic repairs.
- Renew: production of new product based upon old products.
- Reuse: producing a product which can be used several times.
- Recycle: products which can be recycled and converted into raw material so that they can be used in producing other products.
- Reduction: as the product consumes less material or produces less recyclable waste material for environment, it yields more profits in comparison with its previous version or competitors (Prakash, 2002).

New green product and recyclable product

We investigate new green products and recycled products separately for two reasons. The difference between new green product and recycled product is very important for companies which want to enter green markets. Companies are able to choose from use of new and environment-friendly materials in their products (new green product) or use of recyclable materials for that product or other products. Moreover, they should make decisions on its way of conduction. Many products like mobile phone have been promoted both as new green product (LG solar model) and recycled model (for instance, Motorola cellphones). Now, we should ask this question: what way should manufacturers take? For some product categories, consumers may not understand product dissolution in recycled models. Therefore, consumers' perception may be positive due to green nature of product (Guagnano, 2001).

According to the above discussion, the following hypotheses are proposed:

H1: there is no significant difference between perceived quality of new green products, recycled products, products which have been produced by green processes and perceived quality of non-green ordinary products the producing company of which is not involved in green processes.

H2: there is no significant difference between tendency to buying new green products, recycled products, products which are produced by green processes, and tendency to purchase non-green ordinary product the producing company of which is not involved in green processes.

H3: there is no significant difference between tendencies to purchase new green product, recycled products, products which have been produced with green processes.

H4: there is no significant difference between price and green strategies.

H5: there is a significant relationship between brand and green strategies.

RESEARCH METHODOLOGY

The present research is an empirical (experimental) research with factorial design (2x2x4) and is a scenario-based study. In this research, a text was given to the respondents and they must have assumed them in the text's conditions. After studying the above text, the respondent imagined him or her in its conditions and answered to the questions. In this text, four types of strategies (new green product, recycled product, a product which had been produced by environment-friendly processes, and ordinary product), two levels of prices (high and low prices) and two levels of brands (well-known and unknown brands) of smart phone were combined in different conditions and 16 different states were designed for respondents. Research questionnaires were distributed among Qazvin Islamic Azad University students randomly. Considering the fact that we needed homogeneous samples in order to increase internal consistency of the questionnaire, we tried to pick sample members which had high level of homogeneity and common aspects. Furthermore, the research was conducted

by means of simple random sampling and data were collected by means of questionnaire (a questionnaire with standard international items) and library data were collected by taking notes.

DATA ANALYSIS

Descriptive statistics of tendency to purchase, perceived quality and environment-friendly behavior

Results of variables within the framework of descriptive tests like mean, standard deviation, skewedness and kurtosis are summarized in table 1. Sample size was 461 people and mean value of perceived quality was greater than quantitative average. This is while tendency to purchase shows a mean value smaller than average and there is little tendency to purchase and its mean value is equal to 2.9. Furthermore, mean value of environment-friendly behavior is equal to 3 and shows that individuals are environment-friendly. Further, standard deviation results show that scattering and standard deviation is high in tendency to purchase. This is while scattering is at minimum for the case of environment-friendly behavior. Because skewedness and kurtosis values are below 0.5, they have no impact on the results. Skewedness shows inclination of responses and kurtosis shows that responses are close to mean value.

Table 1: Descriptive statistics

		Environment-friendly behavior	Tendency to purchase	Perceived quality
number	valid	461	461	461
	Missing data	0	0	0
	mean	3.0841	2.9035	3.2798
	SD	.36599	.93478	.70644
	skewedness	-.273	-.205	-.321
	Skewedness error	.114	.114	.114
	kurtosis	.442	-.429	.217
	Kurtosis error	.227	.227	.227
	Minimum	1.75	1.00	1.00

Statistical tests

In order to test research hypotheses, since some hypotheses investigated main impacts of groups (independent variables) and some others investigated perceived quality, the author used one-way variance analysis. However, some preconditions must be analyzed before dealing with Fischer test for investigation of inter-group difference. According to Leven's test, we indicate that whether there is any difference between groups' variances or not. If Leven's test is rejected in (0.05) significance level, the hypothesis "there is equality of variances between groups" is verified. Considering Leven's test which has been rejected in 0.076 level for perceived quality variable, we can confirm equality of variances and conduct one-way variance analysis. According to reported results, brand and green strategies influence directly on perceived quality. In other words, there is a significant difference between brand and green strategies impacts on perceived quality because significance level of Fischer test is below (0.05). Further, there is significant difference between interactive impacts of green strategies and brand on perceived quality. There is also a significant difference between environment-friendly behaviors with respect to perceived quality. This is while direct influence of price on perceived quality is rejected because significance level (0.463) is more than (0.05). Further, interactive influence of price and green strategies on perceived quality is rejected because significance level is (0.05)⁴. Further, considering the significance level of Fischer's test for the dependent variable, it can be seen that there is difference between groups in some dependent variable. According to the reported results, direct impacts of brand and green strategies on tendency to purchase are significant. In other words, there is a significant difference between brand and green strategies groups directly with respect to tendency to purchase. This is because significance level of Fischer's test is below (0.05). Further, there is no significant difference with respect to mutual impacts of green strategies and brand on tendency to purchase. This is because significance level of brand mutual influence*green strategies is equal to 0.116. For the case of environment-friendly behavior with respect to tendency to purchase, there is a significant difference. This is while mutual impact of price*green strategies on tendency to purchase is rejected because its significance level is equal to 0.208 and below (0.05).

Results of inter-group impacts in weak environment-friendly conditions

Statistical output of inter-group impacts tests is the main result of multivariate analysis test. This output shows the results of significance or insignificance of total model and separate impacts of each independent variable on dependent variable. Considering the significance level of Fischer's test for the dependent variable, it can be seen that with respect to which variable there is difference. Results showed that significance level for main impact of green strategies on tendency to purchase is below (0.05) and this shows that there is a significant difference between green strategies groups. For the case of other factors like price, brand, mutual impact of

brand*green strategies, mutual impact of price*green strategies, there is no significant difference between them with respect to tendency to purchase variable because significance levels are above (0.05).

Results of inter-group impacts for the case of environment-friendly behavior

Furthermore, the statistical output for impacts tests includes the main results of multivariate analysis. Considering the significance level of Fischer's test for dependent variable, it can be seen that with respect to which variable there is a difference. Results showed that significance level for direct impact of green strategies is smaller than (0.05). this shows that there is significant difference between green strategies groups. Further, for the case of direct brand impact because significance level is 0.04 and this factor is verified in 0.95 certainty level and there is difference between brand groups with respect to tendency to purchase. Furthermore, mutual impact of price*green strategies in 0.021 significance level is 0.021 which is below (0.05) and difference between groups can be verified. This is while the direct impact of price and mutual impact of brand*green strategies do not indicate a significance difference with respect to tendency to purchase variable because significance level is above (0.05).

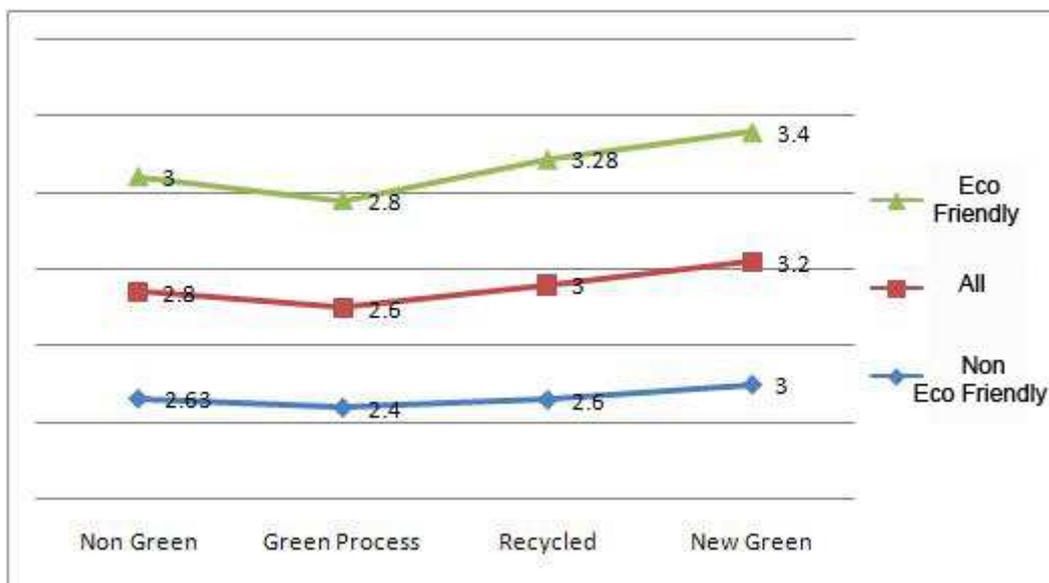


Figure 1: Tendency to purchase in four green strategies

Hypotheses analyses

First hypothesis

There is no significant difference between perceived quality of new green products, recycled products, products which have been produced by green processes and perceived quality of non-green ordinary products the producing company of which is not involved in green processes.

Results showed that because there is a significant difference between green strategies with respect to perceived quality in (0.05)significance level, and because mean values of ordinary products and green process products are different in (0.05)significance level, H0 cannot be rejected in 0.95 certainty level and the first hypothesis is rejected. A comparison of difference between men values reveals that the highest perceived quality concerns new green product and ordinary product and the lowest perceived quality concerns recycled product and green process product. on the other hand, green process strategy in unknown brand case has a very low perceived quality and this shows that a brand must be well-known to be valid. We propose companies to emphasize more on green product strategy.

Second hypothesis

There is no significant difference between tendency to buying new green products, recycled products, products which are produced by green processes, and tendency to purchase non-green ordinary product the producing company of which is not involved in green processes.

Results showed that direct impact of green strategies on tendency to purchase is significant in (0.05) significance level and considering the difference between new green products and ordinary products, the hypothesis is rejected. Since in new green product scenario, the mentioned green characteristics for smart phone are such that they add to its technical quality (for instance, the fact that battery is charged with lowest energy consumption level and stores charge for a long time) and lowest harm to environment, tendency to purchase is increased even in high prices and for unknown brands and this results in rejection of the second hypothesis. In

fact, it can be said that new green product strategy can influence tendency to purchase even in higher prices only when it adds to technical quality and products function characteristics tangibly and companies had better pay more attention to this dimension.

Third hypothesis

There is no significant difference between tendencies to purchase new green product, recycled products, products which have been produced with green processes.

Considering the results of the two groups (weak environment-friendly and strong environment-friendly), since there is difference between new green products, recycled products and ordinary products in tendency to purchase in (0.05) significance level, the third hypothesis is rejected. This verifies presence of significant difference among green strategies.

Fourth hypothesis

There is no significant difference between price and green strategies. This was verified by confirmation of mutual impact of price and green strategies on tendency to purchase. Therefore, the fourth hypothesis is rejected. This means mutual impact of price and green strategies on tendency to purchase is significant. This can be attributed to economic conditions because price is one of the main factors considered by customers in buying smart phone. In economic recession, if a product is more expensive than other products due to greenness, price definitely plays the main role and influences on consumer' purchase tendency and will dissuade customers from buying it. This will happen even when the consumer is environment-friendly. Therefore, mutual impact between price and brand is verified. Companies are proposed to be more sensitive to products pricing. Of course, this is different in different countries with different environmental issues and different economic conditions.

Fifth hypothesis

There is a significant mutual impact between brand and green strategies.

Considering the insignificance of mutual impact of brand and green strategies on tendency to purchase, the hypothesis cannot be verified in (0.05) level. This means mutual impact of brand and green strategy does not affect tendency to purchase. In the group with strong environment-friendly beliefs, the green features of the scenario resulted in tendency to purchase increase even in unknown brand conditions. Therefore, companies which are not well-known yet are proposed to apply different green strategies and target environment-friendly consumers and acquire competitive advantage.

CONCLUSION AND RECOMMENDATIONS

Contemporary organizations' social responsibility with respect to the environment is undeniable and application of green strategies is a very common way for fulfilling this responsibility and therefore achieving competitive advantage. Further, attempts to improve environmental knowledge of consumers will affect their perceived quality and tendency to purchase. Results of the present research showed that new green product strategy and recycled product strategy are considerably more useful than other strategies and this shows which way companies should select. If environmental knowledge of our people is increased, selection of green process products will cause competitive advantage for producers and help protect environment. It must be mentioned that development of similar studies can help increase environmental knowledge and improve green attitude among different social classes.

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