

## **PERCEPTUAL MAPPING OF GREEN CONSUMERS: AN INNOVATIVE MARKET SEGMENTATION STRATEGY**

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### **ABSTRACT**

There is growing interest among the consumers all over the world regarding protection of environment. Worldwide evidence indicates people are concerned about the environment and are changing their behavior. As a result of this, green marketing has emerged which speaks for growing market for sustainable and socially responsible products and services. The main purpose of this study was to weigh the environmental concerns and influences on consumers. The present study provided the emerging dimensions of green consumers and an opportunity for developing market segmentation strategy for the products offering of the marketers. The study further analyzed the gender and age effect of consumers on their revealed preferences for Green Marketing Issues.

Keywords: Green Consumer, Perceptual Mapping, Market Segmentation

### **INTRODUCTION**

There is growing interest among the consumers all over the world regarding protection of the environment. Worldwide evidence indicates people are concerned about the environment and are changing their behavior. Green marketing has emerged which speaks for growing market for sustainable and socially responsible products and services (Dash, S. K. 2010).

The modern world has led consumers to become increasingly concerned about the environment. Such concerns have begun to be displayed in their purchasing patterns, with consumers increasingly preferring to buy so-called environmentally friendly products. Marketing managers have in turn recognized the strategic importance of marketing in finding responses to the “environmental needs” of consumers. This may have influenced their consumption habits. The growing number of organizations entering the green product market also indicates the need for suitable segmentation and positioning strategies. Companies that develop new and improved products and services with environment inputs in mind may give themselves access to new markets, increase their profit sustainability, and enjoy a competitive advantage by finding new segment for their products over the companies which are not concerned for the environment.

Green marketing refers to the process of selling products and/or services based on their environmental benefits. Such a product or service may be environmentally friendly fashion or produce or package in an environmentally friendly way. Companies that develop new and improved products and services with environment inputs in mind give themselves access to new markets, increase their profit sustainability, and enjoy a competitive advantage over the companies which are not concerned for the environment. Adoption of green marketing depends on number of factors. There are basically five reasons for which a marketer should go for the adoption of green marketing (Dash, 2010). They are:

- Opportunities or competitive advantage
- Corporate social responsibilities (CSR)
- Government pressure
- Competitive pressure
- Cost or profit issues

There are at least five desirable benefits commonly associated with green products: efficiency and cost effectiveness; health and safety; performance; symbolism and status; and convenience. The implication is that marketers need to align green products' consumer value (such as money savings) to relevant consumer market segments (for example, cost-conscious consumers), (Ottman J, Stafford Edwin R. and Hartman Cathy L. 2006).

### **BRIEF LITERATURE REVIEW**

Green or environmentally friendly products are broadly defined as products that will not pollute the earth or deplete natural resources, and can be recycled or conserved (Shamdasani, P., Chon-Lin, G. & Richmond, D. 1993). As a result of the increasing number of green consumers, marketers are targeting the green segment of the population. Recycled paper and plastic goods and dolphin-safe tuna are examples of products positioned on the basis of environmental appeal (Banerjee, S., Gulas, C. & Iyer, E. 1995). Marketers are also incorporating the environment into many marketing activities, including product and package design (Bhat, V. 1993; Polonsky, M., Carlson, L., Grove, S. & Kangun, N. 1997) and pricing (Kapelianis, D. & Strachan, S. 1996). Marketers have even gone as far as to develop specific models for the development of green advertising and green marketing strategy (McDaniel and Rylander, 1993; Menon, A. & Menon, A. 1997). Nowadays, environmental consciousness is not only an ideology of activists, but also a matter of "market competition" (McCloskey, J. and Maddock, S. 1994), which influences consumer behaviour (Follows, S. & Jobber, D. 1999). D'Souza, C. (2004) claims that the green vision is a reality and needs to be more functionally understood to allow marketers to develop strategies aimed to meet the green consumers' needs.

Polonsky, M. J. (1994) defines green marketing as "all activities 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." Green marketing is "the holistic management process responsible for identifying and satisfying the requirements of customers and society, in a profitable and sustainable way" (Peattie, K. 1995). Green marketing can be viewed both as a type of marketing and a marketing philosophy (Jain, S, K, & Kaur, G. 2003a).

Business firms have also started engaging in activities that give publicity to such efforts with a view to generate bigger sales and revenues, and eventually higher profits for the organizations (Marsili 2000). Initiatives taken by business firms to establish their green credentials range from repositioning of existing products without changing product composition (Davis 1992) and to modifying existing products to be less environmentally harmful (Ottman 1992). The other initiatives were creating profitable new or improved products and packages that balance consumers' needs with environmental considerations (Ottman, J. 1993) and modifying the entire corporate culture to ensure that environmental issues are integrated into all operational aspects (McDaniel, S. & Rylander, D. 1993). The initiative also got mention of setting up new business firms that target green consumers and exclusively produce green products (CHOICE, 1990)

Meffert & Kirchgeorg (1994) observed in this connection rightly that various environmental management practices (such as implementing aggressive pollution-prevention programs, initiating environment-related performance measures and developing green products and process technologies) provide opportunities to the firms to strengthen their distinctive competence in terms of operational objectives such as the highest quality, lowest cost, best dependability, and greatest flexibility

Schahn, J. & Holzer, E. (1990) have distinguished two types of knowledge when examining environmental action: abstract and concrete. The former relates to knowledge concerning environmental issues: problems, causes, solutions and so on. The latter relates to behavioral knowledge that can be utilized and acted upon. In their analysis of 128 previous studies, Hines, J., Hungerford, H., & Tomera, A. (1987) argued that abstract knowledge was the most significant type when predicting environmental action.

Arcury, T. (1990) suggested that an individual's gender may be a factor in the amount of environmental knowledge. Gendall, P. & Smith, T. (1995) compared knowledge of environmental facts across six countries. In all six countries men tended to have higher levels of knowledge than women. Tikka, P., Kuitunen, M. & Tynys, S. (2000, p. 16) found that 'knowledge of nature and the environment seemed to be dependent on gender' because the mean knowledge points scored by men were higher than those scored by women. In a recent study in Upper Egypt, Briggs, J., Sharp, J., Hamad, N. & Yacoub, H. (2003) found that women's environmental knowledge are becoming more spatially restricted than those that many men possess.

Environmental concern has been traditionally viewed as a unidimensional construct ranging from unconcerned about the environment at the low end to concerned at the high end, as measured by the new environmental paradigm (NEP) (Milfont, L. & Duckitt, J. 2004). On the other hand, Schultz, P. (2000) proposed that environmental concerns have three correlated factors: concern for the self (egoistic), other people (altruistic) and the biosphere (biospheric).

Mohai, P. (1992) and Stern, P. (1992) found that women are more concerned about environmental issues than are men and that there are value and belief differences between men and women regarding the environment. In their exhaustive review of the literature, Davidson, D. & Freudenberg, W. (1996) conclude that, under certain circumstances, women express greater environmental concern than do men. In a study of 231 pre-college students, Riechard, D. & Peterson, S. (1998) found that female students had significantly higher perception of environmental risk scores than male students. Theoretical explanations for gender differences involve the increased knowledge of and tolerance for technological advances, support for economic growth and lower perception of environmental risks among men (Blocker, T. & Eckberg, D. 1997). For example, the trust in science and technology hypothesis postulates that women are more likely than men to lack faith in science and technology, and are therefore more concerned about environmental problems and less likely to support a 'technological fix' (Davidson, D. & Freudenburg, W. 1996). Some eco-feminist writings also suggest that women are potentially more environmentalist than men because a biospheric orientation (Merchant, C. 1979).

Kassarjian, H. (1971) studied consumers' reaction towards a gasoline that reduced air pollution and found that attitude towards air pollution was the most important variable in determining consumers' behavior towards the product. In a study conducted in Germany, Balderjahn, I. (1988) found that a positive attitude towards ecologically conscious living resulted in ecologically responsible buying and using of products, including the use of automobiles. It also prompted consumers to publicly show environmental concern by signing ecologically relevant petitions and supporting or joining an anti-pollution organization.

Brown, G. & Harris, C. (1992) found statistically significant differences between men and women in environmental attitudes and their opinion about forest policy preferences. Tikka, P. et al. (2000) found significant differences in environmental attitude index scores between the two genders with men having more negative attitudes towards the environment compared with women.

### **Rationale and support for Hypotheses of the study**

Concern for the environment groups the consumers in a category of green consumers. With increasing number of green consumers, marketers and manufacturers have started to incorporate the concept of green marketing and environmental friendly products in their product offerings. For developing market segmentation strategy first we have to identify the variables that will provide base for segmenting the consumers.

For the present study gender and age have been identified as segmenting variables through extensive literature review. Various researches have shown the difference in perception of male and female towards concerned, awareness, knowledge and adoption of green concept. Many researchers argue that women are more likely to present pro-environmental behavior. For example, research carried out by "ogolvy earth" revealed that eighty-five percent of Americans see women as more involved than men in green movement. This feminization of the green movement really holds men back when it comes to visible green behavior like using reusable grocery bags or carrying around reusable water bottles, and even driving a Prius (Bennett & Williams, 2011). Mainieri, T., Bennett, E., Valdero, T.

R., Unipan, J. B. & Oskamp, S. (1997) state that women tend to be more pro-environmental than men, in so far as they buy more green products and participate more in the separation of packages for recycling, but they did not find any significant differences between the two genders in terms of their participation in activities for the conservation of natural resources or participation in environment a list groups. Earlier research has shown differences in opinions of males and females towards the concept of green marketing, so the present study is an attempt to explore the gender differences in perception of green marketing of Indian consumers.

Similarly the variable “age” has been explored by many green marketing researchers (D’Souza, C., 2004). However, the research argument on this variable for differentiating between green and other consumers has not always enjoyed general agreement. Kinner, T., Taylor, J. & Ahmed, S. (1974) suggested that there is no significant correlation between age and environmental attitudes / behavior. (Van Liere, K. & Dunlap, R. (1981), Zimmer, M., Stafford, T. & Stafford, M. (1994) suggest that there is a significant and negative correlation, while Roberts, J. (1996), Samdahl, D. & Robertson, R. (1989) have found a significant and positive correlation between age and environmental sensitivity and behavior. The study is also hypothesized on the basis of age because age plays an important role in this part of the globe where by virtue of age decision power is transferred to the older age family member and the person in the society.

**OBJECTIVE**

The main purpose of this study was to analyze consumer perceptions of green marketing efforts and weigh the environmental concerns and influences on consumers. The other objectives of the study were:

- To map the perception of consumers for identifying the emerging dimensions of green marketing
- To study the use of green marketing as market segmentation strategy
- To study the gender effect of consumer ratings for green marketing
- To study the age effect of consumer ratings for green marketing
- To suggest the appropriate strategies to implement green practices.

**RESEARCH METHODOLOGY**

The study is exploratory in nature. A convenient sampling method was used to collect data from 270 respondents from Indore and Ujjain City of Madhyapradesh in India. The primary data collected through a self- structured questionnaire. Respondents were asked to rate the items on 1-7 point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). The reliability of questionnaire was checked with the help of Cronbachs’ alpha coefficient ( $\alpha= 0.86$ ). The validity was checked by distributing questionnaire to field experts and four items were dropped. Collected data was analyzed with the help of Factor Analysis, One Way ANOVA (Analysis of Variance).

**Result and Discussion**

In the sample, 155 respondents were male and 115 were female. 126 respondents were less than 21 years of age, 137 were in age group of 21 to 35 years and only 7 respondents were above 35 years. Data extracted using Principal Component Analysis and rotated using Varimax with Kaiser Normalization. The factor loading cut-off point was 0.3. Three dimensions emerged for consumers’ Green Marketing Issues and Practices - Green Knowledge Bent Consumer, Green Implementative Consumer and Green Environmental Concerned Consumer.

**Table 1. Factors**

<b>Green Knowledge Bent Consumer</b>
They would like to purchase the environmental friendly product.
They would like to purchase the environmental friendly products even if they are priced high
They are aware about the advertised/promoted green idea like-save energy, save oil, save petrol.

They put in action/will practice the advertised/promoted green idea like-save energy, save oil, save petrol.
They are influenced by the green labeling of product that purchase.
They are aware about the ISO 14000 certificate.
They use/will use jute/paper/cloth/recycled carry bag.
As a responsible citizen, they prefer biodegradable product to use.
They follow the pollution check –up guidelines for their vehicle.
ECOMARK informs them about the eco-friendliness of product.
They feel eco-friendly products should not be expensive
Their experience with these products is good and they will recommend eco-friendly products.

<b>Green Implementor Consumer</b>
They believe that socially responsible organization is adopting green manufacturing & environmentally safe waste disposal process.
They perceive that products that balance consumer needs with environmental consideration are profitable for company.
They think government is doing a lot to maintain ecological balance.
They are aware that Indian court ruled time to time about guidelines and directives to protect environment from industrial waste and pollution.
They think that awareness drive campaign launched by government and private industries to keep environment healthy are sufficient.
They perceive that Green product and packaging are showy.
They perceive that in reality the products are not green as they are advertised /claimed.

<b>Green Environmental Concerned Consumer</b>
They believe that product repositioning on the basis of eco-friendly and environmental-friendly attributes generates favorable response.
They will appreciate the ban on plastic/polythene bag use.
They think fifteen years old vehicles should not be allowed to run on road.
They feel EURO norms (I and II) following contribute to healthy environment.
They appreciate the initiative taken by Indian railway to put the kulladh(earthen pot) in use for taking tea/coffee
They would like to celebrate the holi, deepawali etc festival in an environmental friendly manner.

## Hypotheses

On the basis of these three extracted dimensions, the following hypotheses were stated and tested at 5% level of significance

**H<sub>1</sub>**Gender wise there is significant difference in green knowledge bent consumer ratings for green marketing issues and practices.

**H<sub>2</sub>**Gender wise there is significant difference in green **implementor** consumer ratings for green marketing issues and practices.

**H<sub>3</sub>**Gender wise there is significant difference in green environmental concerned consumer ratings for green marketing issues and practices.

**H<sub>4</sub>**Age wise there is significant difference in green knowledge bent consumer ratings for green marketing issues and practices.

**H<sub>5</sub>**Age wise there is significant difference in green **implementor** consumer ratings for green marketing issues and practices.

**H<sub>6</sub>**Age wise there is significant difference in green environmental concerned consumer ratings for green marketing issues and practices.

**Table 2. Gender Wise Mean Standard Deviation and Test**

	Gender	Mean	Std Deviation	T Value	Sig.
Green knowledge bent consumer	Male	5.364	0.061	10.874	<b>0.001</b>
	Female	5.68	0.071		
Green <b>implementor</b> consumer	Male	4.356	0.076	0.001	0.98
	Female	4.353	0.089		
Green environmental concerned consumer	Male	5.597	0.066	0.839	0.36
	Female	5.69	0.077		

The gender wise 't' test (**Table 2**) revealed statistically significant difference between males and females for green knowledge bent consumer but not for green **implementor** consumer and green environmental concerned consumer. This suggests that the hypothesis  $H_{1r}$  is not rejected i.e. gender wise there was a significant difference in Green Knowledge Bent Consumer ratings for Green Marketing Issues and Practices.  $H_2$  and  $H_3$  are rejected i.e. gender wise no significant differences found in green **implementor** consumer ratings and green environmental concerned consumer ratings for green marketing issues and practices. Green knowledge bent consumer the female consumer (means 5.68) were more green knowledge bent than male consumer (means 5.364). There were no noticeable difference found in male and female ratings for green **implementor** consumer and green environmental concerned consumer

Previous to this study Arcury, T. (1990) suggested that an individual's gender may be a factor in the amount of environmental knowledge. The present study has an entirely different result than what Gendall, P. & Smith, T. (1995) and Tikka et al. (2000) which found that men tended to have higher levels of knowledge than women as far as green knowledge bent consumers are considered. Our study also confirmed the Merchant, C. (1979) view point for green knowledge bent consumer that women were potentially more environmentalist than men because abiospheric orientation. Mohai, P. (1992) and Stern, P. (1992) found that women were more concerned about environmental issues than men and that there was value and belief differences between men and women regarding the environment but in present study for Green Environmental Concerned Consumer as such no noticeable differences were found. This study confirmed the Davidson, D, & Freudenberg, W. (1996) conclusion that under certain circumstances, women express greater environmental concern than do men but only for green knowledge bent consumer. This study also provides different results for Green Environmental Concerned Consumer than the Riechard, D & Peterson, S. (1998) findings that female students had significantly higher perception of environmental risk scores than male students.

**Table 3. Age Wise Mean and Standard Deviation for Factors**

	Age	Mean	SD
Green knowledge bent consumer	<21	4.1333	1.94022
	21-35	5.5364	0.80219
	>35	6.2667	0.75425
Green <b>implementor</b> consumer	<21	3.9444	2.44002
	21-35	4.9242	0.93969
	>35	4.5	1.88562
Green environmental concerned consumer	<21	3.9333	1.41892
	21-35	4.4818	1.01644
	>35	4.7	0.98995

**Table 3** indicates that consumer awareness towards environment concerns varies with age and the trend shows that with advancement in their age the level of awareness towards environment concerns increases. It was found that higher age group consumers were more consistent in their opinion that they were more aware about green marketing practices than the lower age group of consumers.

Green implementor consumers who believe that system must work for implementing green marketing practices also varied in their perception with age. Consumers below the age group of 21 years were perceived ???green marketing practices with wide variation. This shows that some respondents of this age group believe that green marketing practices can be implemented by developing a system such as government regulations where as others believe that consumers may play a vital role in facilitating green marketing practices. Consumers in the age group from 21 to 35 years were more consistent in their opinion that government institutions as well as the manufacturers and service providers have to build consumer confidence regarding promises of green products and services. Higher age group of consumers have shown relatively more concerns for environment and they were more eco-friendly as they were willing to pay more prices for eco-friendly products and services.

**Table 4. Age Wise Analysis of Variance**

		Sum of Squares	Mean Square	F	Sig.
Green Knowledge Bent Consumer	Between Groups	6.818	3.409	4.384	<b>.018</b>
	Within Groups	35.768	.778		
	Total	42.586			
Green Implementator Consumer	Between Groups	2.947	1.474	1.269	.291
	Within Groups	53.433	1.162		
	Total	56.380			
Green Environmental Concerned Consumer	Between Groups	.968	.484	.450	.640
	Within Groups	49.432	1.075		
	Total	50.400			

**Table 4** indicates that there were significant difference in the perceptions of green knowledge bent consumer by age. It means with age advancement consumers grow more confident in believing green environmental practices. Hence hypothesis H<sub>4</sub> is accepted. However hypotheses H<sub>5</sub> and H<sub>6</sub> were not accepted because there were no significant differences found in perceptions of Green Implementator consumers and Green Environmental Concerned Consumer of different age groups towards green marketing practices.

## **DISCUSSION**

There were gender-wise and age-wise significant differences observed in the perception of sampled respondents towards green knowledge. Findings of the study revealed that degree of awareness is significantly dependent on age of green consumers. The reason could be sense of responsibility towards the environment increases with advancement in age. It may be due to greater exposure of citizens for their self and family well beings, quality of environment at their home and at working places and overall their self-awareness towards wasteful activities resulting in harm to the environment. For example, in our childhood we might not be able to understand the importance of energy conservation. However, once we realized it with growing age and knowledge its importance, we practice energy conservation and we expect the same from our children, family members and friends. However, the response process, level of knowledge, awareness and degree of agreement may vary for individuals of the same age group. The findings of the study are also consistent with Roberts, J. (1996) study that found a significant and positive correlation between age and environmental sensitivity and behavior. However, Kinnear, T., et al. (1974) observed no significant correlation between age and environmental attitudes / behavior.

The findings of the study also revealed that females were more concerned for environment than males as green consumers. The degree of knowledge and level of awareness may be the same for males and females but when it comes to the actual realization for being a green consumer then female consumers show higher degree of responsiveness than male consumers. The similar view is also supported by Davidson, D. & Freudenberg, W. (1996) that under certain circumstances, women express greater environmental concern than do men.

## **CONCLUSION**

This study concludes that consumers may be segmented on the basis of their perception towards green marketing practices. This study concludes that gender does not influence the opinions for environmental concerns and implementation of green marketing issues and practices. However opinions differed in individual green knowledge aspects. Age also proved to be a significant differentiator for the green knowledge bent consumer. Findings of the study revealed that with advancement in their age consumers become more consistent and certain about the environmental concerns and influences upon purchasing product, awareness. Marketers can formulate segmentation strategy in favor of their product and services by adopting and communicating green marketing issues aiming at creation of broader awareness towards environmental concerns and green marketing among consumers. The consequence is that consumers will be willing to pay more for green products than they would for a less-green comparable alternative product.

## **SCOPE FOR FUTURE RESEARCH**

Though this study was an attempt to look into more about identifying dimensions of consumer segmentation on the basis of their perception towards green marketing issues and influence of gender and age of consumers on their perception towards green marketing, but future research can be on specific areas like green manufacturing process, green supply chain management and acceptance of more environmental concerned issues like packaging, nature and recycling standards.



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