Impact of Consumer Awareness and Consumption Habits on Environment

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ABSTRACT

Today's consumer is in the caucus of 'going green' because of the environmental threats. Companies are under continuous pressure from legislature and consumer to ensure that every product from womb to tomb is following environment friendly journey. The sincere environment friendly consumers are increasingly concerned about environment protection and are the driving force for companies to engage in environmental management. A green consumer prefers purchasing environment-friendly or eco-friendly products which are made from natural resources that have little or no packaging and products that are manufactured without causing pollution. But, because of some of the consumption habits of unaware consumer, nature brings back threats in the form of floods and disaster.The indiscriminate use of plastic polythene, polystyrene / thermocol and most dangerous stuff like baby nappies poses huge threat to the environment and poses serious health hazards for life on the earth. The main problems with such material is that they are non-biodegradable, they choke drains and sewers, and when burnt, they emit poisonous gases. Government has passed strict regulations to check the consumption habits and protect the environment. This study is conducted in order to determine the level of awareness regarding environmental issues and synchronization of consumption behaviour. The reflections in the findings have been further verified from dimension demographic profile of the respondents.

Keywords: Consumer Awareness, Green Environment, Consumption Habits

1. Introduction

Green or environmental marketing consists of all activities, designed to generate and facilitate any exchange intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occur with minimum detrimental impact on the natural environment (Polonsky, 1994). The challenge of green marketing is to meet the unlimited wants of consumers within the constraint of limited resources by inventing and incorporating practices that ensure least waste and pollution.

The concept of green marketing ensures that every product from womb to tomb is following environment friendly journey. From development to final consumption, every product passes through various stages. There can be four stages in this journey namely, development, production, consumption and disposal stage. To be nominated as green business or following green marketing, green concern at every stage ensures minimal packaging of inputs & considers sources of materials that could be easily replenished or recycled. At production stage companies are encouraged to reduce emission, toxicity and waste so as to conserve water and energy. At *consumption stage*, the minimization of packaging, conservation of energy and minimization of waste from product maintenance and service are strongly used. Finally at time of product disposal, green marketing introduces the concepts of reuse and recyclability.

The sincere environment friendly consumers are increasingly concerned about environment protection in the world. There is a journey called Green Consumerism, ensuring minimal damage to the environment by purchasing, using and recycling of eco-friendly products (Hart, 1997).A green consumer prefers purchasing environment-friendly or eco-friendly products that are made from natural resources that have little or no packaging and products that are manufactured without causing pollution. Even the governments throughout the world are executing compulsory norms to be followed by corporate houses with regard to corporate environmental management& protection.

A significantly increasing impact affecting the operations of companies is the policies of governments with regard to the environment protection, and the presence of both national and international environmental regulations would affect corporate operations (Rugman, 1998). The indiscriminate use of poly bags poses huge threat to the environment and poses serious health hazards for life on the earth. The main problems with plastic bags are that they are non-biodegradable, choke drains and sewers, and when burnt, they emit poisonous gases. Studies have found that consumers are more willing to choose green products and even pay relatively high prices for environment-friendly products (Henriques, 1996). Thus, in order to control the plastic waste, the legislators of various countries have adopted the practice of charging consumers for polythene bag while shopping. It is practiced to discourage the usage of polythene bags as substantial quantities of plastic have accumulated in the natural environment and in landfills. Around 10 per cent by weight of the municipal waste stream is plastic (Barnes, 2009).

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The traditional poly bag was hardly bio-degradable. Thus the new Eco friendly biodegradable polythene bags are made compulsory for usage by most of the governments. The price of this poly jacket is the same as the conventional bags. It is made up of film that has an additive at the beginning of the extrusion process to reduce molecular weight. In about 18 months film will degrade in water, a small amount of carbon dioxide and biomass (Material Recycling Week, 2006).In Indian context, there is government directive to Retailers Association of India to charge customers for carry bags depending on their size has virtually proved to be a mixed bag for retailers concerned. The Retailers Association of India in turn, has prescribed standard price for the type of bags that are given to customers. In India, a small bag is priced at Rs. 3, a medium bag would cost one Rs. 5, and a XL or a XXL bag Rs 7 each. The process also required retail stores to incorporate changes in their billing software to account for the price of plastic bags given to the customers. This is a big endeavour by legislators and retail stores but there are challenges of consumer adaptability to this new practice. Leading retail shop usually account for nearly 400-500 bags each day and most of these bags were in the medium category; post period number of bags dispensed is coming down (Jaideep Shenoy, TNN, 2011).

2. Need of the Study

As discussed, today's consumer is in the rally of 'going green'; for some its 'fashion' while others understands it as the 'need of the hour'. It will only be lack of awareness on the part of consumer if he still is unaware of his consumption habits and its bad impact on the global environment. We are facing environment disaster all over in the form of floods and rains. It is all result of the small and careless mistakes on the part of the consumer while selecting products and changes in the life style. We all use plastic carry hand bags for shopping which till date is part of courtesy of the store to provide for free. But, the fact is that the end of poly bag life is threat to our environment, both ways, whether it is burnt at last or is thrown to choke our drainage. Thus, there is a need to understand and behave responsibly on the part of consumer and develop a smart habit of bringing his own shopping bag which can be of fabric or jute i.e. it is reusable and after its life it is bio-degradable. There is a need to understand and follow the concepts of Green Marketing from within. Not only has the poly bag, rather the use of thermocol and plastic disposables for free meal service ('*langarseva*' *in India*) service is another very big danger to our environment. It is very common to see heaps of 'plastic' or 'thermocol' disposable plates and glasses (*which is most dangerous for our environment*) at the sight of free meal service. Polystyrene/Thermocol has replaced the age old leaf plates and clay glasses which were also disposable but not at all environmentally dangerous. It is lack of awareness than the concern towards environment that consumer use these all without knowing the cost of the same to environment. This paper is an attempt to understand the level of awareness and through the insight on the stuff which is taxing our environment.

3. Literature Review

During the last two decades the sprouting environmental movement was named as the "green movement"; environmentally aware consumers called the "green consumers", product designed to protect the environment called the "green product" and marketing that uses the environmental claims called the "green marketing" (Peattie, 1995). According to the authors like (Ottaman, 1993) conventional marketing is out and Green Marketing is in. Governments, companies and consumers have become aware of environmental issues and prefer green marketed products. In the journey of decades from marketing to green marketing, consumer has become environmentally enlightened.

a. Awareness level of Corporate Sector

Corporate attitude to environmental issues have changed significantly over the years.Not only the companies are aware of the environmental issues but also know from deep that there is no other way around. As a result of staggering pollution levels and the diversity of environmental concerns, a wide range of pressures is coming to bear upon industry/firms from many sides.These green pressure groups include the customer's pressure, government pressure (legislation pressure), investor pressure, community pressure, business-to-business customers' pressure and employees' pressure (Fischer & Schot, 1992). In many cases, mandatory environmental legislation is also forcing behavioural changes in consumers (Clarke, 2004).

The basic ideas behind environmentalism dictate that corporations have responsibilities that go beyond the production of goods and services. These responsibilities involve helping to solve important social problems, especially those they have helped create (Buchholz, 1991). It is not only that corporate houses understand but have also started acting on the lines of going green. Corporations such as McDonald's, Wal-Mart, Procter & Gamble, and Du Pont acknowledge that the environment must be protected and enhanced for economic growth to take place, and have taken action towards that goal. McDonald's has made a $100 million commitment to its consumers for recycling purposes. Wall-Mart encourages the purchase of environment friendly products and reports that the green labelling program that they initiated in 1989 contributed to an overall 25percent increase in sales for the year. Procter & Gamble has pledged to spend $20 million per year to develop a composting infrastructure (Lodge & Rayport, 1991).

b. Non-Biodegradable Polybag hazards

So far we have focused on the literature in green marketing related with the green development, and green production. The final stages are consumption and / or disposal. The waste management is another big environment issue. A green consumer prefers buying products which shall

not have any harm on environment once discarded. Especially, the packaging of the products plays an important role. Lots of the packaging material (plastic or paper bags) and the worst part is that it is a big environment hazard.

Plastic bags are made from non-renewable resources, where the key ingredients are petroleum and natural gas. As per Arlington, Virginia based American Plastics Council, plastic bags are cheap to produce and that they have occupied as highas 80 percent of the grocery and convenience storemarkets.

On the other hand, Paper bags are made out of Pulpwood from trees,which is a renewable source (John Roach, 2003). However, we get paper bags from felling of a tree which blemishes both plants and animals and also their production process engrosses energy created by coal or natural gas. The created pulp will be converted into a paper bag by different processes and machines after consuming tremendous amount of energy from fossil fuels, electricity, various chemicals, etc. (Graff, 1997).

Both plastic and paper bags are used by most people for shopping needs, although frequency and percentage of use differs between individuals. It is very difficult to say which one of the two is more dangerous for our environment. Some of the previous studies dealt with comparison of plastic and paper shopping bags and have brought out some issues and concerns. Different authors studied Life Cycle Assessment (LCA) (What goes into an LCA?, 2004).

The study by Franklin Associates, which compared the impact of single-use paper and polyethylene bags in the USA, assumed a ratio of 2 plastic to 1 paper bag and concluded that plastic carry bags had lower environmental impacts and used less energy at current recycling rates (S.S.Muthu, 2009). Whereas, from the study carried out by Bentley West Management Consultants, South Africa, contradictory results were presented and also it was advised to conduct a streamlined LCA study to conclude which one is more environmentally friendly in the South African context.

c. *Need for Waste Management*

Today, everyone understands the dangers of global warming, everyone has become cautious of environment and waste. It is evident that plastic bring many societal benefits but it is equally dangerous. Plastic takes very long time for biodegradation. Thus, concern about usage and disposal of plastic waste are diverse and include accumulation of waste in landfills and in natural habitats, physical problems for wildlife resulting from ingestion or entanglement in plastic, the leaching of chemicals from plastic products and the potential for plastics to transfer chemicals to wildlife and humans. Though burning of wastes including plastics is not an environment friendly activity, it is being practiced indiscriminately all over the world. When plastic is melted down, its chemical structure changes and release gases causing cancer. For example, burning of polyurethrene foam *releases about 57 cancer causing chemicals* which include extremely toxic toluene disocyanate.

As per the available estimates, each year more than *400 million metric tonnes of hazardous waste are generated worldwide* (Jha, U.C., 2004). For economic reasons, a large volume of hazardous waste used to be exported from industrialised countries to south Asian countries. These countries lack capability of environmentally sound management of waste disposal. Greater action in minimising and managing hazardous waste is required here because these countries lack the capability of disposal, monitoring and enforcement. Not only imported, even the countries like India, China contribute world's major chunk of plastic bags and packing material. As per the estimates, India's population is more than 1 billion. If 10 members are living in one house there will be more than 100 million houses. At an average of 2 plastic carry bags used by each family every day, which means 200 million plastic carry bags are used daily. That means yearly 73 billion plastic carry bags are used. But these plastic carry bags do not remain in houses permanently. These 73 billion plastic carry bags multiply every year in the earth without degrading.

These materials in landfills slowly decompose and release toxic chemicals contaminating soil and ground water. The burial of red and yellow plastics, which usually contain cadmium as a pigment, may lead to groundwater contamination.Plastic discards, in general, are considered non-biodegradable and do not decompose in a reasonable timescale. However, depending on the bondage and environment, the degradation time varies from a couple of days to several years. Generally, polyethylene and other commodity plastics remain in the soil for many years without any degradation whereas polycaprolactone degrade in a reasonable time. On timescale for degradation, packaging materials like 'Styrofoam' popularly known as 'thermocol' takes 'Eternity' i.e. endless; whereas *plastic jug takes around 1 million years*; *disposable diaper takes around 500-600 years to dissolve*; *aluminium can takes 200 -500 years*; *tin cans take around 80-100 years* and *paper bag takes 1 month to degrade in soil* (Varma). This all reviewed information is an eye opener. Environmentally concerned citizens as consumers themselves will say no to packaging and stuff like plastic bags.

4. **Research Design and Methodology**

For the purpose of this study,the quantitative research method is used, where the emphasis is on the quantification of variables and statistical controls. The main approaches followed are exploratory and descriptive research aimed at exploring and describing the Impact of Consumer Awareness and consumption habits on Environment.

To measure the respondents' awareness towards environment concern and actually reflecting the same through consumption behaviour, five point Likert scale was used. The eight Likert items were prepared for measuring

the awareness towards the environmental concern. The descriptive statistics, reliability of measurement using Cornbach Alpha; Likert Scale analysis using Chi-Square test and Kruskal-Wallis test were used in "Empirical results" section. In the end, this study mentioned the discussions about the findings and implications, and possible directions for future research in "Conclusion and Implications" section.

It is a fact that the enforcement of the Act to protect the environment is top profile and thus it is important to understand the level of the awareness of the consumer towards the implementation of the Act. This study is conspicuously focused in the Indian context. The following are the objectives of this study:

a. *Objectives of the Study*

- To understand the consumer awareness about the role of their consumption habits on environment;

- To determine if this awareness is dependent upon demographic profile of respondents viz, age and gender etc.

b. *Methodology*

An online survey was conducted as it provided the most reliable option to sample a wide range of shoppers across India. The questionnaire was designed and tested. A total of 207 responses were achieved. For the 95 percent confidence interval, results to this survey are calculated to be accurate to within +/- 4.1per cent margin of error.

c. *Measurement of Constructs*

Responses were directly entered into a datasheet at the time of interview. MS excel and IBM SPSS was used to analyse the survey results. Five point Likert scale was used for measurement of the awareness of the consumers towards impact of their consumption habits on the environment.

d. *Research Methods*

For the purpose of analysis consumer awareness as a function of age, the Chi squared (Written as χ^2) is used tohelpin determining whether an observed set of results matches an expected outcome. The notion of Chi Square can be written as follows (Eyduran, 2008);

$$\chi^2 = \sum \frac{(f - f_i)^2}{f_i}$$

Where, f, observed frequency and f_i, expected frequency.

Further, for the analysis of consumer awareness as a function of age, Kruskal-Wallis test (H) was found appropriate depending upon the assumptions held by the data. This test is suggests us if the differences between the groups are so large that they are unlikely to have occurred by chance. The formulae for the same can be written as follows:

$$H = \left[\frac{12}{N(N+1)} * \sum \frac{TC^2}{n_c} \right] - 3 * (N+1)$$

N is the total number of participants (all groups combined). Tc is the rank total for each group. n_c is the number of participants in each group. $\sum \frac{TC^2}{n_c}$ means the following: First, take each group's rank total, square it and then divide the result by the number of participants in that group.

5. Empirical Results and Discussion

In order to determine the awareness among the consumers towards the green environmental issues and thus synchronizing the sincere and responsible consumption habits, Likert items were prepared and analyzed. The questionnaire was got filled from 207 respondents. The detailed description of the participants as shown in table 1 consisted of around 70 percent men. The age of the respondents being an important and relevant factor was quite scattered and was binned into four categories as shown in the table, viz. Category 1 was labelled for age less than 35; Category 2 for age between age 35-50; Category 3 for age between 50-65 and Category 4 for age above 65 years. Similarly on the basis of education the respondents were classified as around 19 percent graduates, 50 percent as post-graduates and 28 percent on doctoral level of education.

Table 1
Sample Profile

	N	%
Gender		
Men	143	69.1
Women	64	30.9
Age Group (Binned)		
Category I	12	6.0
Category II	54	25.9

Category III		94	45.2
Category IV		47	22.9
Education Levels			
High School		1	.1
Graduation		39	18.9
Post-Graduation		103	49.7
Doctoral		59	28.6
Any other		5	2.6

The respondents were served with Likert Scale statements and they were supposed to rate their answers on five point scale from Strongly Agree to Strognly disagree continuum. These responses were quantified giving rating from '1' to '5'. For positive statements response having strongly disagree with 1, disagree with 2, neutral with 3, Agree 4 and strongly agree as 5. While for analysis of the negative statements the weights were reversed i.e. quantified as '5' for strongly disagree in case of negative statement and '1' for strongly agree in case of a negative statement on the continuum.

The overall awareness of the respondents towards the environment & showing sincere consumption habits of green products and packaging is positive '4'. For reliability check of the Likert scale, Cornbach Alpha reliability check was conducted and found satisfactory at .717 and thus the scale found to be fit for the further analysis.

As shown in the table 2, as per the study the Overall response based on the gender depicted majority of 36.2 percent of the male and 16 percent of the female respondents disagreed with the statement while 7.7 percent male and 3.6 percent of the respondents strongly disagree. On the other side of the continuum merely 2.6 percent of the male and 2.3 percent of the female respondents strongly agree while around 7.5 percent of the male and 4 percent female respondents agree to the statements under question.

Table 2
Gender Overall Response

Overall Response

		SA	A	N	D	SD	Total	
Male	Count	5	16	31	75	16	143	
	Expected Count	6.9	16.5	28.9	74.6	16.1	143.0	
	% within Gender	3.7%	10.9%	21.9%	52.4%	11.1%	100.0%	
	% within Overall Response	52.9%	65.4%	74.6%	69.4%	68.4%	69.1%	
	% of Total	2.6%	7.5%	15.1%	36.2%	7.7%	69.1%	
Female	Count	5	8	11	33	7	64	
	Expected Count	3.1	7.4	12.9	33.4	7.2	64.0	
	% within Gender	7.4%	12.9%	16.6%	51.6%	11.5%	100.0%	
	% within Overall Response	47.1%	34.6%	25.4%	30.6%	31.6%	30.9%	
	% of Total	2.3%	4.0%	5.1%	16.0%	3.6%	30.9%	
Total	Count	10	24	42	108	23	207	
	Expected Count	10.0	23.9	41.8	108.0	23.3	207.0	
	% within Gender	4.8%	11.5%	20.2%	52.1%	11.3%	100.0%	
	% within Overall Response	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	4.8%	11.5%	20.2%	52.1%	11.3%	100.0%	

There seems some difference on the basis of gender. Male seem more concerned about the environment as compared to female respondents showing more concerned and sincere consumption habits. For the purpose of seeking confidence in the differences, a Chi-square test for association was conducted between gender and preference for environment. As shown in the table 3 with Chi-Square results, all expected cell frequencies were greater than five.

Table 3
Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.30[a]	4	.150
Likelihood Ratio	6.530	4	.162
Linear-by-Linear Association	1.296	1	.252
N of Valid Cases	207		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 3.09.			

As shown in the table 3, there was no statistically significant association between gender and preference for environment, $\chi^2(1) = 6.30$, $p = .150$. Thus, the preference towards the environment is not dependent on the gender.

Though, there seems some association between the age group and the concern about environment. A Kruskal-Wallis test was run to determine if there were differences in awareness and sync consumption habits and age groups. For the purpose of analysis, the age was binned into four categories viz., group 1 was labelled for age less than 35; age group 2 for age between age 35-50; age group 3 for age between 50-65 and group 4 for age above 65 years. Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Awareness towards the impact of consumption habits on the environment was statistically significantly different between the different levels of age group, $\chi^2(3) = 89.80$, $p = .000$. *Post-hoc* analysis revealed statistically significant differences in environmental concern of consumer between the age group 1 less than 35 years and 2 with age between 35-50; and 1 and 3 and 1 & 4 between age group 2-3 and age group 2-4 but not between any age group 3 and 4 i.e. age 50-65 and above in category 4. *There is statistical difference in age and consumer's awareness about their consumption habits and its impact on the environment.* The study revealed that there is statistical significant effect of the age on overall environmental awareness. Result showed that increase in the age have effect on increasing of awareness about impact of consumption habits on environment, it remains same for age group 3 and 4 i.e. from 50 years onwards.

Further, the response to few of the close ended questions revealed following results. 67.9 percent of the respondents confirmed that they are aware about environmental issues and their consumption habits; while merely 18 percent of the respondents stated that they were aware of legislative implications of consumption and waste mismanagement. 12 percent of the respondents aged 51 or over were the most likely to always behave as per their awareness; while only 9.7 percent of respondents of this age group stated that they never bothered in practice.

6. Conclusion and Implications

Interesting facts have emerged from the empirical results. The picture of consumer's awareness towards environment and consumption habits can be drawn from Likert scale results. The respondents are quite surely holding high awareness level towards the environment and seem to understand very well the need for sustainability of resources for coming generations. The awareness seems to be reflected in their consumption patterns independent of the gender but has a role to play for age of the respondents. The respondents with age more than 50 years seem more responsible towards environment.

The study revealed that there is need for spreading awareness and ensuring complete check onconsumption habits of the consumer. It can only have permanent solution once the consumer from within feels that it is something which can be lived without. When it is not an option only then people of all age groups, and education level will bring their own reusable bags for carrying their stuff. It is must and recommended for implementation.

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