

SEGMENTATION OF SOCIALLY CONSCIOUS CONSUMERS PRACTICING SUSTAINABLE CONSUMPTION: AN EMPIRICAL STUDY

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Abstract:

Objectives: To identify the attitude and behavior of consumers followed by classification with reference to responsible consumption and green values.

Proposed Methodology: Convenience sample of 250 Indian consumers segmented through Factor and cluster analysis, validated by discriminant analysis

Key results: Indian consumers seem to be informed of environmental issues. The results show that most consumers agree to sustainable consumption but few are willing to practice green consumption ways.

Implications: This paper unearths the similarities of consumer attitudes regarding environmental concerns and records the behavioral variations identifying two consumer segments. These hold significant implications for marketers involved in the marketing of ecological products. This calls for further research and devising of marketing programmes to address the sentiments of environmentally responsible consumers.

Keywords: socially responsible consumption, sustainability, factor analysis, discriminant analysis

I. INTRODUCTION

In this paper, we empirically examine how environmental factors affect the purchase behavior of individuals. It highlights eco-consciousness and ascertains how far individuals make a tradeoff between personal benefits/ goals to environmental concerns through their consumption habits. Worldwide economic and population growth has resulted in ozone layer depletion, natural resource depletion, green house effect and climate change along with forest exhaustion. Consecutively, environmental awareness has given rise to environmental sustainability. Thus, sustainability is the idea of keeping the environment as pristine as possible with ideal behavior involving daily interactions. Consumers have realized the individual contribution of consumption habits and the sum of decisive actions regarding purchase and use of ecologically unsafe products. This paper tries to identify green consumerism through green consumer sentiments along with sustainable practices.

II. GREEN SEGMENTATION: REVIEW OF LITERATURE

Segmentation of the green market is imperative to the marketer to reflect pro environmental purchase behavior (Schlegelmilch, Bohlen and Diamantopoulos 1996). For demographic variables like age, Straughan and Roberts (1999) reports that youngsters are more concerned towards green movement, though negative correlation has also been analyzed (Henion and Cox, 1950) with no relationship between age and environmental concern (Kinnear, Taylor, Ahmed (1974). Income is positively correlated to environmental sensitivity (Anderson and Cunningham, 1972; Roper 1990). Women with "empathy" and "sensitivity" are expected to be more concerned with environmental righteousness (Samdahl and Robertson, 1989). Education has shown positive correlation (Roper organization 1990) and negative correlation (Samdahl and Robertson, 1989). Pro-environment behavior (PEB) has emerged to be the likely predictor of consumer consumption preferences (Ishaswini and Datta, 2011). PEB holistically merges generalized behavior; sector based behaviors like recycling, transport, energy consumption and considered environment issues for product purchase (Jain and Kaur, 2004). Modi and Patel, (2013) identified two segments of 'Active Green Activists' and 'Passive Green Activists' which explained differences in energy activism, conservatism and environmental concern.

The Roper Organization (1990) segregated American consumers as *True Blue Greens*, *Greenback Greens*, *Sprouts*, *Grousters* and *Basic Brown*. Natural Marketing Institute's (NMI),

Lifestyle of Health and Sustainability (LOHAS) Consumer Trends Database (LCTD), 2009 report classified U.S. adults into five unique consumer groups of *LOHAS*, *Naturalites*, *Drifters*, *Conventionals*, and *Unconcerneds*. It undertook segmentation concerning recycling, conservation, organic products, environmental stewardship and energy conservation.

III. RESEARCH GAP AND QUESTION

The fast changing cosmopolitan population and culture in a metro like, Kolkata will help in explaining the evolving behavioral changes towards sustainable consumption. This study will deal with the following research questions:

- Does green consumer value relate to the practice of socially responsible consumption behavior?
- Do different typologies of consumers exist in terms of green consumer values?

IV. RESEARCH METHODOLOGY

This exploratory research study involves nineteen questions, of which four were adopted from Haws, Winterich and Naylor's (2010) Green Consumer Values including product usage, action responsibility and fifteen items from Antil and Bennett's (1984) Responsible Consumption construct including behavioral and attitudinal measures related to socially conscious purchase decisions, consumption regulation, natural resources preservation, environmental activism, commercial advertising, opinion leadership promotion, boycott of unethical companies, governmental regulations to environmental hazards. The structured questionnaire was on Likert scale with 1= strongly agree and 5 = strongly disagree.

5.1 Sample

A standard confidence level of 95% at 7% tolerance for error was used with standards for unknown population. With this statistical understanding, the sample size (convenience sampling) was calculated to be 196, but the actual number of respondents sampled was 250.

5.2 Reliability

Cronbach alpha was calculated and it was found to be 0.77 for social consumption scale and 0.67 for green values scale. The step by step approach that this research has adopted is given below in Figure I.

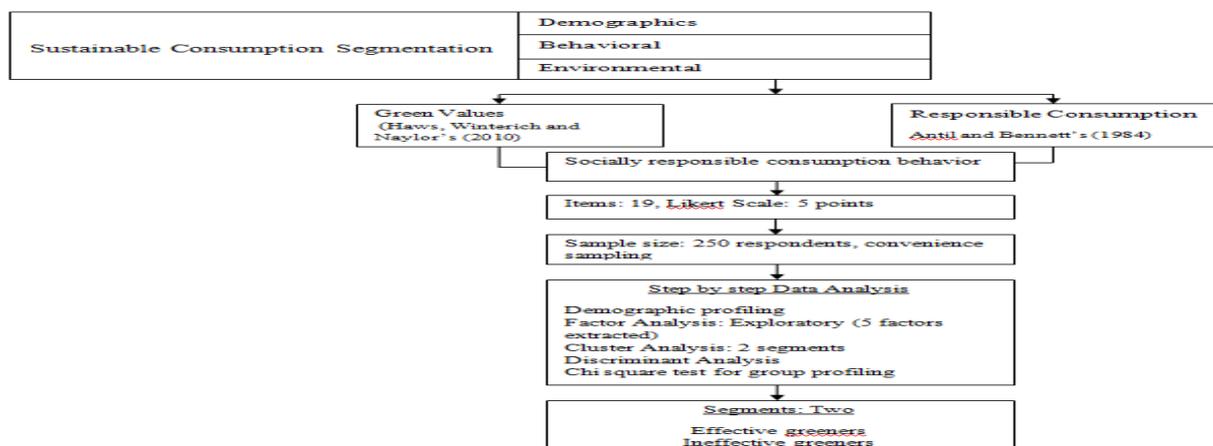


Figure 1 Framework of the analysis

4.3 Consumer attitude scale

4.3.1 Gender differential scale

Pearson's Chi square test $\chi^2(3, N=248) = 8.57, p(0.03) < 0.05$. Result: women exhibit greater environmental strength (recycling and eco-conscious behavior)

4.3.2 Income differentials

Pearson's Chi square test $\chi^2(9, N=240) = 9.30, p > 0.05$. Result: environmental responsibility does not increase with increase with income.

4.3.3 Environmental concern with education

Pearson's Chi $\chi^2(15, N=248) = 25.72, p < 0.05$. Result: statistical significance between education and being environmentally conscious.

4.4 Consumer attitude and behavior aspects (Correlations)

4.4.1 Women are greater in eco conscious behavior (recycling), $r = 0.425, n = 250, p = 0.00$ at the 0.01 level (2 tailed).

4.4.2 Being environmentally responsible and considering the environmental actions of many of the decisions taken, $r = 0.355, n = 248, p = 0.00$ at 0.01 level (2 tailed).

All the above correlations point out to greater relational interrelationships, thus, exploratory factor analysis (EFA) was carried out to for data reduction and summarization of the 19 variables.

Principal component analysis with varimax rotation and Eigen value (> 1) was considered. KMO measuring adequacy was 0.819, ($0.819 > 0.05$) and Bartlett's test of sphericity was significant at 0.00. Extracted five factors explained around 52.1% of the total variance.

Table I Factor Analysis results

Factors	Items	Description		% of Var.	Cumm. Var.
Eco friendly manufacturing scale	Encourage manufacturers to practice recyclable packaging	The variables relate to ecological concern. The purchase and consumption habits are ecologically sustainable for resource preservation, recyclable packaging.	0.719	24.18	24.18
	not doing enough to save scarce resources		0.67		
	advertising mentioning ecological disadvantages		0.611		
	force manufacturers to use recycled materials in their functions		0.597		
Green consumer value scale	I do not use harmful environmental products	Tendency to evaluate products with favoritism towards green products. Points towards a pro environmental approach with focus on positive green health benefit to the environment.	0.755	9.76	33.94
	I consider the potential environmental impact of my actions		0.719		
	I am environmentally responsible		0.601		
	Environmental concern drives my purchase habits		0.597		
Environmental product attribute	Environmental consequences of the products that they buy	It brings out the green products and its pricing. Also, that green products can be positioned on the plank of environment safety.	0.704	7.09	41.04
	Higher prices for environment polluting products		0.505		
Consumption behavior	Restrict our consumption so that our resources can last longer	Self regulation of consumption behavior to provide for future. Captures future consumer sentiments for resource allocation.	0.704	5.66	46.71
	Natural resources must be reserved, even if we have to do without some products.		0.503		
Consumer contribution	I would donate a day's pay to help improve the environment	Consumer willingness to part resources for environment.	0.728	5.39	52.1

Further, one way Analysis of variance (ANOVA) and Discriminant analysis was performed to (1) determine differences with the means and (2) to validate the clusters. Here, extracted variables (dependent variables) and the clusters (independent variables). The results of F statistics, Wilk's lambda and significance level are given in Table 3. The variables of age, education and income were able to differentiate between the groups at a 0.01 significance level.

Table II Wilk's lambda and significance levels

Defining variables	F	Wilk's lambda	Sig.
Age	0.57	41.93	0.00
Education	4.25	0.94	0.00
Income	0.47	83.85	0.00

Multiple Discriminant Analysis (MDA) was employed to validate the clusters (Table III). The square of canonical correlation, indicates that $76\% (0.872)^2 = 0.76$ of the variance in the dependent variables is accounted and explained by this model.

Table III Canonical discriminant function

Eigen value	Canonical correlation	Wilks' λ	Chi-square	df	Sig.
3.162	0.872	0.24	315.022	6	0.000

97.8% of the respondents have been correctly segmented (Table IV) from the given Discriminant function and it is a satisfactory result.

Table IV Classification results: Cluster Analysis

Original Grouping	Cases	New Groups	Cases	%
Group 1	124	1	120	96.7
Group 2	102	2	101	99.01
Total	226		221	

Original groups correctly classified = $(120+101)/226 = 0.977 = 97.78\%$

The standardized canonical functions coefficients (absolute values) (Table V) reflect the relative importance to discriminate between the groups.

Table V Standardized canonical discriminant functions coefficients

Variables	Coefficients
Green Consumer value	-0.061
Pro-environmental attitude	-0.186
Gender	0.012
Age-group	0.74
Education	0.096
Income level	0.921
Significant at the 0.01 level	

Demographic variables were crossed with behaviors (cross tabulations and t-tests) to find gender was insignificant in group identification. Interestingly, increasing levels of education does not necessarily show a proportional rise in green consciousness as expected. The resulting differentiated segments have been characterized as follows:

1. *Effective greeners*

47.8% of the total sample, males 65.3% followed by females (34.7%) are with higher income, age and education level. These socially conscious consumers have positive environmental attitude concerning green consumption behavior and consider potential impact of actions.

2. *Ineffective greeners*

With 66.7% of the total sample, it has 60.8% males and 39.2% females. The respondents are students and not too high on sustainable consumption. They do however show ecological consciousness as far as recycling and saving scarce resources are concerned.

V. DISCUSSION

The city of Kolkata exhibits nascent nature of green consumerism in the niche segment of supporters (47.8%). In this study, preference for ecosensitive products increases with income, however, educated people do not possess environmental concern whereas young consumers (18- 30 years) signify a limited interest in sustainable consumption. Older consumers (> 40 years) seem to support green products.

The *Effective greeners* are the environmental stewards who are the highest consumers of green products and are important links for companies practicing socially responsible products. These green committed consumers are the trend setters and should be viewed as motivators to influence their peers.

At 52.2%, the *Ineffective greeners* (younger segment) exhibit little practice of green consumption being highly price sensitive. They can be converted to effective greeners by providing an incentive of personal well being through green products being which transforms into environmental protection.

VI. IMPLICATIONS FOR MARKETERS

The challenge for marketers is to forge strategies making consumers choose sustainable means of consumption.

A green product (with health and environmental benefits) must offer consumption benefit for e.g. a health benefit and perform brilliantly on its stated functional attribute.

Promotion through a credible personality highlighting personal well being with environmental safety can be an effective strategy for green consumerism.

Devising communication mix with value offerings (loyalty programmes) for the *Effective greeners* to reward and retain them for lifetime.

For the sizably attractive and ignorant *Ineffective greeners*, continued advertising to educate and build consumer preference for eco friendly products through eco labeling and green advertising is important

VII. LIMITATIONS OF THE STUDY

There were time and resource constraints which were minimized.

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