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A Study on Purchase of Green Products in Pune

[1]Dr. Avinash Sahurkar, [2]Yogesh Raut

[1]Associate Professor, Lok Mahavidyalaya, Wardha, India
[2]Assistant Professor, STES's Sinhgad School of Business Studies, Narhe, Pune, India

Abstract: **This article intends to find whether the age and gender of the person has an influence on consumer behavior. The present study comprises a sample from Pune in India. It tries to find out people's interest about environment, when 'green' has become the buzzword. Pune being an economically well developed city has also emerged as an education hub. This research study aims to be of help to marketers to sell their green products to the consumers, by helping them to identify the profile of the Green Consumers.**

Keywords: **Age, Gender, Green products.**

I. INTRODUCTION

Environmentally responsible or "green" marketing refers to the satisfaction of consumer needs, wants, and desires in conjunction with the preservation and conservation of the natural environment. Considered an oxymoron by many environmentalists (because it still promotes consumption), green marketing manipulates the four elements of the marketing mix (product, price, promotion and distribution) to sell products and services offering superior environmental benefits in the form of reduced waste, increased energy efficiency, and/or decreased release of toxic emissions.

Green Marketing and its evolution

Green marketing is the marketing of products that are presumed to be environmentally safe (AMA). The basic idea is that customers are provided with information of the environmental effect of the products and they can and use this information while deciding which product to purchase (Yogita Sharma, 2011)[1]. Green Marketing can be termed as a process of safeguarding the nature or environment by making the customer to use or consume those products which do not harm the environment. It can also be defined as the process by which every human is doing his bit to have a sustainable environment

The evolution of green marketing can be divided in three phases:

1. The first phase was termed "Ecological" green marketing. During this period all marketing activities were concerned to solve environment problems and provide remedies for such problems.
2. The second phase was "Environmental" green marketing and the focus shifted to clean technology that involved designing of innovative new products, which takes care of pollution and waste issues.
3. The third phase was "Sustainable" green marketing. It came into prominence in the late 1990s and early 2000.

Many studies reveal that consumer concern about the environment has steadily increased all over the world in the past two decades. These studies are mainly carried out in highly developed countries which are major contributors to environmental degradation. There is a need of such a research in developing countries like India. As per Copenhagen Climate Talks on 5th Dec. 2009, India is one of the world's biggest emitters of carbon dioxide - a greenhouse gas blamed for global warming. The present study includes selection of a sample from Pune in India, and tries to establish the relationship between age, gender and purchase of green products.

II. REVIEW OF LITERATURE

Michal, Tarrant and Cordell(1997)[2] indexed five different environmental attitude scales on an 11-item self-reported general environmental behavior index derived from a confirmatory factor analysis. Correlations between each of the 5 attitude scales and the behavioral index were computed and a Fisher's Z-transformation was used to test for the effect of six respondent characteristics (gender, residence, education, income, age, and political orientation) on the attitude-behavior correlations. Although all of the five scales were significantly correlated with the behavioral index ($p < .001$), correlations for some attitude scales were highly affected by respondent characteristics.

Mainieri, Barnett, Valdero, Unipan and Oskamp(1997)[3] investigated the variables that predict "green buying" (i.e., buying products that are environmentally beneficial). Predictor variables included awareness about environmental impacts of products, specific environmental beliefs of consumers, several general environmental attitude scales, demographic variables, and several pro environment behaviors other than buying behavior. A written questionnaire, mailed to randomly selected residents of 8 middle-class communities in the Los Angeles area, was answered by 201 respondents. The results of hierarchical multiple regression analyses supported the hypotheses under study: Specific consumer beliefs predicted several green-buying variables as well as general environmental attitudes, whereas general environmental attitudes predicted only one aspect of green buying. Women were significantly higher than men on two aspects of green buying and on the environmental attitude scales. Home ownership was positively related to recycling behavior.

Karns and Khera (1983)[4] reported a longitudinal analysis of residential energy conservation by residents in a medium size U.S. metropolitan community. Mail panel surveys were conducted during winter months of 1979, 1980, and 1981. The results were presented in the form of a multivariate causal model with cross-lagged correlations over time. Perceptual, attitudinal, and behavioral variables were found to be the major causal factors with certain other variables having secondary effects.

Role of Income

One's income level has a positive relation with environment sensitivity. Individual with high income will raise the cost to support environmental sustainability and to buy eco-fiendly products. Income as predictor of environmental awareness relates with affect-ecological contraction, ecological knowledge and premium price of eco-friendly products has been reported by Straughan & Robert(1999)[5]. Previous research findings show that there is an inconsistence in the relation between environmental awareness with level of income. Middle class have met their basic needs and start to focus on human existence aspects. According to Buttel and Flin, the lower class society stays in high polluted environment and work in a bad environment with poor facility so that they hope to improve their environment. In general, social classes tend to give a positive influence towards environmental awareness and commitment has been shown by Ling-yee (1997)[6].

Some studies illustrate that income level plays a role in predicting environmental awareness related to a person's attitude contraction towards the environment. The relation between income growth and quality of environment is a fundamental issue in environmental economics. One's level of income influences the willingness to pay marginally higher prices as a social responsibility towards the environment. Empirical studies in countries with low income per capita do not show any improvement in the willingness to spend more on eco-friendly products has been reported by Bloom &Sevilla(2004)[7]. Therefore, the income level moderates the relations between consumers behavior towards the environment with their willingness to consume eco-friendly products.

Role of gender

Environmental concern is still not a strong motive for majority of well educated respondents to purchase eco-friendly products. Shila Shahnaei (2012)[8]found out that Educational Level has significant effect on green purchasing among Malaysian consumers whereas gender and age don't have relationship with the purchase behavior.

Ruiz, Arcas and Cuestas (2001)[9] argued that gender plays an important role to be consumerists and environmental conscious consumers.Some of the research shows that male are being predominant in the concern towards environment and thereby towards the purchasing behaviour.

Role of age

Panni (2006) [10] found that consumers' pro-social or pro-ethical behaviors are heavily influenced by demographic characteristics in terms of age, income level, education level and occupation.

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Objectives of this study are as follows:

1. To study the relationship between age and purchase of Green products, if it exist.
2. To study the relationship between gender and purchase of Green products, if it exist.

The hypotheses are formulated as follows:

H^1_o: There is no relationship between age and purchase of Green products.

H^2_o: There is no relationship between gender and purchase of Green products.

III. RESEARCH METHODOLOGY

The Sample Size of 100 was selected. Stratified random sampling method was employed to select the respondents, from Pune city. A Survey method was employed and a structured questionnaire was developed to collect the primary data. The questionnaires consist of two parts. Part -1 is related to asking personal information of the respondent. The Part - 2 consist of 5 closed end questions related to the purchase behaviour. Likert scale was used for these questions. The responses to the 5 purchasing statements was measured on a 5 point frequency purchase scale (1="Never", 5= "always")

IV. RESULTS AND DISCUSSION

The profile of the respondents is as mentioned in the Table No.-1 given below. The questions included in the questionnaire to study Consumer Behaviour with respect to green products have been shown in Table No.-2. For data analysis SPSS was used and chi-square test was used to analyze the data.

Table No.1 Profile of the respondents

S No.	General Information	Number	Percentage
1	**Age in Years**		
	a. 19-29	20	20
	b. 30-39	30	30
	c. 40-49	26	26
	d. 50 and above	24	24
2	**Gender**		
	Male	40	40
	Female	60	60

Table No.2 Questions related to the consumer behaviour with respect to green products

S No.	Question	5 point scale
1	I try to use products and brands of companies which are green conscious.	1="Never",5= "always"
2	Whenever possible I try to avoid the usage of plastic bags.	1="Never",5= "always"
3	I tend to buy health & beauty products made from nature & not tested on animals	1="Never",5= "always"
4	I try to buy products which do not harm the environment	1="Never",5= "always"
5	I prefer to buy energy efficient lights.	1="Never",5= "always"

Testing of the Hypothesis H^1_o

To see the relationship between age and purchase of Green products a Chi-Square test was conducted. For accuracy purpose, each question was compared with age and Chi-Square was calculated.

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Table No.3 Calculation of Chi-Square for Question No.1

For question 1 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.055E2[a]	6	.000
Likelihood Ratio	115.119	6	.000
Linear-by-Linear Association	17.445	1	.000
N of Valid Cases	100		

a. 1 cells (8.3%) have expected count less than 5. The minimum expected count is 4.80.

Table No.4 Calculation of Chi-Square for Question No.2

For question 2 Chi-Square calculations is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.142E2[a]	6	.000
Likelihood Ratio	123.856	6	.000
Linear-by-Linear Association	16.873	1	.000
N of Valid Cases	100		

a. 1 cells (8.3%) have expected count less than 5. The minimum expected count is 4.80.

Table No.5 Calculation of Chi-Square for Question No.3

For question 3 Chi-Square calculations is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	81.933[a]	6	.000
Likelihood Ratio	87.259	6	.000
Linear-by-Linear Association	.100	1	.752
N of Valid Cases	100		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.20.

Table No.6 Calculation of Chi-Square for Question No.4

For question 4 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.793[a]	9	.290
Likelihood Ratio	13.591	9	.138
Linear-by-Linear Association	1.217	1	.270
N of Valid Cases	100		

a. 9 cells (56.3%) have expected count less than 5. The minimum expected count is 2.00.

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Table No.7 Calculation of Chi-Square for Question No.5

For question 5 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	104.391[a]	9	.000
Likelihood Ratio	116.336	9	.000
Linear-by-Linear Association	3.088	1	.079
N of Valid Cases	100		

a.8 cells (50.0%) have expected count less than 5. The minimum expected count is 1.60.

From the above tables of calculation of Chi-Square for all the value of p is less than 0.05, except for question no.4. Hence we reject the null hypothesis that there is no relationship between age and purchase of Green products.

Testing of the Hypothesis $^{2}_{o}$

To see the relationship between gender and purchase of Green products a Chi-Square test was conducted. For accuracy purpose, each question was compared with age and Chi-Square was calculated.

Table No.8 Calculation of Chi-Square for Question No.1

For question 1 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.464[a]	2	.107
Likelihood Ratio	4.676	2	.097
Linear-by-Linear Association	2.906	1	.088
N of Valid Cases	100		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.60.

Table No.9 Calculation of Chi-Square for Question No.2

For question 2 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.744[a]	2	.254
Likelihood Ratio	2.755	2	.252
Linear-by-Linear Association	2.513	1	.113
N of Valid Cases	100		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.60.

TableNo.-10 Calculation of Chi-Square for Question No.3

For question 3 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.834[a]	2	.089
Likelihood Ratio	4.874	2	.087
Linear-by-Linear Association	4.177	1	.041
N of Valid Cases	100		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.40.

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TableNo.-11 Calculation of Chi-Square for Question No.4

For question 4 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.111[a]	3	.774
Likelihood Ratio	1.121	3	.772
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	100		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 4.00.

TableNo.-12 Calculation of Chi-Square for Question No.5

For question 5 Chi-Square calculation is as follows

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.003[a]	3	.012
Likelihood Ratio	11.150	3	.011
Linear-by-Linear Association	.007	1	.936
N of Valid Cases	100		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 3.20.

From the above tables (Table No.8 to Table No. 12) of calculation of Chi-Square, the value of p for all the questions is greater than 0.05. Hence we accept the null hypothesis that there is no relationship between gender and purchase of Green products.

V. CONCLUSION

It is everyone's responsibility to preserve the nature for the future generations to come. This research paper has tried to profile the green consumers in context of people in Pune. Many such studies have been conducted in the western world, but unfortunately very little research work has been carried out in developing countries like India. Hence this study was conducted. In this research paper the relationship between gender, age and purchase of green products has been studied with respect to consumers in Pune. The data analysis showed that there is relationship between age and purchase of green products. However there was no relationship found between gender and purchase of green products. There is further scope to find other characteristics associated with purchase of green products. Such a profiling would be of great help to the Marketer's of green products.

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