THE LINK BETWEEN DEMOGRAPHIC VARIABLES AND AWARENESS REGARDING ECO-FRIENDLY PRODUCTS

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Abstract

Globally people are becoming more aware of environmental problems and safety. Many consumers now express concern about environmental deterioration. With regards to this consumers are taking responsibility and doing the right things for their environment but compared to consumers of developed countries, the Indian consumer has much less awareness of issues like global warming, deforestation, Ozone depletion, climate, etc. 'Going green' may be a solution for such environmental problems. But it can be possible by awareness in every person in the country. This paper focuses on the relationship between demographic variables and awareness regarding Eco-friendly products.

In order to study the research motives, both type of data e.i. secondary and primary data have been gathered and analyzed. The primary data of 522 respondents of Madhya Pradesh was collected through a self-administered questionnaire. For analyzing the primary data statistical tools like Means, standard deviation, and ANOVA are used.

This study advocates that the awareness level regarding green products are significantly related to demographic variables. It also specifies that age, qualification, and income of the individuals are related to the awareness about green products, whereas gender and marital status of individuals are not. This study suggests that education can play an important role in spreading awareness regarding green products and every individual, company, and the government should adopt a 'going green' approach.

Keywords *– Green product, Green Marketing, Going green*

1. Introduction

"Education is not just about going to school and getting a degree. It's about widening your knowledge and absorbing the truth about life." - **Shakuntala Devi**

In the past few decades, the green movement has been evolving at a rapid pace in the world. With regards to this consumers are taking responsibility and doing the right things for their environment**.** Consumer awareness and consciousness regarding the environment drive the innovative change in the marketplace, notably through the introduction of more eco-friendly products. Compared to consumers in developed countries, the Indian consumer has much less awareness of issues like global warming, deforestation, Ozone depletion, climate, etc.

Consuming pattern of human beings has been becoming a matter of discussion in the present scenario for ecology and society as a whole. Due to such consumption pattern by human beings, it can be estimated that the graph of utilization of natural resources in the future after 30 to 40 years will be very much exhausted. If the present scenario continues then it is also very dangerous or harmful for human health. As we know that pollution level of Delhi and other cities are increasing at a rapid rate. 'Going green' may be a solution for such environmental problems.

Going green is defined as making more environmentally friendly decisions such as to "reduce, reuse and recycle." But it can be possible by awareness in every person in the country. This paper focuses on the relationship between demographic variables and awareness regarding Eco-friendly products.

2. Need for the study

India is 2nd largest population in the world and one-seventh person of the total population on this planet live in India. 16% of the world's population resides in India but only 2.4% of its land area, Therefore there is a critical effect on the natural resources. Now a day human is consuming natural resources in an unsustainable way. Approx 60% of the total population is youth and awareness in youth plays a crucial role in sustainable development. Through this research paper, it is tried to study how the level of awareness regarding green products is related to the demographic variables.

3. Review of literature

Green marketing term was first discussed in a seminar on "ecological marketing" organized by American Marketing Association (AMA) in 1975 and took its place in the literature and through the years many research related to green marketing is being done. Some of them related to the issue are reviewed.

Mahaeshwari, A. and Malhotra, G. (2011) have studied on the youth to study factors affecting their behavior towards the environment in which concluded that education plays an important role in awareness. Moyer (1977) studied on students about environmental attitude and its measures found education affect the attitude.

Shahnawaj (1990) focused on environmental awareness and environmental attitude of secondary and higher secondary school teachers and students and Astalin, P. Kumar (2011) also studied environmental awareness among higher secondary students and some educational factors affecting. Environmental awareness has been studied with respect to the scientific attitude among higher secondary students of Varanasi city (Bharti Anita, 2002) and found that the level of awareness in students from the different stream is the same.

Singh (2005) studied the scientific phenomenon between holistic education and environmental awareness. None of these tried to conduct the comparative study between Level of awareness and level of education. On the basis of a review of the above literature conceptual framework is designed.

4. Motives of the Study

The following are the objectives to conduct this study:
1) To examine the level of awareness of respondents regarding the Green Product.
2) To study the level of awareness of respondents regarding Green Product across demographic variables

5. Research Methodology

In order to study the research motives, both type of data e.i. secondary and primary data have been gathered and analyzed. Research process begins with a wide search of national and international research papers, reports, various websites, articles, and related information from newspaper and magazines. The research design is prepared on the basis of analysis of secondary data why, what, and how primary data is collected and analyzed. The study was focused on the Bhopal city of Madhya Pradesh (India).

The primary data of 522 respondents of Madhya Pradesh was collected through a self-administered questionnaire. Five-point Likert scale (1,2,3,4 and 5) technique is used to analyze the variables. A convenience nonprobability sampling design is adopted in collecting the primary data. 550 consumers were approached with a structured questionnaire but 522 questionnaires found completely filled for further process. For analyzing the primary data statistical tools like Means, standard deviation, and ANOVA are used.

Hypothesis formation

Hypothesis H1 was formulated for testing differences in general awareness about Green Products across demographic variables.

Hypothesis

H1: "General awareness about Green Products doesn't differ across demographic variables"
- H1a: "General awareness about Green Products doesn't differ between males and females"
- H1b: "General awareness about Green Products doesn't differ across the different age groups"
- H1c: "General awareness about Green Products doesn't differ between people having different education level"
- H1d: "General awareness about Green Products doesn't differ across the different income groups"
- H1e: "General awareness about Green Products doesn't differ between married and unmarried"

6. Data Analysis and Interpretation

In order to analyze the basic demographic profile (Gender, Age, Qualification, Income, and Marital status) of the respondents surveyed, percentage and frequency description of the distribution of responses, are taken into consideration. The data of the respondents required for the research work have been shown in table 6.1.

Table – 6.1
Demographic description of the respondents

S.N.	DEMOGRAPHICS	CATEGORY	NUMBER	(%)	Mean	Std. Deviation
1	GENDER	Female	198	37.9	2.9784	.88477
		Male	324	62.1	3.0152	.99988
2	AGE	18 – 25 Years	131	25.1	2.8015	.91500
		26 – 40 Years	170	32.6	2.9353	.91110
		41 – 60 Years	159	30.5	3.1635	.96045
		60 + years	62	11.9	3.1129	.85132
3	QUALIFICATION	High School or Below	53	10.2	2.7925	.88488
		Higher Secondary	74	14.2	2.7838	.92559
		Graduate	143	27.4	3.0070	.76450
		Post Graduate	146	28.0	3.0959	.88924
		Others (CA, Ph.D. etc.)	106	20.3	3.0755	1.16044
4	MONTHLY INCOME	Below 25,000	166	31.8	2.7771	.89697
		25,001 – 50,000	182	34.9	3.0055	.97764
		50,001 – 1,00,000	69	13.2	3.2609	.96486
		1,00,001 – 1,50,000	61	11.7	3.1803	.80640
		Above 1,50,000	44	8.4	3.0682	.78940
5	MARITAL STATUS	Single	215	41.2	2.9661	.88901
		Married	307	58.8	3.0140	.96235

The relationship between general awareness of respondents regarding Green products and Demographic Variables

The study analyzed the relationship between general Awareness of respondents regarding Green Products and Demographic Variables. For the purpose of analyzing it, analysis of variance (ANOVA) was used where general awareness level about green products was taken as a dependent variable and on other side demographic variables were taken as independent variables. In the process of analysis selected demographic variables were chosen which are gender, age, educational qualification, monthly income, and marital status.

After calculating the mean score of general awareness regarding green products across the demographic variables, ANOVA (Analysis of variance) was employed to compare mean scores. The results of the ANOVA test are summarized in table 6.2.

Table 6.2
ANOVA between awareness level and demographic variables

Demographic Variables	Variations	Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	.166	1	.166	.192	.661
	Within Groups	449.803	520	.865		
	Total	449.969	521			
Age	Between Groups	10.883	3	3.628	4.280	**.005**
	Within Groups	439.086	518	.848		
	Total	449.969	521			
Educational Qualification	Between Groups	7.665	4	1.916	2.240	**.014**
	Within Groups	442.304	517	.856		
	Total	449.969	521			
Monthly Income	Between Groups	15.106	4	3.776	4.490	**.001**
	Within Groups	434.864	517	.841		
	Total	449.969	521			
Marital Status	Between Groups	.296	1	.296	.343	.558
	Within Groups	449.673	520	.865		
	Total	449.969	521			

According to the results of ANOVA, three demographic variables were found significant i.e age, monthly income, and educational qualification, whereas gender and marital status were found insignificant in explaining the differences in the level of general awareness of respondents regarding green products. Subsequently, for the purpose of examining the in-depth comparisons between different groups Bonferroni ad hoc test was used. The relationship between the level of general awareness and the demographic variable has been explained one by one in the following points:

a) Level of general Awareness and Gender: The mean response of male respondents' general awareness about green products was compared with female respondents using ANOVA. As per the table, F value was .192 and p-value was .661 (p>.05). It means that male respondents' general awareness about green products was not significantly different from females. Hence, the hypothesis H1a "General awareness about Green Products doesn't differ between males and females" was accepted. It can be said that male and female are equally aware of green products.

b) Level of general Awareness and age: According to the results of ANOVA, F value was 4.280 and p-value was .005 (p<.05) which shows that there was a significant difference in respondents' general awareness across the different age groups. This further inferred that respondents' general awareness about green products varied with the age. Therefore, the hypothesis H1b was rejected.

The Bonferroni ad-hoc test was employed to explore the in-depth comparisons between groups. Table 6.3 comprises the results of the Bonferroni ad-hoc test. It reveals that the respondents belong to the age group 18-25 years found significantly different (p<.05) from respondents belonging to the age group 41-60 which is represented by the mean difference(I-J) of both categories i.e. **-.36200**. Thus, it can be understood that the age group 18-25 years was comparatively less aware than age group 41-60 regarding green products.

Table 6.3
Bonferroni ad-hoc test for awareness level and age

Demographic Variables	(I) Qualification	(J) Qualification	Mean Difference (I-J)	Std. Error	Sig.
Age	18 – 25 Years	26 – 40 Years	-.13377	.10704	1.000
		41 – 60 Years	**-.36200***	.10864	**.006**
		60 + years	-.31138	.14192	.172
	26 – 40 Years	18 – 25 Years	.13377	.10704	1.000
		41 – 60 Years	-.22823	.10157	.150
		60 + years	-.17761	.13659	1.000
	41 – 60 Years	18 – 25 Years	**.36200***	.10864	**.006**
		26 – 40 Years	.22823	.10157	.150
		60 + years	.05062	.13785	1.000
	60 + years	18 – 25 Years	.31138	.14192	.172
		26 – 40 Years	.17761	.13659	1.000
		41 – 60 Years	-.05062	.13785	1.000

c) Level of general Awareness and Education Qualification: The mean score of respondents' awareness regarding green products was compared across the different education qualification groups using ANOVA. According to the table, F value is 2.240 and p-value is .014 (p<.05). It means that there is a significant difference in the level of awareness of respondents having a different level of educational qualification. Hence, the hypothesis for the H1c is rejected. The Bonferroni ad-hoc test was applied to study the in-depth comparisons between groups(table 6.4)

Table 6.4
Bonferroni ad-hoc test for awareness level and Qualification

Demographic Variables	(I) Qualification	(J) Qualification	Mean Difference (I-J)	Std. Error	Sig.
Qualification	High School or Below	Higher Secondary	.00867	.16644	1.000
		Graduate	**-.21454***	.14874	**.004**
		Post Graduate	**-.30344***	.14833	**.013**
		Other (CA, Ph.D. etc.)	**-.28302***	.15560	**.030**
	Higher Secondary	High School or Below	-.00867	.16644	1.000
		Graduate	**-.22321***	.13245	**.021**

		Post Graduate	**-.31211***	.13199	**.004**
		Other (CA, Ph.D. etc.)	**-.29169***	.14011	**.012**
	Graduate	High School or Below	**.21454***	.14874	**.004**
		Higher Secondary	**.22321***	.13245	**.021**
		Post Graduate	-.08890	.10882	1.000
		Other (CA, Ph.D. etc.)	-.06848	.11855	1.000
	Post Graduate	High School or Below	**.30344***	.14833	**.013**
		Higher Secondary	**.31211***	.13199	**.004**
		Graduate	.08890	.10882	1.000
		Other (CA, Ph.D. etc.)	.02042	.11803	1.000
	Other (CA, Ph.D., etc.)	High School or Below	**.28302***	.15560	**.030**
		Higher Secondary	**.29169***	.14011	**.012**
		Graduate	.06848	.11855	1.000
		Post Graduate	-.02042	.11803	1.000

The results of the Bonferroni ad-hoc test reveals that respondents having education qualification up to high school and higher secondary were found significantly different from graduates, postgraduates and professional degree holders' respondents. These results show that respondents having education qualification up to high school and higher secondary are less aware than graduates, postgraduates and professional degree holders' respondents regarding green products.

d) Level of general Awareness and Monthly Income: The relationship between monthly income and level of awareness regarding green products was analyzed using ANOVA. According to table 6.5, the F value is 4.490 and p-value is .001 ($p<.05$). The results of ANOVA suggested that there is a significant difference across the different income groups' respondents. Hence, the hypothesis for the H1d is rejected.

The Bonferroni ad-hoc test is used for multiple comparisons between groups. The results show that the respondents having a monthly income up 25,000 were found significantly different from those having monthly income 50,000 – 100,000 and 100,000 – 150,000. It advocates that respondents having monthly income 50,000 – 100,000 and 100,000 – 150,000 are more aware than respondents having a monthly income up 25,000 regarding Green products.

Table 6.5
Bonferroni ad-hoc test for awareness level and Income

Demographic Variables	(I) Monthly Income	(J) Monthly Income	Mean Difference (I-J)	Std. Error	Sig.
Monthly Income	Below 25,000	25,001 – 50,000	-.22839	.09843	.207
		50,001 – 1,00,000	**-.48376***	.13137	.003
		1,00,001 – 1,50,000	**-.40322***	.13732	.035
		Above 1,50,000	-.29107	.15551	.618
	25,001 – 50,000	Below 25,000	.22839	.09843	.207
		50,001 – 1,00,000	-.25538	.12966	.494
		1,00,001 – 1,50,000	-.17483	.13569	1.000
		Above 1,50,000	-.06269	.15407	1.000
	50,001 – 1,00,000	Below 25,000	**.48376***	.13137	.003
		25,001 – 50,000	.25538	.12966	.494
		1,00,001 – 1,50,000	.08054	.16118	1.000
		Above 1,50,000	.19269	.17694	1.000
	1,00,001 – 1,50,000	Below 25,000	**.40322***	.13732	.035
		25,001 – 50,000	.17483	.13569	1.000
		50,001 – 1,00,000	-.08054	.16118	1.000
		Above 1,50,000	.11215	.18140	1.000
	Above 1,50,000	Below 25,000	.29107	.15551	.618
		25,001 – 50,000	.06269	.15407	1.000
		50,001 – 1,00,000	-.19269	.17694	1.000
		1,00,001 – 1,50,000	-.11215	.18140	1.000

e) Level of general Awareness and Marital status:

The mean score of respondents' awareness about green products was compared between married and unmarried respondents using ANOVA. According to the table F value is .343 and p-value is .558 (p>.05). The results of ANOVA suggested that there is no significant difference between married and unmarried respondents. Hence, the hypothesis for the H1e is accepted.

Overall H1 "General awareness about Green Products doesn't differ across demographic variables" rejected because apart from gender and marital status General awareness about Green Products differs across age, education qualification, and monthly income.

7. Findings of the study

This study advocates that the awareness level regarding green products are significantly related to demographic variables. The results of the study reveal that age, qualification, and income of the individuals are related to the awareness about green products, whereas gender and marital status of individuals are not. It is found that the level of awareness regarding green products increases along with the increasing age. Same as age, awareness regarding green products also increases along with the increasing qualification. This study finds that people belong to the high-income group are having a good amount of knowledge about green products.

8. Conclusion

We are looking for "Green Prosperous India" which is still a dream but it can be true by "Going Green" and it can be possible by green awareness. Our country's most valuable asset is youth but the level of awareness regarding the green product of youth is still in a nascent stage and is yet to pick up. The study shows that Green awareness of youth is not exaggerated so that they can't take decision for buying green products. The study also throws light on the importance of education of people with respect to their awareness regarding environmental issues and green products. Global environmental issues are not solved within the four walls of a scientist's laboratory. It can be solved by adopting a 'going green' approach by every individual, company, and government.

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