

The impact of innovation, green advertising and perceived behavioral control on green consumer behavior

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Abstract: The purpose of the study is to understand the impact of demographic and psychographic variables on green consumer behavior. This paper explains whether innovative behavior had a positive impact on the green consumer behavior. A structured questionnaire was used for primary data collection and secondary data was gathered from journals, books and electronic sources. The sample size for the study is 130. The statistical tools like ANOVA, regression analysis and descriptive statistics were implemented for data analysis. It is found from the study that green consumer behavior is positively influenced by green advertisements and perceived behavior control. The impact of demographic variables like age, gender and occupation etc on green consumer behavior is studied in this paper. This study provides insights for the markets, government and consumers who are interested in green marketing. This paper also provides ideas for future researchers in the field of green marketing.

Keywords: Green consumer behavior, ecological behavior, innovative behavior, green marketing, eco-friendly behavior, sustainable behavior

INTRODUCTION

The environment had become a biggest issue in the present world. It is evident from the recent natural disasters that environment is not fine. The major issues with the environment are global warming, extreme climates, depletion of ozone layer and pollution etc. These issues are negatively influencing the life of mankind on this planet. In this regard the present study is about the green consumer behavior had been selected. Green marketing is steadily growing in the recent years. Even though research about green marketing initiated in 1970s but still it is at a nascent state in India. The scope of green marketing had becoming broad in the present scenario. Consumer behavior is a complex thing to understand and this paper explains the consumer behavior from the perspective of innovative behavior, environmental advertising, perceived behavioral control and ecological conscious consumer behavior. The interrelationship between these variables is tested by using an empirical data. The green marketing is supported by environmental legislations and various government agencies like National Green Tribunal etc. Recently in India the central government had taken decision to use CFL bulbs for street lighting and replacement of traditional bulbs. The businesses especially in retailing sector are collecting price for carry bags in order to encourage green behavior among their respective customers. Previously these carry bags

from organized retail outlets are free of cost. Further these carry bags are being made from jute because they are environmental friendly. The consumers represent the green behavior from variety of activities in their regular life for example using public transportation system instead of personal vehicle reduces pollution and at the same it saves oil resources. The green marketing can be referred as sustainable marketing, ecological marketing, environmental marketing, and eco-friendly marketing. At present the 'green marketing' had become popular term while explaining about the marketing of green products. In this study the terms green consumer and ecological conscious consumer are interchangeable. In trying to establish relationship between environmental knowledge and green consumption, researchers are under the opinion that consumers with more environmental knowledge will have more desired for green products Baker [1].

GREEN CONSUMER BEHAVIOR

The scope of green marketing had enhanced therefore green consumer behavior can be related to behavior towards green products, practicing environmental conscious behavior etc. In traditional marketing the businesses are interested only consumer behavior towards their respective products but in green marketing the businesses, government and environmental agencies are interested in knowing the

consumer behavior towards the environment in general. It is assumed that ecological conscious consumers can become potential customers for green products in future. The environmental behavior is a daily phenomenon among the consumers in the society and it matters a lot. If the society at large adopts environment friendly behavior then environment can be less harmful in that society.

LITERATURE REVIEW

Green marketing includes wide range of activities like product modification, packaging changes, and modifying advertisements etc Polonsy [2]. Straughan & Roberts [3] had studied the impact of demographic variables and psychographic variables on ecologically conscious consumer behavior. D'Souza [4] had about the behavior of consumers with regard to eco-labeled products and mentioned that eco-labeling is a young concept and it can provide a significant increase in sales and market shares in future. Prakash [5] had stated that organizations need to provide information about their green practices which will have a positive impact on purchase behavior of consumers. Chamorro et al. [6] had made a survey on characteristics of research on green marketing by dividing the research studies into different categories which are concepts and strategies, recycling behaviors, macro marketing, and green consumer. Further Chamorro had mentioned that most of research had taken place in western countries. McDonald & Oates [7] had studied the view of consumers about the sustainable activities and mentioned that marketers can develop strategies based on the model suggested in the research work. Ottman [8] had described about the top environmental behavior of consumers which includes turnoff electronics when not in use, conservation of water, carpooling and taking own bag while shopping etc. Braimah & Tweneboah-Kouduah [9] in their research had found that that awareness about green issues should be enhanced so that it can positively impact their green purchase decisions. Bhattacharya [10] had made an investigation on consumer attitude towards green products and stated that consumers are not sure about the quality of products. Therefore marketers need to consider it and develop heavy promotional activities and communicate about the benefits of green products to the consumers. Sharma [11] had explained the green practices of various organizations like Philips, Unilever, and government initiatives like CNG buses in Delhi but mentions that lot of reformation should be done in the field of green marketing. Singh & Bansal [12] had studied consumer attitude and environmental concern from the perspective of green marketing and mentioned that significant number of people understands their responsibility towards the environment. Siringi [13] had studied the influence of factors on green consumer

behavior. The awareness about green products and product disposable behavior were analyzed to understand the green consumer behavior of post graduate teachers. Gupta [14] had studied the influence of demographic variables on purchase of consumers about environmental friendly products in Delhi. Mahapatra [15] had studied about the consumers' perception towards green products in India. The factors which influenced the perception of green consumers are personal benefit, price, ease of use, performance, availability, concern for environment and concern for health. Sarumathi [16] had developed a model to understand green purchase behavior. It is evident from the model that factors like environmental consciousness, environmental knowledge, awareness, beliefs and concern will form consumer attitude which further leads to intention and finally green purchase behavior. Yan & Yazdanifard [17] had explained the concepts of green marketing, and relationship between green marketing and consumer purchasing behavior further they have mentioned that how firms can overcome obstacles while implementing green strategies.

RESEARCH GAP

India is a developing country and second largest populated in the world. Most of earlier researchers in the field of green marketing had studied from the dimension of green products, consumer behavior, macro marketing, concepts and green marketing strategies. There is no specific study to understand the green behavior of consumers from the dimension of innovative consumers and green advertisements. This study fulfills the research gap and thereby contributing knowledge to the stakeholders of green marketing.

RESEARCH OBJECTIVES

1. To understand the relationship between demographic variables and green behavior of consumers.
2. To understand the relationship between psychographic variables (innovative consumers, green advertisements, perceived behavioral control and green consumer behavior).

RESEARCH METHODOLOGY

The primary data for the study is collected through structured questionnaire and secondary data is gathered from journals, magazines, and electronic sources. The questionnaire consists two parts. The first part collects information about demographic profile of consumers (gender, age, occupation, family monthly income, education and marital status). The second part of the questionnaire consists of four constructs. The items for each construct are adapted from the previous research works. The items were modified according to the need and objective of this study. The Statistical

Package for Social Sciences (SPSS) version 20.0 was used for data analysis. The major statistical techniques applied for data analysis are frequency analysis, descriptive statistics, one-way analysis of variance (ANOVA), correlation analysis and regression analysis. The dependent variable in the study is green consumer behavior (GCB) and the independent variables are innovative behavior (IB), green advertisements (GA), perceived behavioral control (PBC), green consumer behavior (GCB) and demographic variables. The statistical tool one way ANOVA is used to test the relationship between independent demographic variables and dependent GCB. Next, correlation and regression analysis was used to test the relationship between psychographic variables (IB, GA, PBC and GCB).

FORMULATION OF HYPOTHESIS

The hypotheses were formulated based on the existing literature and theoretical concepts of green marketing. The following are the four hypotheses for the present study.

- H1:** The demographic factors have a significant impact on the green behavior of consumers
- H2:** There is positive relationship between innovation and green consumer behavior
- H3:** There is a positive relationship green advertisements and green consumer behavior
- H4:** There is a positive relationship between perceived behavioral control and green consumer behavior.

MEASUREMENT SCALE DEVELOPMENT

The four constructs in the scale are (1) innovation with three items, (2) perceived behavioral control with three items, (3) green advertisements with

three items and (4) green consumer behavior with 6 items. The Likert - type 5 point scale is ranging '5' for 'strongly agree' to '1' for 'strongly disagree' was used to measure each item of the questionnaire. The items for green advertisement construct are adapted from Rahbar & Wahid [18], the items for innovation are adapted from Franziska [19], the items for perceived behavioral control are adapted from Jalilvand & Samiei [20] and items for green consumer behavior are adapted from Straughan & Roberts [3]. However these items are modified according to the Indian scenario. The detailed information about the items and their sources are shown in Table 16 in the appendix. A pilot study had been conducted by sending the questionnaire to academic and industry experts and necessary changes were made.

SAMPLING DESIGN

The target population for the study is any individual who is above 18 years. The initial respondents were selected based on convenience and later those were asked to refer others who are eligible to participate in the survey. Hence convenient and snowball sampling methods are used for data collection. The total sample size for the study is 130 who belong to Telangana State.

THEORETICAL FRAMEWORK FOR THE STUDY

The Figure 1 shows the theoretical framework for the study. The relationship between independent variables and dependent variables were tested based on the model. It shows that green consumer behavior is dependent variables and other factors as independent variables.

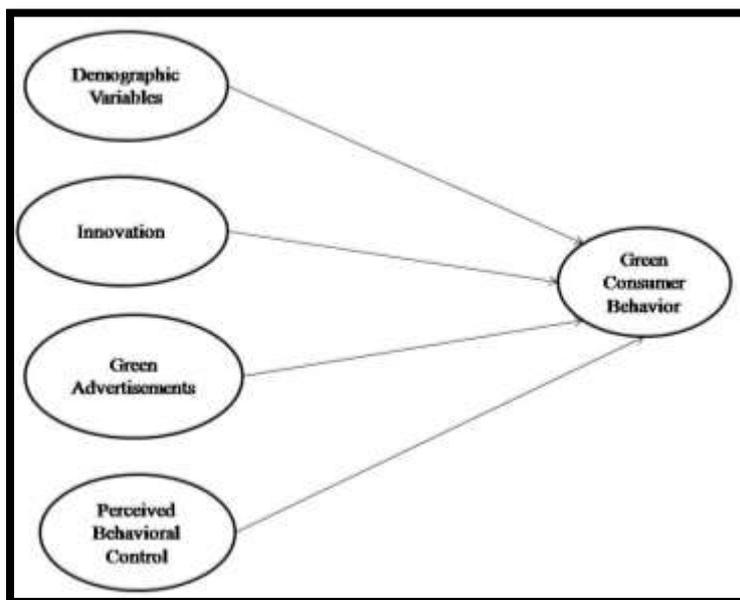


Fig-1: Theoretical Model for the study

DATA ANALYSIS AND RESULTS

The demographic profile of respondents is shown in Table 1. The variable in first part of the questionnaire collects details about demographic profile

of the respondent. The demographic variables in this study are gender, age group, education, occupation, family monthly income and marital status.

Table-1: Demographic Characteristics of Respondents

Characteristic		Percentage
Gender	Male	76.20
	Female	23.80
Age Group	18 – 24 years	33.10
	25 – 31 years	16.90
	32 – 38 years	27.70
	39 – 45 years	8.50
	Above 45 years	13.80
Education	Graduate	37.70
	Post Graduate	60.80
	Others	1.50
Occupation	Student	32.30
	Employee	56.90
	Self-Employed	1.50
	Others	9.20
Family Monthly Income	Less than 15,000 INR	20.80
	16,000 – 25,000 INR	31.50
	26,000 – 35,000 INR	5.40
	Above 35,000 INR	42.30
Marital Status	Married	46.90
	Unmarried	53.10

Source: Developed by the researcher by using SPSS output

RELIABILITY STATISTICS

The reliability of constructs can be measured by using the Cronbach's alpha. The value above 0.60 for each construct can be treated as reliable Malhotra & Dash, [21]. The scale reliability for fourteen items in part 2 of the questionnaire is 0.88 which is above the threshold value shows the reliability of the scale. Further the reliability for each construct is computed to know the whether the items are converging on their respective constructs. The cronbach's alpha values for IB, GA, PBC and GCB are 0.86, 0.85, 0.79 and 0.69 respectively. All these alpha values are above 0.60 which is benchmark value Malhotra & Dash [21].

TESTING OF HYPOTHESIS

H1: The mean value of green consumer behavior (GCB) is same among all the demographic variables.

One way ANOVA is conducted between the demographic variables and dependent factor GCB. The outputs of SPSS for all the six demographic variables are available in the appendix. From the analysis it is found that there is significant difference in the opinion of respondents from the perspective of gender, age group, occupation, income, education, and marital status. But mean values show that the difference is very low among the groups. The mean values, F-value and 'p' values are shown in the tables in the appendix from Table 4 to Table 15 for all the six demographic variables. The hypothesis H1 is rejected which means that different groups according to the demographic variables have different opinion towards green consumer behavior.

Table-3: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.078	.207		10.039	.000
	IB	-.062	.049	-.092	-1.257	.211
	GA	.220	.058	.317	3.813	.000
	PBC	.392	.058	.524	6.718	.000

a. Dependent Variable: GCB

H2: There is positive relationship between innovation behavior and green consumer behavior

The beta value for the IB is -0.092 and 'p' value is 0.211. It is evident that there is not positive relationship between innovative behavior and green consumer behavior. The values are shown in Table 3

H3: There is a positive relationship green advertisements and green consumer behavior

The beta value is 0.317 and 'p' value is 0.000 which is less than 0.05. Hence H3 is accepted which means there is a positive relationship between green advertisement and green consumer behavior. The values are shown in Table 3.

H4: There is a positive relationship between perceived behavioral control and green consumer behavior.

The beta value for PBC is 0.524 and 'p' value is 0.000 which is less than 0.05. Therefore H4 is accepted which means that perceived behavioral control has a positive relationship with green consumer behavior

DISCUSSION

The consumers are adopting green practices in their behavior because the mean value for gender variable is high. Even though ANOVA test states that consumers belonging to different groups do not have the same green behavior but the difference between the mean values is negligible. Hence from the perspective of demographic variables all the consumers are having similar environmental friendly behavior. Hence it is tough to differentiate the green behavior from the perspective of demographic variables like gender, age group, family income, occupation, education and marital status. But from the other side even though mean differences are low, there are some interesting findings like women have more green compared to men. The education level of employees had a positive relationship with green consumer behavior. The married people are more conscious about the environment than unmarried people. The mean values for all the demographic variables can be viewed from the tables in the appendix.

Green products are being marketed aggressively in the recent decades for well being of the environment. It is assumed that consumers who possess innovative behavior may show positive behavior towards green practices but the study had shown there is no significant impact of innovative behavior on green consumer behavior. The consumer behavior towards green advertisements had a positive impact on green consumer behavior. Hence it is understood that people who like green advertisements behave friendly towards the environment. The consumers who are able to

control their behavior towards green practices are showing positive green behavior. It means consumers are able to control their behavior for becoming environment-friendly.

CONCLUSION

The innovative behavior of consumers encourages green behavior among the consumers. The advertisements and perceived behavioral control helps the consumers to behave environment – friendly. The green behavior cannot be perfectly be explained by demographic variables because the awareness level among all the groups of people is equal. Consumers believe that advertisements about environmental protection and green products enhance their knowledge. The consumers are having the capability to control their behavior towards green practices. Their behavior can be made green if the businesses and government provides proper inputs at the right time for example giving subsidy for customers who purchase solar energy systems. In the recent years the media had become more powerful hence the government and businesses can use it for enhancing green behavior among the consumers. It will definitely give positive results because consumers are welcoming the green advertisements.

MANAGERIAL IMPLICATIONS

The marketers can promote green products because it can be assumed that green consumers also show positive behavior towards green products. The green behavior is not influenced by innovative behavior therefore everyone can become a potential green consumer in future. All the groups irrespective of their demographic profile can be targeted by marketers of green products. From the research it is evident that people have already adopted green practices in their daily life. Hence it would be easy for marketers to convince about the green products among the consumers.

LIMITATIONS OF THE STUDY

The sample size is 130 and it may not perfectly represent the target population. The time and cost were major constraints for the study. Only four psychological variables are used to explain the green behavior. In general consumer behavior is a complex phenomenon and many variables are required to describe the consumer behavior.

FUTURE RESEARCH

Consumer behavior can be explained by variety of psychological variables therefore future researchers can be conducted using different variables attitude, perception, and subjective norms etc. Further studies can be conducted to test the relationship between green consumer behavior and green purchase

intention for green products. The green purchase behavior of consumers can be studied for some selected products like green electronic appliances etc.

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APPENDIX

Table 4: Descriptive statistics for Gender

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Male	99	4.1515	.74674	.07505	4.0026	4.3005	1.00	5.00
Female	31	4.5032	.35729	.06417	4.3722	4.6343	3.80	5.00
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 5: ANOVA for Gender

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.920	1	2.920	6.392	.013
Within Groups	58.477	128	.457		
Total	61.397	129			

Table 6: Descriptive Statistics for Age Group

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18-24 Years	43	3.9163	.96336	.14691	3.6198	4.2128	1.00	4.80
25 - 31 Years	22	4.3000	.44828	.09557	4.1012	4.4988	3.80	5.00
32 - 38 Years	36	4.5667	.40988	.06831	4.4280	4.7053	3.40	5.00
39 - 45 Years	11	4.5091	.16404	.04946	4.3989	4.6193	4.40	4.80
Above 45 Years	18	4.0889	.37712	.08889	3.9013	4.2764	3.40	4.60
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 7: ANOVA for Age Group

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.632	4	2.408	5.815	.000
Within Groups	51.765	125	.414		
Total	61.397	129			

Table 8: Descriptive Statistics for Occupation

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Student	42	3.8667	.94189	.14534	3.5732	4.1602	1.00	5.00
Employee	74	4.4757	.42096	.04894	4.3781	4.5732	3.40	5.00
Self-employed	2	4.4000	.00000	.00000	4.4000	4.4000	4.40	4.40
Others	12	4.0167	.36639	.10577	3.7839	4.2495	3.40	4.40
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 9: ANOVA for Occupation

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.611	3	3.537	8.775	.000
Within Groups	50.786	126	.403		
Total	61.397	129			

Table 10: Descriptive Statistics for Family Income

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Less than 15,000 INR	27	3.7778	.96927	.18654	3.3943	4.1612	1.00	4.80
16,000 - 25,000 INR	41	4.4488	.50355	.07864	4.2898	4.6077	3.40	5.00
26000 - 35,000 INR	7	3.3429	.73679	.27848	2.6614	4.0243	2.60	4.40
Above 35,000 INR	55	4.4145	.40158	.05415	4.3060	4.5231	3.40	5.00
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 11: ANOVA for Family Income

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14.863	3	4.954	13.414	.000
Within Groups	46.535	126	.369		
Total	61.397	129			

Table 12: Descriptive Statistics for Education

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Graduate	49	3.9265	.90434	.12919	3.6668	4.1863	1.00	4.80
Post Graduate	79	4.4076	.42298	.04759	4.3129	4.5023	3.40	5.00
Others	2	5.0000	.00000	.00000	5.0000	5.0000	5.00	5.00
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 13: ANOVA for Education

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.186	2	4.093	9.769	.000
Within Groups	53.211	127	.419		
Total	61.397	129			

Table 14: Descriptive Statistics for Marital Status

GCB								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Married	61	4.3639	.43437	.05562	4.2527	4.4752	3.40	5.00
Unmarried	69	4.1217	.84172	.10133	3.9195	4.3239	1.00	5.00
Total	130	4.2354	.68989	.06051	4.1157	4.3551	1.00	5.00

Table 15: ANOVA for Marital Status

GCB					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.899	1	1.899	4.086	.045
Within Groups	59.498	128	.465		
Total	61.397	129			

Table 16: Sources of items for constructs

Construct	Items after modification	Source of items
Innovative Behavior (IB)	<ol style="list-style-type: none"> 1. If I see a product that is different from other, I usually test it 2. Usually I am among the first persons who test a new product 3. I like to test new and different things 	Franziska [19]
Green Advertisements (GA)	<ol style="list-style-type: none"> 1. Advertisements about green products enhance my knowledge 2. I enjoy watching advertisements about green products 3. Advertisements about green products guide customers to make an informed purchase decision 	Rahbar & Wahid [18]
Perceived Behavioral control (PCB)	<ol style="list-style-type: none"> 1. I can become green consumer 2. I have knowledge and ability to become green consumer 3. If I want to become green consumer, it would be easy. 	Jalilvand & Samiei [20]
Green Consumer Behavior (GCB)	<ol style="list-style-type: none"> 1. Whenever I buy paper products, I make every effort to buy paper products made from recycled paper 2. I will switch off lights when not in use 3. I like to carry own bag while shopping 4. I am interested to purchase a household appliance which consume less electricity than other brands 5. I have convinced members of my family or friends not to buy some products which are harmful to the environment. 	Straughan & Roberts [3]