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Consumer Awareness on Green Products – A Study With Reference to UDUPI District of Karnataka State

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ABSTRACT

Green consumption behavior is an essential requirement for long-term sustainable development of the Earth's civilization. Education is the strongest weapon to reach a socially and environmentally beneficial system of the society. Education always satisfies the sustainable development which cannot be achieved without industrial development. The increasing problems of climate changes and global warming along with environmental impact of companies have made more environmental sensitive. So there arises a need to reduce the collective carbon footprint.In thispaper researchers made an attempt to analyse the awareness of the consumer on green products.

Keywords: Green products, consumers, awareness, environment.

INTRODUCTION

For the last few decades, concerns over the different environmental issues are gaining attention of various groups of the society. Consumers are becoming more aware about the environmental problems and have started realizing that majority of issues are because of increasing population, our consumption habits and are the consequences of technological advancements. These awakened consumers are now ready to change their preferences from mainstream products to greener products which have least impact on the environment. Changing consumption habits and rising preferences of consumers for green products are proving to have greater influence on the corporate world also. "A green product is a product whose design and/or attributes (and/or production and/or strategy) use recycling (renewable/toxic-free/biodegradables) resources and which improves environmental impact or reduces environmental toxic damage throughout its entire life cycle" (Durif *et al,2010)*

NEED FOR THE STUDY

The scenario of changing consumer preferences and heightened consumer awareness for the environmental issues has given rise to an emerging green market where consumers with their favorable attitude towards green products are willing to shift their choices from brown counterparts to green products. They are becoming more responsible in terms of their life style, consumption habits and purchasing behavior. The present study is anattempt to study consumers' level of awareness on green products in the city of Udupi

OBJECTIVES OF THE STUDY

1. To study the level of awareness of consumers regarding green products.

2. To find out the association between education and awareness of green products.

RESEARCH METHODOLOGY

To achieve objectives of the study, the data was collected from 73 respondents belonging to Udupi citybased on convenience sampling. Primary data was gathered by preparing a questionnaire served through Google Forms. Section I of the questionnaire included demographic characteristics of the respondents. Section II of the questionnaire dealt with consumers' awareness regarding various dimensions of green products. The data collected was analyzed through frequency distribution tables, measures of central tendency and measures of dispersion, chi-square and ANOVA.

REVIEW OF LITERATURE

Chen & Chai(2010) examined gender differences and the factors influencing consumer attitudes towards green products. They found no significant gender differences but identified personal norms and government's role as key factors influencing attitudes. Personal norms emerged as the most influential factor, while environmental protection has a negligible impact. These findings contribute to a deeper understanding of consumer attitudes towards green products.

D'Souza, Taghian, Lamb, & Peretiatkos (2006) In their study found that customers' negative perceptions of green products were primarily influenced by their belief that companies prioritize profit over environmental concerns. Positive past experiences with green products were the only factor that improved customer perception. Other factors like product labels, packaging, and ingredients did not significantly impact customer perception. Additionally, customers were not willing to accept lower quality or higher prices for green products.

Frank & Brock (2018) The research investigated the impact of POS information on organic grocery purchases. It finds that product category involvement influences the effectiveness of POS information. In low-involvement categories, highlighting new features is crucial, while in high-involvement categories, perceived value for money is important. The study also explores the influence of POS information on perceived trust and knowledge among different consumer segments. Overall, the research contributes to understanding the factors that drive organic grocery purchases.

Joshi & Rahman (2015) concluded that environmental concerns, product attributes, environmental knowledge and subjective norms emerged as major drivers whereas high price, low availability and lack of consumer trust in green products emerged as major barriers towards purchase of green products

Mostafa (2006) His findings revealed that consumer with high and average environmental concern has increased level of Ecologically Conscious Consumer Behavior compared to consumer with low level of environmental concern. Hence, the study provides critical insights for action to policymakers and corporates for designing their communication strategies for succeeding in the indigenous Indian context.

Rajyalakshmi Nittala (2014) studied "Consumer Behavior of the Educated Segment in India" and concluded that the highest education of the university teachers does not guarantee a green purchase decision over quality and price. The government, companies, consumers, and the organizations working for the protection of the environment should pool their efforts to inculcate green consumer behavior among consumers in general and the educated segment in particular, as they can establish a trend that may be followed by other sections of society.

Satheesh Kumar (2017) In his study investigated the awareness of green banking among the general public, consumers, and bank employees. Chi-square analysis was employed to examine the relationship between bankers' motivation and the effectiveness of green banking initiatives. The research aimed to understand the current state of green banking awareness and its impact on sustainable development. He found that customers are showing a good degree of awareness level regarding green banking initiatives like online payment, avoiding paper work, online saving account, cash deposit system and net banking. But most of the respondents opined that, they are least aware of these modern facilities like green home equity loan, bank environment policy, green carloan, green commercial building loan and solar ATM.

Sirangi (2012) investigated green consumer behaviour of post graduate teachers of arts, commerce, science and technology and pharmaceutical sciences of Andhra Pradesh University, Andhra Pradesh, India. The study found that university teachers preferred Magazines and TV as most important sources of environmental information of products. Also, 82.5% respondents were found to be aware of all of the

green products. Quality was the primary factor which contributed the most in purchase decision, followed by price. 67.5% respondents reported that they buy green products, whereas 34% respondents were found to buy lowest priced products without taking into consideration their impact on the environment. Besides this, the study explored eight factors influencing green consumer behaviour viz. energy saving, eco-label, need for environmental information, shopping behaviour, purchase criteria, purchasing behaviour, preference of green outlet and awareness of green outlets.

Sreen, Purbey & Sadarangani (2018) found that 'Green purchase can have an impact on organization bottom line. It also helps to build a positive public image, brand, and goodwill in the marketplace. The purchasing intention for the green products varies across culture, gender and individual behavior of a person'.

Uddin & Khan, (2018) observed the impact of retail store preference and transportation mode on green purchase intention and sustainable consumption among young Indian consumers. It found that retail store preference positively influences green purchase intention while transportation mode negatively affects it. These situational factors explain over 27% of the variance in green purchase intention. Additionally, green purchase intention significantly predicts sustainable consumption, accounting for 63% of its variance.

LIMITATION OF THE STUDY
The present study was confined only to Udupi city. Therefore, the findingsof the study may not be applicable to other parts of the state and country.

ANALYSIS AND INTERPRETATION
The profile of sample explaining the demographic and occupational features of consumers is presented in the Table given below.

Table No.1: Age of the respondents

Years	Frequency	Percent
18-25	45	61.6
26-20	19	26.0
41-55	9	12.3
Total	73	100.0

Source: Primary data

Many of the respondents' range between age of 18 to 25 years.

Table No.2: Gender of the respondents

Gender	Frequency	Percent
Male	25	34.2
Female	48	65.8
Total	73	100.0

Source: Primary data

Gender-wise classification shows that out of the 73 respondents, males constitute 34 per cent and females 66 per cent.

Table No.3: Educational Qualificationof the respondents

Educational Qualification	Frequency	Percent
Under graduate	7	9.6
Graduate	4	5.5
Post Graduate	57	78.1
Doctorate	5	6.8
Total	73	100.0

Source: Primary data

Education-wise classification reveals that 78 percent of the respondents are post graduates.

Table No.4: Employment Statusof the respondents

Employment Status	Frequency	Percent
In service	37	50.7
Own business	2	2.7
Student	33	45.2

Homemaker	1	1.4
Total	73	100.0

Source: Primary data

51 percent of the respondents are employed and 45 percent of the respondents are students.

Table No.5: Monthly Incomeof the respondents

Monthly Income	Frequency	Percent
Less than Rs.10000	24	32.9
Rs10001 - 25000	26	35.6
Rs.25001 - 50000	2	2.7
Rs.50,000 - 75000	9	12.3
Rs.75001 - 100000	5	6.8
More Than Rs.100000	7	9.6
Total	73	100.0

Source: Primary data

The monthly income status of respondents reveals that 35.6 per cent are having monthly income of Rs10001 – 25000 and 32.9 percent are having monthly income of less than Rs10000.

Table No.6: Marital status of the respondents

Marital status	Frequency	Percent
Married	21	28.8
Unmarried	52	71.2
Total	73	100.0

Source: Primary data

Most of the respondents are unmarried (71 per cent).

Table No.7: No. of children of the respondents

No. of children	Frequency	Percent
One	8	11.0
Two	8	11.0
None	57	78.1
Total	73	100.0

Source: Primary data

Only 11 percent of the respondents have one and two children respectively.

Table No.8: Level of awareness of the respondents

Level of awareness	Frequency	Percent
Low	3	4.1
Average	55	75.3
High	14	19.2
Very High	1	1.4
Total	73	100

Source: Primary data

75.3 percent of the respondents are having average level of awareness on green products.

Awareness of Selected 5 Dimensions of Green Products Based on Education
The respondents have expressed their views on all these variables using 5- point Likert scale. With a view to verifying whether there is any difference in these expressed opinions among the respondents in the 5 dimensions, analysis of variance –the one-wayANOVA is done and the results are presented below along with the hypotheses.

Table No.9: Descriptive Statistics

Dimensions of green products			Benefits to health	Benefits to environment	Point of purchase	Brands offering green products	Symbols/certific ations of green products
Undergradu ate	N	Mean	2.86	3.14	3.00	2.57	2.00
	7	SD	.378	.378	.577	.535	1.000

Graduate	N	Mean	2.75	3.00	3.00	2.75	2.75
	4	SD	.500	.816	.816	.957	.957
Postgraduate	N	Mean	3.42	3.49	3.12	2.928	2.77
	57	SD	.565	.826	.683	.744	.926
Doctorate	N	Mean	3.40	3.20	3.00	2.20	2.00
	5	SD	.894	1.095	.707	.837	.000

Source: Primary Data

The hypothesis is stated as follows:

H₀: There is no variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products based on education category of respondents.

H₁: There is variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products based on education category of respondents.

Table no.10: ANOVA						
Dimensions of green products		Sum of Squares	df	Mean Square	F	Sig.
Benefits to Health	Between Groups	3.408	3	1.136	3.452	**.021**
	Within Groups	22.702	69	.329		
	Total	26.110	72			
Benefits to Environment	Between Groups	1.768	3	.589	.886	.453
	Within Groups	45.903	69	.665		
	Total	47.671	72			
Point of purchase	Between Groups	.188	3	.063	.135	.939
	Within Groups	32.140	69	.466		
	Total	32.329	72			
Brands offering green products	Between Groups	3.644	3	1.215	2.191	.097
	Within Groups	38.247	69	.554		
	Total	41.890	72			
Symbols/Certification of green products	Between Groups	5.955	3	1.985	2.412	.074
	Within Groups	56.785	69	.823		
	Total	62.740	72			

Source: Primary Data

Significant at 5 per cent level of significance

The level of awareness on the 5 dimensions of green products and educational qualification are relevant very much. The awareness on the benefits of green products on health, awareness on the benefits of green productsto environment,awareness on the point of purchase for green products,awareness on the brands offering green products, awareness of the symbols/certification which declare the product as green products and educational qualification of the respondents are analyzed with one way ANOVA to test the statistical significance of difference in the means scores of the above listed elements.

The result of the One-way ANOVA for the variables "educational qualification"across the 5 dimensions of green products. For the dimensionBenefits to Health F value is 3.452, which issignificant at 5 per cent level (p<0.05). Hence, the null hypothesis is rejected. This implies that there is variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products that is, benefits of green products on health based on education category of respondents. For the other dimensions like awareness on the benefits of green productsto environment,awareness on the point of purchase for green products, awareness on the brands offering green products, and awareness of the symbols/certification which declare the product as green products the corresponding F value of 0.886,0.135,2.191 and 2.142 are found to be not significant at 5 per cent level (p>0.05). Hence, the null hypothesis is not rejected. This implies that there is no difference in the mean scores obtained forthe variables related to awareness on selected dimensions of green products based on education category of respondents.

Level of Awareness on Green Products with 5 Dimensions of Green Products
The respondents have expressed their views on all these variables using 5- point Likert scale**.**With a view to verifying whether there is any difference in these expressed opinions among the respondents in the 5 dimensions, analysis of variance –the one-way ANOVA is done and the results are presented below along with the hypotheses.

Table no.11: Descriptives				
Dimensions of green products		N	Mean	Std. Deviation
Benefits to Health	Low	3	2.33	.577
	Average	55	3.25	.480
	High	14	3.71	.611
	Very High	1	5.00	
	Total	73	3.33	.602
Benefits to Environment	Low	3	2.67	.577
	Average	55	3.36	.802
	High	14	3.64	.745
	Very High	1	5.00	
	Total	73	3.41	.814
Point of purchase	Low	3	2.33	.577
	Average	55	3.00	.577
	High	14	3.57	.756
	Very High	1	4.00	
	Total	73	3.10	.670
Brands offering green products	Low	3	2.33	.577
	Average	55	2.76	.693
	High	14	3.43	.852
	Very High	1	3.00	
	Total	73	2.88	.763
Symbols/Certification of green products	Low	3	2.00	0.000
	Average	55	2.60	.894
	High	14	3.00	1.109
	Very High	1	2.00	
	Total	73	2.64	.933

Source: Primary Data

The hypothesis is stated as follows:

H_0: There is no variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products based on level of awareness on green products among respondents.

H_1: There is variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products based on level of awareness on green products among respondents.

Table no.12: ANOVA						
Dimensions of green products		Sum of Squares	df	Mean Square	F	Sig.
Benefits to Health	Between Groups	8.149	3	2.716	10.436	.000
	Within Groups	17.960	69	.260		
	Total	26.110	72			
Benefits to Environment	Between Groups	5.063	3	1.688	2.733	.050
	Within Groups	42.608	69	.618		
	Total	47.671	72			
Point of purchase	Between Groups	6.234	3	2.078	5.494	.002
	Within Groups	26.095	69	.378		
	Total	32.329	72			
Brands offering green products	Between Groups	5.868	3	1.956	3.747	.015
	Within Groups	36.023	69	.522		
	Total	41.890	72			
Symbols/Certification of green products	Between Groups	3.540	3	1.180	1.375	.258
	Within Groups	59.200	69	.858		
	Total	62.740	72			

Source: Primary Data

Significant at 5 per cent level of significance

The awareness on the 5 dimensions of green products and level of awareness on green products is an

interesting discussion.The awareness on the benefits of green products on health, awareness on the benefits of green productsto environment,awareness on the point of purchase for green products, awareness on the brands offering green products, awareness of the symbols/certification which declare the product as   green products and level of awareness on green products are analyzed with one way ANOVA to test the statistical significance of difference in the means scores of the above listed elements.

The result of the one-way ANOVA for the variables "awareness on the 5 dimensions of green products" across the 5 dimensions of green products. For the dimension Benefits to Health, Point of purchase,Brands offering green products F   values of10.436,5.494 and 3.747 respectively, which are significant at 5 per cent level (p<0.05). Hence, the null hypothesis is rejected. This implies that there is variation in the mean scores obtained for the variables related to level of awareness on selected dimensions of green products that is benefits of green products on health, awareness on the point of purchase for green products, awareness on the brands offering green products. For the other dimensions like awareness on the benefits of green productsto environment, and awareness of the symbols/certification which declare the product as   green productsthe corresponding F value of 2.733 and 1.375are found to be not significant at 5 per cent level (p>0.05). Hence, the null hypothesis is not rejected. This implies that there is no variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products based on level of awareness on green products among respondents.

TESTING OF HYPOTHESIS

H_0:There is no difference in preference as to emphasizing Green Product Dimension among respondents.

H_1:There is difference in preference as to emphasizing Green Product Dimension among respondents.

Table no.13: Descriptive Statistics

Dimensions of green products	N	Mean	Std. Deviation	Minimum	Maximum
Benefits to Health	73	3.33	.602	2	5
Benefits to Environment	73	3.41	.814	1	5
Point of purchase	73	3.10	.670	2	5
Brands offering green products	73	2.88	.763	1	5
Symbols/Certification of green products	73	2.64	.933	1	4

Table no.14: Ranks

Dimensions of green products	Mean Rank	Rank
Benefits to Health	3.49	2
Benefits to Environment	3.66	1
Point of purchase	3.03	3
Brands offering green products	2.60	4
Symbols/Certification of green products	2.21	5

(*Source:* Primary Data)

Table No 15: Friedman test on awareness on dimensions of green products

Test Statistics			
N	Chi-Square	Df	Asymp sig
73	81.939	4	**0.000***

(*Source:* Primary Data)

* Significant at 5 per cent level of significance

The X^2 statistic provides a valueof 81.939, which is significant at 5 percent level of significance(p=0.000<0.05). Therefore,the null hypothesis is rejected. This indicates variation in the awareness level of the respondents on green products. The dimension of green product which has the lowest mean rank is considered as the most important one, which is Benefits to Environment and the highest mean rank is least considered that is about the Symbols/Certification of green products.

MAJOR FINDINGS AND SUGGESTION

1. 75.3 percent of the respondents are having average level of awareness on green products.

2. There is variation in the mean scores obtained for the variables related to awareness on selected dimensions of green products that is, benefits of green products on health based on education category of respondents.

3. There is variation in the mean scores obtained for the variables related to level of awareness on selected dimensions of green products that is benefits of green products on health, awareness on the point of purchase for green products, awareness on the brands offering green products based on level of awareness on green products among respondents.

4. There is difference in preference as to emphasizing Green Product Dimension (Benefits to Environment) among respondents.

SUGGESTIONS

At present consumers are very concerned about health and environment.So, marketing communication should highlight the health and environmental benefits of green products extensively. Retail malls being the most preferred point of purchase, followed by local shops and specialized shops, manufacturers of the green products should ensure the consistent availability of green products at these outlets.

CONCLUSION

From the study it is understood that most of the respondents arehaving average level of awareness on green products. Education has an impact on benefits of green products on health. Awareness level of the respondents on green products with regard to "Benefits to Environment" is highest. The government, companies, consumers, and the organizations working for the protection of the environment should pool their efforts to inculcate green consumer behavior among consumers in general and the educated segment in particular, as they can establish a trend that may be followed by other sections of society.

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