A Study on Consumers Awareness and Consumption Regarding Green Products in Chennai

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Abstract: **With the growing hazards to the environment, "Being Green" is the need of the hour. To save our future generations from the deadly consequences of environmental damage, we need to take corrective steps and do some damage control. Green Marketing is one of the practices which prevents and minimizes the environmental degradation by promoting "Green Products" rather than "Conventional Non-Green Products"."Green Products are typically durable, non-toxic, made of recycled material, or minimally packaged"(Durif, Bolvin & Julien, 2010). The success of green products depends on its popularity among the consumers. This paper assesses the awareness level about Green Products and its consumption by the general consumers in the city of Chennai, India. Structured and undisguised form of questionnaire was prepared which was distributed to 120 respondents out of which 106 were found to be usable. The other variables of the questionnaire like perception and purchase intention are measured in other papers. Different hypotheses were formed based on literature review and statistical tools like frequency distribution, chi-square analysis, independent t test and correlation analysis were done to test the hypotheses. The study is useful to researchers, academicians, organizations and companies who are trying to get the insight of the awareness level and consumption of green products in Chennai. Geographical constraint is the limitation of the study which gives way to further research by applying the methodology used in this paper on country specific research awareness.**

Key words: Green products, green marketing, eco-friendly products, eco-friendly marketing etc.

INTRODUCTION

According to current survey by World Health Organization, Chennai is among the highest polluted cities of India and ranks 11th on global ranking (Joshi, 2016). There are various forms of pollution like air, water, soil, noise etc. and the reason being the irresponsible behaviour of the citizens. Never ending needs and wants of the consumers and mass production of goods by the producers is the main reason of all the environmental problems. Any product effects the environment at some point or the other in its entire life cycle. From production to its disposal, the products are detrimental to the environment. We can't change the root cause of this problem i.e. the need and desires of the people. But what we can change is how these needs and wants are getting fulfilled.

We can move from non-green products to green products, from conventional technology to green technology, from unsafe production to safe and green production, from excessive and toxic packaging to minimal and bio-degradable packaging. But all this is not possible unless there is awareness about such products to general consumers. It is also important that with such awareness consumers also tend to consume such products.

LITERATURE REVIEW

According to J. Karna et al., (2011), green marketing is one of the tools of sustainable development (as cited in Sharma & Trivedi, 2015). By producing safe products for theenvironment and society, eco-friendly packaging, being water and energy efficient; environment protection is the main goal of green marketing (Yazdarifard & Mercy, 2011). Maheshwari (2014) asserts that there are two facets of green marketing. One tells the importance of going green and another focuses on the strategies to spread the green message and create the awareness. It is of utmost importance to aware the consumers about green marketing in order to make them green. There are many definitions of Green Marketing which conveys almost the same meaning. "GreenMarketing is the marketing of those products which are safe for the environment and the society as a whole" (Sharma & Trivedi, 2016). This is the broad definition of green marketing. But there are lot of activities which holds under the concept of Green Marketing. The large range of activities include eco-friendly packaging, use of green technology, green promotions and distribution, use of eco-labels, green certification and reduction carbon footprint etc.

(Chitra, 2015). According to her, green products are made of recycled material, are energy efficient with eco-friendly packaging. One must also understand the concept of green products as well. In layman language, the products with less environmental impact and are safer to humans than other traditional products are called green products Shamdasami et al., (1993) said that green products are those that do not pollute the planet and are recyclable and do not exploit the natural resources (as cited in Chen and Chai, 2010). There are different names given to green products- Organic products, Eco-friendly products and Ecological products (Rawat, 2015). As Organic.org asserts that organic and animal products that are produced without the use of pesticides, chemicals, GMO, radiations, growth hormones and antibiotics are also called green products (as cited in Rawat, 2015). Summarising, about the attributes of green products following can be pointed:

Biodegradable
Low emitting
Energy efficient
Reused or reusable products
Water efficient
Durable
Safe and healthy
Renewable
Certified from third party

According to Starch (1999), worldwide there are 15% green consumers; Curlo (1999) said that there were 10% hardcore green consumers in UK (as cited in Chen & Chai, 2010). In a study done by Nagaraju and H.D (2014) in Mysore District of India, 21.7% completely know about green FMCG product, 66.7% somewhat know and 11.7% don't know.)n a similar study by Sudhalakshmi and Chinnadorai (2014) in Coimbatore district of India says that people in Coimbatore are aware about green FMCG products and about environmental problems as well. One study pointed out that India is the only country where the most important green issues are pollution and deforestation. (Shrikanth and Raju, 2012). And this makes green products necessary in India.
Saxena (2016) points out certain reasons that green marketing and green products are necessary in India and will be profitable to the firm: Consumers in India are becoming aware of the environmental damage and the hazards which plastic and other products are creating. And now they are insisting on green products. Aware consumers are forming a lobby to promote products. Companies' ecological activities

are becoming criteria for their performance. Since, consumers are going green the companies opting first to produce green products will have a first mover advantage and a competitive edge over other companies.

OBJECTIVES OF THE STUDY

- To study the awareness level of general consumers regarding Green Products in Chennai.
- To study the consumption pattern of consumers regarding Green Products in Chennai.
- To study the relationship between awareness level and consumption of green products in Chennai.

HYPOTHESES FOR THE STUDY

- H1) There is high awareness among consumers about Green products in Chennai.
- H2) There is no significant difference in the awareness level of males and females regarding Green products in Chennai.
- H3) Consumers did not significantly differ in the consumption pattern regarding different type of green products based on their gender.
- H4) There is no significant correlation between awareness level and consumption of green products.

RESEARCH METHODOLOGY

Data collection: A structured non-disguised form of questionnaire was constructed which was distributed to 120 consumers from Chennai. 106 responses out of this were found to be complete and usable for the study. Questionnaire consists of sixty items and is divided into five parts: Demographics, Awareness level about green products, Consumption pattern, Perception and Purchase Intention. This paper deals with awareness level and consumption pattern of green products. The questions were categorical, ordinal, interval and continuous in nature. Some of the constructs were measured on a five point Likert scale. All the questions were closed ended. Secondary data was also collected through different websites and online journals and articles to form a strong review of literature. Various newspaper articles and books were also referred.
Sampling Procedure: Random sampling is used to collect the data. The data is collected through self administered questionnaire by the researchers themselves. Sample was drawn from Chennai only.

Different areas were selected and respondents were targeted on a pure random basis.

Data analysis procedure: Various statistical techniques are used to analyse the data with the help of a SPSS. Percentages, means, chi-square test, independent t test and correlation analysis is done to test the hypotheses and finding out the results.

FINDINGS AND DISCUSSION

Demographic Profile of the respondents: The following tables from 1 to 6 show the demographic profile of the respondents in terms like gender, age, income level, education, marital status and occupation.

Table 1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	55	51.9	51.9	51.9
Valid Female	51	48.1	48.1	100.0
Total	106	100.0	100.0	

Table 2: Age

	Frequency	Percent	Valid Percent	Cumulative Percent
15-24	58	54.7	54.7	54.7
25-34	37	34.9	34.9	89.6
35-44 Valid	6	5.7	5.7	95.3
45-54	3	2.8	2.8	98.1
>55	2	1.9	1.9	100.0
Total	106	100.0	100.0	

Table 3: Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Intermediate	5	4.7	4.7	4.7
Undergraduate	61	57.5	57.5	62.3
Valid Postgraduate	38	35.8	35.8	98.1
Doctorate	2	1.9	1.9	100.0
Total	106	100.0	100.0	

Table 4: Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Married	20	18.9	18.9	18.9
Valid Unmarried	86	81.1	81.1	100.0
Total	106	100.0	100.0	

Table 5: Family Monthly Income

	Frequency	Percent	Valid Percent	Cumulative Percent
<30,000	21	19.8	19.8	19.8

30,001-60,000	27	25.5	25.5	45.3
Valid 60,001-90,000	33	31.1	31.1	76.4
>90,001	25	23.6	23.6	100.0
Total	106	100.0	100.0	

Table 6: Occupation

	Frequency	Percent	Valid Percent	Cumulative Percent
Job	31	29.2	29.2	29.2
Self-employed	13	12.3	12.3	41.5
Unemployed Valid	3	2.8	2.8	44.3
Student	58	54.7	54.7	99.1
HousewifeTotal	1	.9	.9	100.0
	106	100.0	100.0	

The data shows that 52% of the respondents were males and rest 48% were female. 54% of the respondents fall under the age of 15-24, 35% in 25-34 and rest were above 35 years of age. 57% of the respondents have graduate degree, 36% are postgraduates and 2% are doctorate. This shows that more than 90% of the respondents have 15 or more years of education. Most of the respondents are unmarried. 20% of respondents fall in low income group, 57% in middle income group and 24% belong to higher income group. This shows that nearly 80% of the respondents can afford to buy green products. Nearly half of the respondents were students (54.7%), 41% were either self employed or doing job and rest were unemployed. Reliability and Validity of the data: For the reliability of the questionnaire Cronbach's Alpha was carried out. The value was .976 which means the questionnaire was reliable. Table 7 shows the Reliability Statistics.

Table 7: Reliability Statistics

Cronbach'sAlpha	Cronbach's Alpha Based on Standardized Items	N of Items
.976	.976	60

For the adequacy of the sample KMO Measure of Sampling Adequacy was carried out and table 8 shows the result:

Table 8: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.924
Bartlett's Test of Sphericity	Approx. Chi-Square	618.259
	df	21
	Sig.	.000

The value is .924 which means that the sample was adequate.

Awareness level among consumers: To find out the awareness level of the consumers, frequency distribution with means was carried out.

Table 9: Are you aware of Green Products?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	82	77.4	77.4	77.4
Valid No	24	22.6	22.6	100.0
Total	106	100.0	100.0	

Table 9 shows the valid percentage of responses about the awareness of green product. The results show that 77.4% of the respondents said that they are aware of green products. 22.6% of the respondents said no to the question. The respondents who said yes were asked to proceed with the next question. The next question was regarding the characteristics of green products. The table 10 shows what respondents think about the characteristics of the green products

Table 10: Descriptive Statistics

		N	Mean	Std. Deviation
A	G.P. are Recyclable, Resuable and Biodegradable	82	1.16	.367
B	Safe and Healthy	82	1.35	.481
C	Water Efficient	82	1.68	.468
D	Energy efficient and low emitting	82	1.50	.503
E	Renewable	82	1.49	.503
F	Locally Grown/Made	82	1.79	.408
G	Not tested on animals	82	1.78	.416
H	Eco-Friendly Packaging	82	1.20	.399
I	Contents under approved chemicals	82	1.80	.399
	Valid N (listwise)	82		

According to results shown in the table 10 above, points A, B, E and H have 1.16, 1.35, 1.49 and 1.20 mean values respectively. This means that respondents think of 'these characteristics' when it comes to green products. While, points C, F, G and I have 1.68, 1.79, 1.78 and 1.80 mean values respectively. This shows that for the respondents these are not the characteristics of green products. Only one point D has mean value of 1.50 which means that half of the respondents think that it is the characteristic of green product while half think it is not. Frequency Distribution tables for the same are given in Appendix under Frequency Table 1. The respondents who were not aware of green products were asked to tick some of the activities in which they are involved. All the statements were related to purchase of green products or green activities. The following table 11 shows the involvement of the respondents in such activities:

Table 11: Statistics

	A	B	C	D	E	F
	Purchasing Products with less environment impact	Buying Energy Star labelled products	Avoiding products withaerosols	Purchasing recycled products	Buying organic products	Carry your ownshopping bag
Valid N	24	24	24	24	24	24
Missing	0	0	0	0	0	0
Mean	1.00	1.21	1.75	1.38	1.58	1.33
Std. Dn.	.000	.415	.442	.495	.504	.482

The results reveals that respondents are involved in activities like points A, B, D and F with mean values of 1.00, 1.21, 1.38, and 1.33 respectively but not in activities like C and E with mean values of 1.75 and 1.58. This means that consumers who said 'no' are not aware with the term 'green products' but they are involved in purchasing such products.

From the above findings, it is revealed that consumers might be aware of the term 'green products' (77.4%) but they are not aware with the 'concept' of green products. Nearly 80% of the consumers think that water efficient, locally grown/made, not tested on animals, energy efficient and low emitting and contents under approved chemicals are not the characteristics of green products. While on the other hand, these are as important characteristics as others. What they approve as the features of green products are easily identifiable as green.

Next, consumers who said 'no' are found to be involved in purchasing green products which means they don't know that what they are buying is a 'green product'. They are buying green products unknowingly. Based on the above data and findings, it can be said that H1: There is high awareness among consumers about Green products in Chennai, is rejected. Consumers are aware about the term but that does not qualify as high awareness about green products.

Source of awareness: The following table 12 shows the main source of awareness about green products:

Table 12: Statistics

	Social Media	News paper	Magazines	Family and Friends	Television	Ad Campaign /Awareness Campaign	Others
Valid N	82	82	82	82	82	82	82
Missing	0	0	0	0	0	0	0
Mean	1.41	1.65	1.77	1.71	1.60	1.65	1.84
Std. Deviation	.496	.481	.425	.458	.493	.481	.367

The data shows that social media tops the chart with a mean value of 1.41 and makes the main source of awareness about green products. While magazines rank the lowest. It can be inferred that marketers and producers of green products should focus on social media for spreading the awareness and marketing of their products instead of going for print media. Most of the young consumers spends almost 2-3 hours a day on social media and web surfing. Marketers should cash this opportunity and make it their main source of marketing the green products. See Appendix: Frequency Table:13 for percentages.

Awareness level regarding Green Products based on

Gender: Gender is one of the important demographic variables which affect the psyche, attitude, perception, knowledge and sensitivity of consumers towards any product. Males might like any particular product while females do not.In the same way, their awareness level also can be different towards any particular type of product. The second hypothesis tests this difference i.e. whether there is any difference in the awareness level of males and females regarding green products. To test the second hypothesis, chi-square analysis was done and the following results were analyzed:

Table 13: Gender * Are you aware of Green Products? Crosstabulation

			Are you aware of Green Products?		Total
			Yes	No	
Gender	Male	Count	42	13	55
		Expected CountCount	42.5	12.5	55.0
		Expected Count	40	11	51
	Female		39.5	11.5	51.0
		Count	82	24	106

Total	Expected Count	82.0	24.0	106.0

Table 14: Chi-Square Tests

	Value	df	Asymp.Sig (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.065[a]	1	.799		
Continuity Correction[b]	.000	1	.983		
Likelihood Ratio	.065	1	.799		
Fisher's Exact Test				.821	.492
Linear-by-Linear Association	.064	1	.800		
N of Valid Cases	106				

0 cells (.0%) have expected count less than 5. The minimum expected count is 11.55. Computed only for a 2x2 table.

The table 13 shows that there is not much difference between the observed and expected count and the table 14 shows the chi-square value of .799 which accepts the Null Hypothesis (H2). It can be concluded that 'There is no significant difference between the awareness level of males and females regarding green products'.

Consumption pattern regarding green products: With awareness level, it is important to check the consumption pattern of consumers as well. It is helpful in determining whether awareness level has any impact on consumption pattern and whether consumers are really buying green products or not. The following table 15 reveals the answer:

Table 15: How often do you buy G.P.?

	Frequency	Percent	Valid Percent	Cumulative Percent
Once a week or more often	15	18.3	18.3	18.3
At least once a month	27	32.9	32.9	51.2
Valid	40	48.8	48.8	100.0
Less than once a month	82	100.0	100.0	
Total				

Out of 82 respondents, 40 respondents buy green products 'less than once a month' i.e. rarely. 33% buy green products 'at least once a month' while only a small percentage of respondents (18%) buy green products once a week or more often. This is a very poor statistics for marketers of green products. And with low level of awareness about green products, there is less buying of green products.

Type of green products frequently bought: Even with fewer consumers buying the green products, there are certain types of green products which consumers prefer to buy the most. The table 16 shows the statistics for the most preferable green product:

Table 16: One-Sample Statistics

What kind of GP do you buy?	N	Mean	Std. Deviation	Std. Error Mean
Healthcare	82	2.74	1.497	.165
Cosmetics	82	2.39	1.562	.172
Food	82	3.43	1.352	.149
Cleaning	82	2.07	1.284	.142

Electronics	82	2.34	1.399	.154
Automobiles	82	1.59	1.018	.112

For this question, respondents were asked to tick the least bought and most bought product on afive point Likert scale. It can be seen that the most bought green product is food with the mean value of 3.43 followed by healthcare products with a mean value of 2.74. Cosmetics and electronics with a mean value of 2.39 and 2.34 respectively are not so frequently bought but consumers still buy them. But cleaning products and automobiles with the mean values of 2.07 and 1.59 are the least bought green products.

It can be inferred from the above results that the marketers of green food products and healthcare products are successful in marketing their product and convincing the consumers to buy them. But the producers of green automobiles really need to penetrate deep into the market to make their product sell. They still need to find a way to aware the consumer about the green automobiles and make them trust the product. While other categories of green products should make some changes in the way they are approaching the consumers because the present efforts are not showing the very favorable results.

Consumption pattern based on Gender: As it goes with the awareness level, same does go with the consumption pattern. Once it is ascertained whether consumers differ in their consumption for different types of green products, marketers can easily target the market accordingly. Market segmentation is important to lead the war of competition so that no resource and time is wasted on unimportant segments of the market. For this purpose, independent T-test was carried out to see whether the groups significantly differ or not for different type of green products.

Correlation between Awareness level and consumption of green products: After studying awareness and consumption as separate variables, it can be explored how they relate together. Isthere any effect of awareness level on consumption of green products or not. For this purpose, correlation analysis was on these two variables and table 17 shows the results:

Table 17: Correlations

		Are you aware of Green Products?	How often do you buy G.P.?
Are you aware of Green Products?	Pearson Correlation	1	.728**
	Sig. (2-tailed)		.000
	N	106	106
How often do you buy G.P.?	Pearson Correlation	.728**	1
	Sig. (2-tailed)	.000	
	N	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

As it is clear, from the table 18 above that there is a significant correlation between awareness level and consumption. With the correlation value of .728 which shows a strong correlation between these two variables, the fourth Null hypothesis (H4) is rejected. It is established that with high levels of awareness about green products, the consumption is high and vice versa.

Above findings show, that there is lot of scope for Green Marketing in Chennai. There is a low level of awareness about green products among consumers in Chennai. They know the term but not well verse with the concept. Marketers have got a lot of scope for improvement. In order to expand the market for green products, marketers need to expand the awareness level about them. For a rapid and deep penetration into the market they should understand the consumption pattern of consumers for different type of green products. Marketers can run awareness campaigns about environmental problems and how green products can be a solution to it. Moreover, it can be seenthat social media is the main source of

awareness; marketers should focus on social media ad campaigns and advertise their product more through online channels.

It can also be seen that there is no significant difference in the awareness level of males and females regarding green products. That means gender has no significant role to play in the awareness level. So marketers should frame policies which are based on other demographic and socioeconomic factors in order to increase the awareness.

When it comes to consumption, gender plays a significant role in two types of green products i.e. cosmetics and food. Males and females react and consume these products differently. So, in this case marketers should segment the market the market on the basis of gender and target it accordingly. In case of other products, gender has no role to play and they are the least bought products as well. Cleaning products, automobiles and electronic green products do not influence the consumers as well as healthcare, food and cosmetics do. This is because of low awareness about these products.

As it is seen from the correlation analysis, that awareness and consumption of green products are significantly correlated. In order to increase the consumption of green products, awareness about green products should be high. So, marketers of least bought green products should focus on increasing the awareness about their products.

CONCLUSION

Green should not be just a fad but a way of living. More and more green products should be produced. More and more awareness should be spread about the benefits of green products to the environment and to the society as a whole. Environmental problems like global warming, ozone layer depletion, acid rain, pollution of land, air and water can be reduced only when the human beings show genuine concern for them. It is a sad fact that the rate at which the non-renewable resources are being used, nothing will be left for future generations. New ways should be found to lower this rate and diminish the damage being done to the environment. Green products, green marketing, greener technologies are sure shot ways to achieve "sustainable consumption".

As it can be concluded from the results, consumers in Chennai know green products as biodegradable, recyclable, reusable with eco-friendly packaging.

They should be made aware about the other attributes of green products as well. Focus should be given to make the consumers aware about the 'concept' of green products.)ncreased awareness might show a varied consumption pattern of green products. More and rigorous awareness campaigns are required. There is a positive correlation between awareness and consumption pattern. Traditional marketing tools can also be adopted to make green products popular among consumers. Celebrity endorsements, sales promotion techniques, advertising of green products and their benefits can lead to increased sales. Companies can also run awareness campaigns about the environmental problems in schools and colleges so that environmental concern will be inculcated in them from the very beginning.

Now a day many NGOs and companies are making their way to theatre and drama for spreading the awareness. It is a unique and interesting way to spread the word. Companies should also target social media sites to advertise and make green products popular among younger consumers. Facebook, Twitter, YouTube etc. are among the most popular social media websites which can be exploited wisely by the companies. New and innovative ways can always be experimented to reach a wider audience.

Moreover, market segmentation and product positioning of green products are totally different from non green products. Consumers have different awareness levels and consumption pattern for green and non-green products. So, marketing mix should be different from the traditional marketing. And in order to achieve Sustainable Consumption, green products should be promoted. Green living is the healthy living!

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