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Customer Satisfaction with Green Products in Cuddalore District: An Empirical Study

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Abstract

Growing environmental degradation, climate change, and depletion of natural resources have intensified global concern for sustainable development, leading to increased attention toward green products and environmentally responsible consumption. In this context, the present study examines the level of customer satisfaction with green products in the Cuddalore district of Tamil Nadu. The study is empirical in nature and is based on primary data collected from 175 customers through a structured questionnaire using a multistage sampling technique. Secondary data were sourced from books, journals, research articles, and online resources.

The study analyzes customer satisfaction with green products across various demographic variables such as gender, age, education, occupation, income, place of residence, and taluk. Statistical tools including percentage analysis, Student's t-test, one-way ANOVA (F-test), coefficient of variation, and multiple regression analysis were employed for data analysis. The findings reveal that there is no significant relationship between customer demographics and their level of satisfaction with green products. Overall, customers in the study area exhibit a moderate and consistent level of satisfaction, irrespective of demographic differences.

The results indicate that factors other than demographics play a dominant role in influencing satisfaction with green products. Based on the findings, the study suggests the need for enhanced consumer awareness, effective eco-labeling, strong green marketing communication, government support, and stricter regulation against greenwashing to expand the green product market. The study concludes that promoting environmental education and trustworthy green marketing practices can significantly strengthen consumer confidence and contribute to sustainable consumption and environmental protection.

Introduction

The conception of sustainable development has increased awareness of environmental issues and brought society to a more thoughtful place. Sustainable growth and environmental preservation are very real and significant issues. India is currently facing threats to its biodiversity, making it one of the mega diverse countries. These days, environmental problems including climate change, resource depletion, and global warming are the most discussed ones. The phrase "save the planet, not shave the planet" is becoming more and more relevant as a result of how quickly the environment is changing and how much it worries people everywhere. Due to overconsumption and excessive use of natural resources brought on by the recent rapid economic growth, there has been an increase in consumption globally. One factor contributing to the deterioration of the ecosystem is human consumption. Customers are growing more worried about their habits and how they affect the environment as a result of the environment being a popular topic. Many

businesses and customers have expressed worry about the environmental impact of products as society grows increasingly concerned about protecting the environment. The majority of companies now acknowledge that they have an obligation to protect the environment. Because they can lower pollution and boost earnings at the same time, more companies are choosing to "go green," leading to cleaner products and production methods. Since business operations have historically and currently contribute significantly to environmental issues, there is growing recognition of the role that business plays in fostering a more sustainable and ecologically conscious society.

As concern over climate change grows on a worldwide scale, companies have also changed their operations to lessen the unfavourable effects of their goods and services on the climate. Customers are aware of environmental issues such as weather variations, resource depletion, and global warming. The government is attempting to lessen the manufacture of hazardous products while simultaneously seeking to protect the environment through its policies pertaining to environmental marketing. Their goal is to promote recyclable and energy-efficient products. As a result, environmental concerns have caused a market restructuring that has given rise to a new market category based on eco-friendly values. Environmentally friendly products are currently being produced by a large number of companies, and people are becoming more eager to buy them. The world's consumption of goods and services has skyrocketed over the past ten years, severely harming the environment and depleting natural resources. This could have an impact on how someone acts, particularly when choosing what to buy. As a result, some customers actively sought out green products in response to their environmental concerns. This could have an impact on how someone acts, particularly when choosing what to buy. As a result, some customers actively sought out green products in response to their environmental concerns. The rising level of environmental awareness since the 1970s has resulted in a favourable change in customer behaviour towards environmentally related products.

Concept of Green Products

The term "green product" has no officially defined definition. Products classified as "green" are those that pose fewer risks to human health or the environment. Green products, sometimes referred to as eco-products, environmentally friendly products, or sustainable products, are often made using less energy, assembled from recycled materials, or delivered to consumers in less packaging. Any product that reduces hazardous damage and benefits the environment, and that uses recycled resources in its design or qualities, is considered green. Green products use ecologically friendly materials or packaging to lessen their negative effects on the environment. Energy-efficient, water-efficient, low-emitting, safe and healthful, recyclable, long-lasting, biodegradable, renewable, and reusable items are what make them unique in the common sense.

Statement of the Problem

The environment is becoming a recurring public worry for the green movement as it continues to deteriorate. Natural resources like air, wood, water, fossil fuels, and ore are used and harmed throughout the production, processing, and consumption of goods. The actual use of the products produces hazardous waste, which contaminates the soil. The marketing of green products has become necessary due to the increasing pollution and environmental damages caused by conventional production methods. Because of international customer preferences and certain government requirements, the majority of Indian enterprises have begun to brand themselves as environmentally conscious businesses. With so many

people living in India, each consumer has the power to reduce harmful environmental effects by shifting their purchase habits. On the other hand, one of the main factors in developing consumer responsibility towards consumption is customer awareness of the environmental sensitivity of products. Furthermore, consumers have refrained from purchasing green products due to the complexity of environmental issues. Customers may not understand the sustainability information that businesses provide, or they may not believe the statements that companies make. Considering the lack of information about green products, this presents one of the biggest challenges. Customers find it challenging to distinguish between the bogus self-declared claims made by producers and the internationally recognized green labels due to a lack of knowledge on the use of these labels on products. Green products are typically expensive and have minimal market awareness. The customer must eventually work with companies to ensure the sustainability of green marketing approaches, even as companies have begun implementing these tactics in response to environmental concerns. It's also doubtful how Indian buyers feel about eco-friendly products. Because of the company's deceptive advertising, broken promises, ambiguous labeling, and inconsistent performance, customers may not trust the company's green marketing strategy. This has led to a rise in consumer uncertainty. The company's sales could be impacted by the fact that many consumers would not be willing to pay a greater premium for green products. Thus, persuading customers is a difficult task. Furthermore, putting green marketing into practice won't be a simple task. The company will encounter numerous challenges as it pursues green marketing. Significant investment is needed for green marketing in order to improve technology, change business procedures, inform consumers of the advantages, etc. As a result, green marketing will initially be expensive. Going green will also be a farce if the company is compelled to use unethical cost-cutting measures in order to remain competitive. In addition, because green technologies and recyclable and renewable products are more expensive, the profits will be quite low. In light of this, the researcher has attempted to determine how satisfied consumers are with green products.

Objectives of the Study

The main objective of the current study is to determine how satisfied customers in Cuddalore district are with green products. Besides, the current study aims to specifically achieve the following:

1. To find out how satisfied customers in Cuddalore district are with green products.
2. To provide appropriate suggestions based on the study's findings in order to expand the market for green products.

Testing of Hypothesis

To assess consumers' satisfaction with green products, the following null hypothesis has been developed and put to the test. **H_0:** There is no discernible relationship between the levels of customer satisfaction with green products amongst customers from various demographic profiles.

Scope of the Study

In the Cuddalore district, the survey looked at customer satisfaction with green products. The study is restricted to two taluks of the Cuddalore district. Customers' satisfaction with green products is the primary focus of the current study.

Methodology

The current study uses a survey method and is empirical in nature. The goal of the study is to unearth hidden facts about customers' satisfaction with green products in Cuddalore district.

Sampling Design

The study's scope is limited to customer satisfaction with green products in Cuddalore district. The study focuses on how customers in the Cuddalore district perceive green products. There are ten taluks in the Cuddalore district as of December 31, 2023. Multistage sampling was employed by the researcher to collect the study's primary data. Using simple random sampling, two taluks, or 20% of the total ten taluks, were chosen in the first stage. The taluks of Bhuvanagiri and Virudhachalam were chosen. For this investigation, 200 customers were chosen by convenience sampling.

Data Collection Tools

This study uses an empirical research design based on surveys. This study makes use of both primary and secondary data sources. The majority of the data used in the study was obtained through the use of a structured questionnaire. Green customers are the study's target demographic. Customers from the Cuddalore district were selected for this study, and information was obtained via a questionnaire. Twenty-five customers participated in the questionnaire's pre-testing. The pilot study's input and the advice of academics were used to make the necessary changes to the updated questionnaire. 200 customers were given questionnaires, and 186 of them were returned. Eleven surveys were determined to be lacking necessary information. Only 175 surveys are therefore included for analysis. Secondary data was gathered online, from books, journals, research articles, theses, and other sources. After being sorted, the collected data was put into a master table for further processing.

Analysis and Interpretations

The demographic variables of gender, age, education level, income, occupation, marital status, place of residence, and other aspects are the most commonly utilized for market segmentation. Table 1 shows the sample customers' demographic characteristics.

Table 1
Respondent Demographic Profiles

Customer Demographics		**No. of Respondents**	**Percentage**
Gender	Male	70	40.00
	Female	105	60.00
Age (years)	Below 30	47	26.86
	31-40	35	20.00
	41-50	61	34.86
	Above 50	32	18.28
Education	Up to SSLC	20	11.43
	H.Sc	40	22.86
	Degree	60	34.29
	PG and above	55	31.43

Occupation	Agriculturist	70	40.00
	Employed	56	32.00
	Professional	14	08.00
	Business	14	08.00
	Housewife	21	12.00
Monthly income (Rs.)	Upto 20000	28	16.00
	20001-40000	35	20.00
	40001-60000	73	41.71
	Above 60000	39	22.29
Marital status	Married	137	83.43
	Unmarried	29	16.57
Family pattern	Nuclear family	67	38.29
	Joint family	108	61.71
No. of family members	Up to 4	41	23.43
	5 and 6	78	44.57
	7 and above	56	32.00
Place of residence	Urban	139	79.43
	Rural	36	20.57
Taluk belongs	Bhuvanagiri	100	57.14
	Virudhachalam	75	42.86

Source: Primary Data.

Based on information gathered from 175 customers, 40% of responders are men and 60% are women. Regarding age groupings, twenty percent of respondents are between the ages of thirty and forty, forty-one and fifty, and eighteen-eight percent are above fifty. Of the 175 respondents, 11.43 percent completed their education up to the SSLC, 22.86 percent completed their H.Sc, 34.29 percent obtained a degree, and 32.43 percent obtained a PG or higher qualifications. 40% of the population is made up of farmers, 32% are employed customers, 8% are professionals, 8% are business owners, and 12% are housewives. 16 percent of the 175 respondents earn less than Rs. 20,000 per month, 20 percent earn between Rs. 20001-40000 per month, 41.71 percent earn between Rs. 40001 and Rs. 60000 per month, and 22.29 percent earn more than Rs. 60000 per month. Of the sample, 83.43 percent of customers are married, and 16.57 percent are unmarried. Of the total, the nuclear family makes up 38.29%, and the joint family, 61.71 percent. Regarding the number of family members, 23.43 percent of respondents said they had up to four, 44.57 percent said they have five to six, and 32 percent said they have seven or more. 79.43% of the 175 customers reside in rural areas, while 20.57% do so in urban areas. Virudhachalam taluk has 42.86 percent of respondents, while Bhuvanagiri taluk has 57.14 percent.

Customers' Satisfaction with Green Products

An effort was undertaken to find out how satisfied customers were with green products in Cuddalore district.

Table 2
Customer Demographics and Satisfaction: Student t Test

Customer Demographics	Calculated Value	Table value at 5% Level	DF	Result
Gender	1.326	1.974	173	**Ns**
Place of residence	0.042	1.974	173	**Ns**
Taluk belong	0.459	1.974	173	**Ns**

Source: Primary Data. Ns Not significant

The calculated t-value for gender (1.326) is less than the table value (1.974) for 173 degrees of freedom at the 5% significance level. There is no significant difference between the satisfaction levels of male and female customers. The calculated t-value for residency is (0.042) less than the value in the table (1.974) for 173 degrees of freedom at the 5% significance level. Therefore, there is no significant difference between rural and urban customers' satisfaction levels with green products. At the 5% significant level, the calculated t-value for taluk belongs is (0.459) less than the table value (1.974) for 173 degrees of freedom. As a result, the customer satisfaction in Bhuvanagiri and Virudhachalam experience are essentially the same. Consequently, the null hypothesis (H_0), which states that there is no significant difference between the respondents' demographics (gender, place of residence, and taluk) and satisfaction is accepted.

Table 3
Customer Demographics and Green Product Satisfaction: F Test

Demographics of Customers	Source of Variation	Sum of Squares	DF	Mean Square	F	Result
Age (years)	Between groups	22.595	3	7.532	1.030	Not significant
	Within groups	1250.582	171	7.313		
	Total	1273.177	174			
Education	Between groups	8.385	3	2.795	0.378	Not significant
	Within groups	1264.792	171	7.396		
	Total	1273.177	174			
Occupation	Between groups	11.157	4	2.789	0.376	Not significant
	Within groups	1262.020	170	7.424		
	Total	1273.177	174			
Monthly income (Rs.)	Between groups	4.984	3	1.661	0.224	Not significant
	Within groups	1268.193	171	7.416		
	Total	1273.177	174			

Source: Primary Data.

At the 5% significant level, the calculated F-value for age (1.030) is less than the table value (2.657) for 3 and 171 degrees of freedom. Therefore, there is no significant relationship between the age groups of the respondents and their level of satisfaction with green products. At the 5% significant level, the calculated F-value for education (0.378) is less than the table value (2.657) for 3 and 171 degrees of freedom. As a result, there is no significant relationship between respondents' satisfaction with green products and their

educational attainment. At the 5% significance level, the calculated F-value for occupation (0.376) is less than the table value (2.425) for 3 and 170 degrees of freedom. Therefore, there is no significant relationship between the respondents' satisfaction with green products and their occupation. At the 5% significant level, the calculated F-value for monthly income is 0.224, which is less than the table value (2.657) for 3 and 171 degrees of freedom. Therefore, there is no significant relationship between respondents' satisfaction with green products and their monthly income. Thus, it is assumed that there is no significant relationship between the demographics of customers (age, education, occupation, and monthly income) and their level of satisfaction (H_0).

Table 4
Consistency in the Satisfaction of Green Products

Customer Demographics		No. of Respondents	Mean Score	Standard Deviation	CV
Gender	Male	70	39.99	2.65	6.63
	Female	105	40.54	2.78	6.86
	Total	175	40.21	2.71	6.74
Age (years)	Below 30	47	40.06	2.80	6.99
	31-40	35	40.54	2.51	6.19
	41-50	61	40.48	2.86	7.07
	Above 50	32	39.56	2.44	6.17
	Total	175	40.21	2.71	6.74
Education	Up to SSLC	20	39.92	2.60	6.51
	H.Sc	40	40.35	2.88	7.14
	Degree	60	40.50	2.48	6.12
	PG and above	55	40.33	2.81	6.97
	Total	175	40.21	2.71	6.74
Occupation	Agriculturist	70	40.24	2.85	7.08
	Employed	56	40.45	2.61	6.45
	Professional	14	39.64	3.39	8.55
	Business	14	39.71	1.38	3.48
	Housewife	21	40.19	2.77	6.89
	Total	175	40.21	2.71	6.74
Monthly Income (Rs.)	Upto 20000	28	39.89	3.00	7.52
	20001-40000	35	40.37	3.01	7.46
	40001-60000	73	40.32	2.44	6.05
	Above 60000	39	40.10	2.75	6.86
	Total	175	40.21	2.71	6.74
Place of residence	Urban	139	40.22	2.68	6.66
	Rural	36	40.19	2.85	7.09
	Total	175	40.21	2.71	6.74
Taluk belong	Bhuvanagiri	100	40.13	2.70	6.73
	Virudhachalam	75	40.32	2.73	6.77

	Total	175	40.21	2.71	6.74

Source: Primary Data.

The average score of female customers was higher than that of male customers, at 40.54. It shows that customers who identify as female are more satisfied with green products. Customers in the age range of 31 to 40 scored the highest average score (40.54), with customers in the age range of 41 to 50 coming in second (40.48). For customers over 50, the average score is low (39.56). Consumers with a PG and above qualification have the second-highest average score (40.33), after those with a degree (40.50). Customers who possess a degree have so experienced greater satisfaction with green products. Farmers (40.24) and employed customers (40.45) had the lowest average scores. Professional customers have a low average score (39.64). As a result, employed customers have been happier with green products. Customers earning between Rs. 20001-40000 had the highest average score (40.37), followed by those earning between Rs. 40001-60000 (40.32). Customers earning less than Rs. 20,000 per month have a low average score (39.89). Customers who earn between Rs. 2000000 and Rs. 40000 per month have thus been happier with green products.

Customers in urban areas scored 40.22 on average, while customers in rural areas scored 40.19. Therefore, urban customers are more satisfied with green products. Customers from Virudhachalam taluk scored 40.32, the highest average, followed by customers from Bhuvanagiri taluk (40.13). It indicates that customers in the taluk of Virudhachalam have been happier with green products. Customers who are male (6.63%), customers over 50 (6.17%), graduates (6.12%), businessmen (3.48%), have a monthly income of Rs. 40001-60000 (6.05%), are urban (6.66%), are from Bhuvanagiri taluk (6.73%), and are generally more satisfied with green products.

Multiple Regression Analysis

The effect of customer demographics on the satisfaction with green products is examined using multiple regression analysis. It examines how customer demographics, both individually and collectively, affect how satisfied customers are with green products.

Table 5

Effect of Customer Demographics on Satisfaction with Green Products

Customer Demographics	B	Std. Error	t	Result
Constant	39.074	1.809	-	-
Gender	0.493	0.433	1.141	Ns
Age	-0.125	0.197	-0.635	Ns
Education	0.087	0.220	0.397	Ns
Monthly salary	0.054	0.213	0.253	Ns
Taluk	-0.085	0.430	-0.197	Ns
Place of residence	-0.022	0.516	-0.043	Ns

Source: Primary Data. Ns Not significant

Customer Demographics and Satisfaction with Green Products: Multiple Correlation Coefficients

R	R Square	F	Result
0.146	0.021	0.452	Not significant

According to the aforementioned analysis, there is low correlation (0.146) between consumers' demographics and how satisfied they are with green products. The correlation coefficient, or squared, between customer demographics and satisfaction with green products is 2.10 percent. 97.90% of the variance in consumers' satisfaction with green products was explained by other variables that were left out of the regression model. The multiple correlation coefficients are not significant, as indicated by the F value. Customer demographics including age, gender, education level, occupation, monthly income, and residential location don't significantly affect how satisfied customers are with green products.

Suggestions

1. Producers are providing more information about the environmental features of products through eco-labeling as a result of consumers' growing worries about the environment. In order to encourage customer familiarization with products and improve their understanding of green products, marketers should place a strong emphasis on offering clear information regarding eco-labels and green products.
2. The green alliances ought to make an attempt to educate people about the workings of natural settings, namely how humans may control their behaviour and ecology to live sustainably. Education institutions may incorporate environmental education into their curricula. Campaigns for public awareness should be supported in order to inform consumers about the advantages of eco-friendly products. Customers will become more aware of the value of green products as a result of these initiatives.
3. At the moment, social media sites like Facebook and Twitter are widely used and even considered essential accounts for young people to stay in touch with their pals. As a result, marketers ought to promote and advertise their green products on more online social networks. In order to get attention, users may post reviews of environmentally friendly items and environmental issues on social media platforms as well as their intentions to make green purchases.
4. When making a green purchase, customers need to search for eco-labels. The ISO 14024 standard has made the eco-label globally recognized. Seek for products bearing the eco-logo or green stamp, which are indicators of certification from an accredited and impartial third party. Therefore, for eligible green products, approved labels could also be adopted. Governments have the authority to enact new legislation that would penalize companies for engaging in green washing and for harming the environment throughout the production and manufacturing processes.
5. Corporate enviropreneurship and entrepreneurial ideas that tackle environmental issues and provide new technology, marketable green goods, and operational efficiencies should be promoted through green partnerships.
6. Vital facts regarding the social, environmental, and financial effects of items during the supply chain production process and following purchase can be obtained through life cycle assessment. Furthermore, a brand's need to go before claiming to be sustainable might be informed by life cycle analysis. Therefore, in order to positively impact sales of green products, marketers can carefully and successfully create and apply emotional green branding strategies.
7. Promoting environmentally conscious behaviour and green purchasing practices among consumers should be a major goal for both governmental and non-governmental organizations. They might show their support and involvement by taking the initiative to raise consumer knowledge of environmentally friendly products through the development of successful green marketing programs, including energy conservation, which will help create a more sustainable environment. The government should launch

additional campaigns in order to change the way that the public perceives green purchases. The government can collaborate with marketers to create creative green packages that will draw in consumers and be promoted.

8. Green marketers ought to produce more eye-catching advertisements that are meant to draw in their target audience. Given that consumers now shop digitally, social media ads and interactive media campaigns are good ways to reach the target market for green products in a more appealing, modern way.

Conclusion

Environmental issues have become major concern for any organizations that want to succeed in the face of competition. Over the last decade, environmentalism has emerged to be a vital business movement due to increasing issues related to acid rains, depletion of the ozone layer, and degradation of the land and many more pressing environmental issues. As growing awareness about the implications of global warming, non-biodegradable solid waste, harmful impact of pollutants, etc. both marketers and consumers are becoming sensitive to the need for the switch into green products. Further, recent past has witnessed a growth in the interest, research and practice of green marketing among academicians, policy makers and practitioners. In this context, the present study was undertaken to assess the level of satisfaction of customers towards green products in Cuddalore district with the sample of 175 customers. The researcher suggests various measures to improve the scope of green product market. If study authorities concerned take some positive measures to improve the scope of green product market, the researcher will feel amply rewarded.

References

1. Chen, T.B and Chai, L.T (2010). "Attitude towards Environment and Green Products: Consumers Perspective", *Management Science and Engineering*, Vol.4, No.2, pp.27-39.
2. Islam, S and Zabin (2003). "Consumers' Attitude towards Purchasing of Green Food", *European Journal of Business and Management*, Vol. 5, No.9, pp.2222-2839.
3. Krause, D (1993). "Environmental Consciousness: An Empirical Study", *Journal of Environment and Behaviour,* Vol.25, pp. 126-142.
4. Hart, S. L (1997) "Beyond Greening: Strategies for a Sustainable World", *Harvard Business Review*, Vol.75, No.1, January-February, pp. 66-76.
5. Dagher, G and Itani, O (2012). "The Influence of Environmental Attitude, Environmental Concern and Social Influence on Green Purchasing Behaviour", *Review of Business Research*, Vol.12, No.2, pp.104-110.
6. Martin, B and Simintiras, A (1995). "The Impact of Green Product Lines on the Environment", *Marketing Intelligence and Planning*, Vol.13, No.4, pp.16-23.
7. Alwitt LF and Pitts RE (1996). "Predicting Purchase Intentions for an Environmentally Sensitive Product", *Journal of Consumer Psychology*, Vol.5, No.1, pp. 49–64.
8. Laroche M, Bergeron, J and Barbaro Forleo, G (2001). "Targeting Consumers Who are Willing to Pay more for Environmentally Friendly Products", *Journal of Consumer Marketing,* Vol.18, No.6, pp.503-520.
9. Wasik, J.F (1996). *Green Marketing and Management: A Global Perspective*, Cambridge: Blackwell Publishers Inc.

10. Polonsky Michael Jay (1994). “Green Marketing Regulation in the US and Australia: The Australian Checklist," *Greener Management International*, Vol.5, pp.44-53.
11. Soonthonsmai, V (2007). “Environmental or Green Marketing as Global Competitive Edge: Concept, Synthesis, and Implication,” *Proceedings of the EABR Conference,* Venice, Italy.