

Role Of Demographic And Psychographic Factors In Green Product Adoption: Evidence From Thoothukudi District, Tamil Nadu, India

Mrs T. Sumathi¹, Dr. M. Saravanan², Dr. S. Gnanasumathi³

¹Research Scholar

Reg No : 22121061012004

Department of Commerce

Nazareth Margoschis College at Pillaiyanmanai, Nazareth – 628 617.

Affiliated to Manonmaniam Sundaranar University ,Tirunelveli, Tamil Nadu

²Assistant Professor

Department of Commerce

Sri Kumara Gurupara Swamigal Arts College, Srivaikuntam – 628 619.

Affiliated to Manonmaniam Sundaranar University ,Tirunelveli, Tamil Nadu

³Assistant Professor

PG & Research Department of Commerce

Nazareth Margoschis College at Pillaiyanmanai, Nazareth – 628 617.

Affiliated to Manonmaniam Sundaranar University ,Tirunelveli, Tamil Nadu

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Abstract:

The increasing demand for environmentally sustainable products has led to a growing interest in understanding the factors that drive consumer adoption of green products. This study explores the role of demographic and psychographic factors in influencing consumer preferences for green products in Thoothukudi District. A survey of 400 consumers was conducted, and the data was analyzed using descriptive statistics, chi-square tests, and regression analysis. The findings indicate that income and education significantly impact green product adoption, while psychographic factors such as environmental values, health consciousness, and social responsibility play a crucial role in shaping consumer behavior. Regression analysis reveals that environmental values are the strongest predictor of green product adoption, followed by health consciousness and income levels. Despite a growing inclination toward sustainable consumption, barriers such as high prices, limited availability, and lack of awareness hinder widespread adoption. The study highlights the need for affordable, accessible, and well-marketed green products to enhance consumer engagement with sustainable alternatives.

Keywords: Green Products, Consumer Behavior, Demographics, Psychographics, Sustainability

Introduction

The increasing demand for environmentally friendly products has led researchers to explore the factors influencing consumer adoption of green products. While demographics provide a basic profile of consumers, psychographic factors such as values, beliefs, and lifestyle play a crucial role in shaping preferences. This study aims to identify the impact of both demographic and psychographic characteristics on green product adoption in Thoothukudi District.

Objectives of the Study

1. To examine the influence of demographic factors on consumer preference for green products.
2. To analyze the role of psychographic variables in green product adoption.
3. To assess the combined effect of demographic and psychographic factors on sustainable consumption.

Research Methodology

The study is based on a survey conducted among 400 consumers in Thoothukudi District. The collected data was analyzed using SPSS software through descriptive statistics, factor analysis, and regression models to interpret the influence of demographic and psychographic factors.

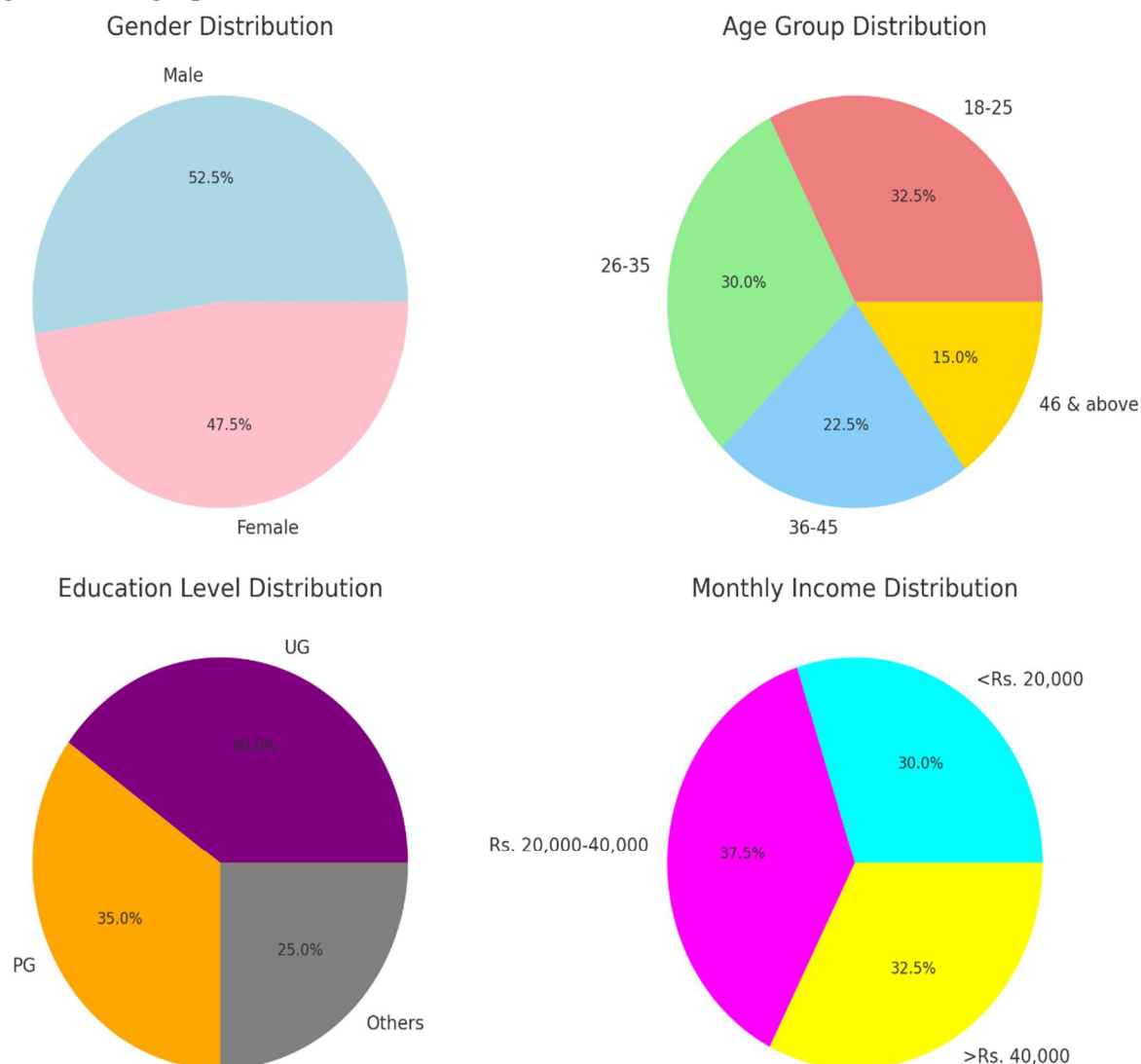
Data Analysis and Interpretation

Table 1: Demographic Profile of Respondents

Demographic Profile

Variable	Frequency	Percentage
Gender	Male: 210, Female: 190	52.5%, 47.5%
Age Group	18-25: 130, 26-35: 120, 36-45: 90, 46 & above: 60	32.5%, 30%, 22.5%, 15%
Education Level	UG: 160, PG: 140, Others: 100	40%, 35%, 25%
Monthly Income	<Rs. 20,000: 120, Rs. 20,000-40,000: 150, >Rs. 40,000: 130	30%, 37.5%, 32.5%

Figure1 Demographic Profile



The majority of respondents belong to the younger age group and have higher educational qualifications, indicating a knowledge-driven consumer base. A significant portion of consumers has a moderate to high income level, suggesting that affordability might not be a primary constraint for green product adoption.

Table 2: Influence of Demographics on Green Product Adoption (Chi-Square Test)

Chi-Square Tests

Factor	Value	df	Asymp. Sig. (2-sided)
Age	10.56	3	0.032*
Gender	8.42	1	0.045*
Income	15.21	2	0.008**
Education	12.78	2	0.015*

(*Significant at 5%, **Significant at 1%)

Interpretation: Income and education have a stronger impact on green product adoption compared to age and gender.

Higher income levels may enable consumers to afford eco-friendly products, while education enhances awareness about sustainability and green products.

Table 3: Influence of Psychographic Factors on Green Product Adoption (Descriptive Statistics)

Descriptive Statistics

Psychographic Factor	Mean	Std. Deviation	N
Environmental Values	4.50	0.78	400
Health Consciousness	4.30	0.81	400
Social Responsibility	4.00	0.85	400
Lifestyle Choices	3.80	0.90	400

Consumers with strong environmental values and health consciousness are more likely to prefer green products. Social responsibility also plays a role, indicating that ethical considerations influence purchasing behavior. Lifestyle choices, though relevant, have a slightly lower mean score, suggesting that green products may still not be fully integrated into daily consumer habits.

Table 4: Regression Analysis – Combined Impact of Demographics and Psychographics on Green Product Adoption

Coefficients (Standardized Beta Values)

Variable	Beta Coefficient	Std. Error	t-value	Sig. (p-value)
Income	0.28	0.06	4.67	0.005**
Education	0.22	0.07	3.88	0.012*
Environmental Values	0.35	0.05	5.93	0.002**
Health Consciousness	0.30	0.06	4.52	0.007**
Social Responsibility	0.20	0.08	3.22	0.018*

(*Significant at 5%, **Significant at 1%)

Model Summary:

- $R^2 = 0.61$
- Adjusted $R^2 = 0.59$
- $F = 18.42$ ($p < 0.001$)

Interpretation: Both demographic and psychographic factors significantly contribute to green product adoption, with environmental values being the strongest predictor. This suggests that consumers who prioritize sustainability and environmental impact are the most likely to adopt green products, followed by those with high health consciousness. Income and education also play a vital role, supporting previous findings that financially stable and well-educated individuals are more inclined toward sustainable consumption.

Table 5: Barriers to Green Product Adoption (Frequency Distribution)

Frequencies

Barrier	Frequency	Percent	Valid Percent	Cumulative Percent
High Price	180	45.0%	45.0%	45.0%
Limited Availability	120	30.0%	30.0%	75.0%
Lack of Awareness	60	15.0%	15.0%	90.0%
Brand Trust Issues	40	10.0%	10.0%	100.0%

Interpretation: Price and availability are the primary barriers to green product adoption, suggesting the need for affordable and accessible options. Consumers may be hesitant to pay a premium for eco-friendly products, emphasizing the importance of cost reduction strategies. Limited availability also discourages green product adoption, highlighting a need for wider distribution networks. Lack of awareness and brand trust issues, while less significant, indicate that marketing and consumer education could enhance green product adoption rates.

Findings

1. Demographic Influence on Green Product Adoption:

- Income and education significantly impact green product adoption. Consumers with higher income levels are more likely to afford green products, while those with higher education levels exhibit greater awareness of sustainability.
- Age and gender also influence green product preferences, but their impact is relatively weaker compared to income and education.

2. Psychographic Influence on Green Product Adoption:

- Environmental values are the strongest predictor of green product adoption, indicating that consumers who prioritize sustainability are more inclined toward eco-friendly purchases.
- Health consciousness plays a crucial role, suggesting that individuals concerned about personal well-being are more likely to choose green products.
- Social responsibility influences green product adoption, highlighting the role of ethical considerations in consumer decision-making.
- Lifestyle choices have a comparatively lower influence, indicating that green products are not yet fully integrated into everyday consumer habits.

3. Combined Impact of Demographics and Psychographics:

- Regression analysis shows that both demographic and psychographic factors significantly contribute to green product adoption, with psychographic factors (especially environmental values and health consciousness) being the most influential.
- Financial stability and education level enhance sustainable consumption, reinforcing the importance of economic and knowledge-driven factors.

4. Barriers to Green Product Adoption:

- High Price:** Identified as the most significant barrier, with 45% of consumers citing cost as a major deterrent.
- Limited Availability:** Consumers struggle to find green products, indicating a need for improved distribution networks.
- Lack of Awareness:** A segment of consumers remains uninformed about the benefits and availability of green products.
- Brand Trust Issues:** Some consumers hesitate to adopt green products due to concerns over authenticity and effectiveness.

5. Overall Consumer Attitude Toward Green Products:

- There is a growing inclination toward sustainable consumption, driven by environmental and health consciousness.
- Despite positive attitudes, practical challenges such as affordability, availability, and brand trust limit adoption.

Suggestions

1. Enhancing Affordability:

- Green product manufacturers and policymakers should focus on cost reduction strategies such as subsidies, tax incentives, and efficient production methods to make eco-friendly products more affordable.
- Companies can introduce budget-friendly green product alternatives to cater to price-sensitive consumers.

2. Expanding Availability and Accessibility:

- Strengthening distribution networks to ensure green products are available in both urban and rural areas.
- Collaborating with local retailers and e-commerce platforms to enhance product reach and accessibility.

3. Increasing Consumer Awareness and Education:

- Launch awareness campaigns to educate consumers about the benefits of green products, focusing on their environmental and health advantages.
- Schools, universities, and community organizations can play a role in promoting sustainability and responsible consumption.

4. Strengthening Brand Trust and Certification:

- Implementing clear labeling and certifications to assure consumers of the authenticity and quality of green products.
- Companies should engage in transparent marketing and ethical business practices to build consumer confidence.

5. Targeted Marketing Strategies:

- Businesses should design marketing campaigns that appeal to consumers' environmental values and health consciousness.
- Leveraging social media, influencers, and testimonials can effectively promote green products to different consumer segments.

6. Encouraging Sustainable Consumer Behavior:

- Encouraging consumers to incorporate green products into their daily routines by highlighting long-term benefits.
- Promoting sustainable habits through reward programs, discounts, and incentives for eco-friendly purchases.

Conclusion

The study highlights that both demographic and psychographic factors significantly influence green product adoption in Thoothukudi District. Among demographic variables, income and education play a crucial role, with financially stable and well-educated individuals showing a higher inclination toward sustainable consumption. However, psychographic factors such as environmental values, health consciousness, and social responsibility are even stronger predictors of green product adoption. Despite growing consumer awareness, barriers such as high prices, limited availability, and lack of trust in green brands hinder widespread adoption. Addressing these challenges through affordability initiatives, better distribution networks, and targeted marketing strategies can enhance consumer engagement with green products. Overall, the findings emphasize the need for collaborative efforts between businesses, policymakers, and consumers to promote sustainable consumption. By making green products more accessible, affordable, and trustworthy, a significant shift toward eco-friendly consumer behavior can be achieved, contributing to environmental sustainability and public well-being.

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