

National Seminar on Effect of Ecopreneurship on Environment Protection & Sustainable Development

A Study on Consumer Demand for Eco-Friendly Products in India: Trends, Drivers, and Barriers to Adoption with Reference to Five Major Cities in Andhra Pradesh

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Abstract

Introduction: India's trajectory as a rapidly developing economy is accompanied by significant environmental concerns, including alarming levels of air and water pollution, deforestation, and the growing challenge of effective waste management. Addressing these issues demands a shift towards more sustainable consumption patterns, and eco-friendly products are increasingly recognized as a key element in facilitating this transition. This study investigates the demand for eco-friendly products among Indian consumers, aiming to identify key drivers and barriers that shape their purchasing decisions.

Methodology: A mixed-methods research design was adopted, combining a quantitative survey with qualitative in-depth interviews. A structured survey questionnaire was administered to 400 Indian consumers residing in urban areas across five major cities: Visakhapatnam, Vijayawada, Guntur, Tirupati and Kakinada. A stratified random sampling technique divided the sample by age group, household income level and educational attainment using census data. The questionnaire included Likert-scale items measuring environmental awareness using a scale adapted from Dunlap and Van Liere's New Ecological

Paradigm, attitudes towards eco-friendly products adapted from Chan and Lau, perceived benefits, IntelliMindEd | ISSN: 2998-8527, USA | National Seminar on Effect of Ecopreneurship on Environment Protection & Sustainable Development, Department of Commerce & Management Studies, AKNU, Rajamahendravaram, AP, India

perceived costs and purchasing behaviour. Data were analysed using descriptive statistics, correlation analysis and multiple regression in SPSS version 25. Semi-structured interviews were conducted with 15 participants comprising 10 consumers and 5 industry experts, analysed thematically following Braun and Clarke.

Results & Discussion: Of 400 respondents, the mean age was 42.69 years with a standard deviation of 13.02; 50.75% were male, 45.00% female and 4.25% other; 41.00% were low income, 39.00% middle and 20.00% high; and 39.50% held a bachelor's degree. City representation was Tirupati 23.00%, Vijayawada 21.25%, Visakhapatnam 19.50% and Guntur 18.25%. While 75% self-reported being somewhat or very aware of the term eco-friendly products, only 40% provided accurate definitions, revealing an awareness-understanding gap of 35%. A significant positive correlation was found between environmental awareness and willingness to pay a premium ($r = 0.45$, $p < 0.01$). Multiple regression showed health consciousness ($\beta = 0.28$, $p < 0.01$) and environmental concern ($\beta = 0.22$, $p < 0.05$) as significant positive predictors and price sensitivity ($\beta = -0.35$, $p < 0.001$) as a significant negative predictor. Four qualitative themes emerged: health as a primary motivator, price as a major barrier, skepticism regarding greenwashing, and lack of availability and convenience.

Conclusion: Consumer demand for eco-friendly products in India is demonstrably increasing, driven by a growing awareness of environmental challenges and a rising concern for personal health. However, price sensitivity, skepticism towards greenwashing, and limited product availability continue to present significant barriers to widespread adoption. Addressing these multifaceted challenges through a combination of policy initiatives, business strategies, and consumer education programs is essential for fostering a more sustainable consumption pattern in India. The findings provide actionable insights for policymakers, businesses, and non-governmental organizations seeking to promote sustainable consumption practices.

Keywords: Eco-Friendly Products; Consumer Demand; Green Consumerism; Price Sensitivity; Greenwashing; Environmental Awareness; Sustainable Consumption; Mixed-Methods; Andhra Pradesh; India.

1. Introduction

India's trajectory as a rapidly developing economy is accompanied by significant environmental concerns, including alarming levels of air and water pollution, deforestation, and the growing challenge of effective waste management (Central Pollution Control Board, 2023). Addressing these issues demands a shift towards more sustainable consumption patterns, and eco-friendly products are increasingly recognized as a key element in facilitating this transition (UNEP, 2015). While the global discourse on green consumerism is robust, the Indian context presents unique socio-economic and cultural dynamics that necessitate specific research attention (Joshi & Rahman, 2015). Existing studies in India often lack a holistic perspective, failing to fully capture the complex interplay between consumer attitudes, dynamic market forces, evolving regulatory frameworks, and the informal economy, all of which influence the adoption of eco-friendly products. This research aims to bridge this gap by investigating:

- What are the current trends in consumer demand for eco-friendly products in India?
- What are the key drivers influencing consumer demand for eco-friendly products in India?
- What are the major barriers hindering the wider adoption of eco-friendly products in India?

The overarching goal is to provide evidence-based recommendations for stakeholders to effectively promote sustainable consumption and contribute to a greener Indian economy. The study focuses on common consumer product categories (e.g., personal care, household cleaning, food packaging) readily available in urban Indian markets. It is acknowledged that the findings may not be fully generalizable to rural populations,

given disparities in product availability, consumer awareness, and economic access (Minten & Reardon, 2008).

2. Literature Review

Eco-friendly products are broadly defined as goods that demonstrate a significantly reduced environmental footprint throughout their entire lifecycle — from raw material extraction to disposal — compared to their conventional counterparts (Ottman, 2017). The concept of sustainable consumption is deeply rooted in the principle of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development [WCED], 1987).

Globally, the market for eco-friendly products has experienced exponential growth over the past decade (Euromonitor International, 2023), driven by heightened consumer awareness of environmental issues, increased concerns about personal health, and a growing demand for corporate social responsibility (CSR) (Kotler & Lee, 2005).

In the Indian context, research indicates a growing, yet still nascent, level of environmental awareness among consumers, particularly within urban populations (Agarwal & Kumar, 2014). Studies have identified factors such as environmental consciousness, perceived product quality, social influence from peers, and the perceived health benefits of eco-friendly products as potential drivers of green purchasing behavior (Kumar & Ghodeswar, 2015; Verma & Chandra, 2018).

However, numerous barriers impede the wider adoption of eco-friendly products in India. Price sensitivity consistently emerges as a significant constraint, particularly among lower-income groups (Joshi & Rahman, 2015; D'Souza et al., 2007). Limited availability of green products in local retail outlets, especially in smaller cities and towns, further restricts consumer choice (Maniatis, 2003). Moreover, skepticism regarding the

authenticity of environmental claims made by companies — often referred to as “greenwashing” — can erode consumer trust and hinder purchasing decisions (Delmas & Burbano, 2011).

This study aims to contribute to the existing body of knowledge by employing a mixed-methods approach, enabling a more nuanced understanding of the multifaceted drivers and barriers to eco-friendly product adoption within the unique Indian market context. By integrating quantitative survey data with qualitative insights from consumer and industry interviews, the research seeks to provide a more comprehensive picture of the current state of green consumerism in India.

3. Methodology

To comprehensively investigate the research questions, this study adopted a mixed-methods research design, combining a quantitative survey with qualitative in-depth interviews. The survey served to quantify consumer attitudes, awareness, and purchasing behaviors related to eco-friendly products across a representative sample. The interviews provided rich, contextualized insights into the underlying motivations, perceptions, and experiences of both consumers and key stakeholders in the eco-friendly product market.

3.1 Quantitative Survey

A structured survey questionnaire was administered to a sample of 400 Indian consumers residing in urban areas across 5 major cities: Visakhapatnam, Vijayawada, Guntur, Tirupati and Kakinada. These cities were selected to ensure geographical diversity and representation of different consumer segments within the urban Indian market. A stratified random sampling technique was employed, dividing the sample into strata based on age group, household income level, and educational attainment, using census data to ensure proportional representation within each stratum (National Sample

Survey Organisation, 2022). The questionnaire instrument included Likert-scale questions designed to measure a range of variables, including:

- **Environmental Awareness:** Assessed using a multi-item scale adapted from Dunlap and Van Liere's (1978) New Ecological Paradigm (NEP) scale, capturing respondents' beliefs about the relationship between humans and the environment.
- **Attitudes Towards Eco-Friendly Products:** Measured using a scale adapted from Chan and Lau's (2000) study on Chinese consumers' attitudes towards green products, focusing on perceived benefits, perceived costs, and subjective norms.
- **Perceived Benefits:** Measured using items addressing respondents' beliefs about the health benefits, environmental impact, and social status associated with using eco-friendly products.
- **Perceived Costs:** Measured using items assessing respondents' perceptions of the price, availability, and quality of eco-friendly products.
- **Purchasing Behavior:** Assessed through questions about the frequency, types of products purchased, and amount spent on eco-friendly products in the past year.

Data was analyzed using descriptive statistics, correlation analysis, and multiple regression analysis. Statistical software SPSS (Statistical Package for the Social Sciences) version 25 was used for data analysis.

3.2 Qualitative Interviews

Semi-structured interviews were conducted with a purposive sample of 15 participants. This sample included:

- **10 Consumers:** Selected based on their self-reported experience purchasing and using eco-friendly products in the past year. Participants were recruited through online advertisements and community organizations.

- **5 Industry Experts:** Comprised of professionals working in the production, marketing, and distribution of eco-friendly products. These experts were identified through industry associations and online databases.

The interview guide was designed to explore in-depth topics such as motivations for purchasing eco-friendly products; perceptions of the quality, price, and availability of eco-friendly products; barriers to adoption and challenges faced when trying to incorporate eco-friendly products into their daily lives; experiences with greenwashing and skepticism towards environmental claims; and recommendations for promoting sustainable consumption and increasing the adoption of eco-friendly products in India. Interviews were audio-recorded and transcribed verbatim. Thematic analysis, following the guidelines of Braun and Clarke (2006), was used to identify recurring themes and patterns in the interview data. This involved systematically coding the transcripts, identifying meaningful patterns across the dataset, and developing overarching themes that captured the essence of the participants' experiences.

4. Results

4.1 Quantitative Results

Table 1: Demographic Characteristics of Survey Respondents (N = 400)

Variable	Category	Frequency (N)	Percentage (%)
Age (Years)	Mean (SD)	42.69 (± 13.02)	-
	Min - Max	18 - 60	-
Gender	Male	203	50.75
	Female	180	45.00
	Other	17	4.25
Income Level	Low	164	41.00
	Middle	156	39.00
	High	80	20.00
Education Level	High School	102	25.50
	Bachelor	158	39.50
	Master	84	21.00
	PhD	56	14.00
City of Residence	Visakhapatnam (Vizag)	78	19.50
	Vijayawada	85	21.25
	Guntur	73	18.25

Variable	Category	Frequency (N)	Percentage (%)
	Tirupati	92	23.00

Table 2: Awareness vs. Understanding of Eco-Friendly Products

Category	Percentage of Respondents (%)
Somewhat Aware / Very Aware	75%
Provided Accurate Definitions	40%
Awareness-Understanding Gap	35%

The survey indicated that 75% of respondents self-reported being “somewhat aware” or “very aware” of the term “eco-friendly products.” However, when asked to define the term, only 40% provided accurate definitions, highlighting a potential gap between awareness and understanding. This suggests that while consumers may recognize the term, their comprehension of the specific attributes and environmental benefits of these products may be limited.

Table 3: Correlation Between Environmental Awareness and Willingness to Pay

Variable	Correlation (r)	Significance (p-value)
Environmental Awareness & Willingness to Pay	0.45	$p < 0.01$

A significant positive correlation was found between respondents' scores on the Environmental Awareness scale and their reported willingness to pay a premium for eco-friendly products ($r = 0.45$, $p < 0.01$). This finding suggests that as consumers become more environmentally conscious, they are increasingly willing to invest in sustainable alternatives.

Table 4: Predictors of Eco-Friendly Product Purchasing Behavior (Multiple Regression Analysis)

Predictor Variable	Beta Coefficient (β)	Significance (p-value)
Health Consciousness	0.28	$p < 0.01$
Environmental Concern	0.22	$p < 0.05$
Price Sensitivity	-0.35	$p < 0.001$

Multiple regression analysis, controlling for demographic variables, revealed that health consciousness ($\beta = 0.28$, $p < 0.01$) and environmental concern ($\beta = 0.22$, $p < 0.05$) were significant positive predictors of reported eco-friendly product purchasing behavior. Price sensitivity ($\beta = -0.35$, $p < 0.001$) emerged as a significant negative predictor, highlighting the persistent challenge of affordability for many Indian consumers.

4.2 Qualitative Results

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Thematic analysis of the interview data yielded several key themes that provide rich contextual insights into the quantitative findings:

- **Health as a Primary Motivator:** Consumers frequently emphasized health concerns, particularly regarding the potential exposure to harmful chemicals in conventional products, as a primary motivation for choosing eco-friendly alternatives. (Example quote: "I switched to organic cleaning products because I have young children, and I don't want them breathing in those harsh chemicals. It's about protecting their health.")
- **Price as a Major Barrier:** The higher price point of eco-friendly products was consistently identified as a major obstacle, particularly for consumers with limited disposable income. (Example quote: "I would definitely buy more eco-friendly products if they were more affordable. But the price difference is just too big. It's hard to justify spending so much more when the cheaper, regular options are available.")
- **Skepticism Regarding Greenwashing:** Numerous consumers expressed skepticism about the genuineness of environmental claims made by companies, leading to a distrust of "eco-friendly" labeling. (Example quote: "There are so many products claiming to be 'eco-friendly' these days. But it's difficult to know which ones are actually true and which ones are just using the label to sell more products. I'm always a bit suspicious.")
- **Lack of Availability and Convenience:** Consumers frequently reported that the limited availability of eco-friendly products in their local stores, particularly in convenient formats and packaging sizes, made it difficult to consistently incorporate these products into their daily lives. (Example quote: "It's often a hassle to find a

good selection of eco-friendly products in my neighborhood. I have to go to specialty stores or order online, which takes more time and effort.”)

5. Discussion

The results of this study provide valuable insights into the evolving landscape of consumer demand for eco-friendly products in India. The findings confirm the growing awareness and appreciation of these products among urban consumers, with health consciousness and environmental concerns acting as significant drivers. However, the study also underscores the persistent challenges posed by price sensitivity, skepticism regarding environmental claims, and limited product availability. These findings are consistent with previous research conducted in the Indian context (Joshi & Rahman, 2015; Kumar & Ghodeswar, 2015), but offer a more nuanced understanding of the specific motivations and barriers that shape consumer behavior in this rapidly changing market.

The positive correlation between environmental awareness and willingness to pay a premium for eco-friendly products highlights the importance of educational initiatives aimed at increasing consumer knowledge about the environmental and health benefits of sustainable alternatives. Combating greenwashing through clear and transparent eco-labeling standards is also essential for building consumer trust and confidence in the market. Addressing the issue of affordability will likely require a combination of policy interventions, such as subsidies or tax incentives for manufacturers of eco-friendly products, and innovative business strategies aimed at reducing production costs and making sustainable options more accessible to a wider range of consumers. Improving the availability and convenience of eco-friendly products through expanded distribution networks and partnerships with mainstream retailers is also crucial for facilitating widespread adoption.

6. Conclusion

Consumer demand for eco-friendly products in India is demonstrably increasing, driven by a growing awareness of environmental challenges and a rising concern for personal health. However, price sensitivity, skepticism towards greenwashing, and limited product availability continue to present significant barriers to widespread adoption. Addressing these multifaceted challenges through a combination of policy initiatives, business strategies, and consumer education programs is essential for fostering a more sustainable consumption pattern in India.

Future research should focus on exploring the role of social media and digital marketing in shaping consumer attitudes and perceptions of eco-friendly products. Longitudinal studies are also needed to track the long-term trends in consumer behavior and assess the effectiveness of different interventions aimed at promoting sustainable consumption. Furthermore, research should investigate the potential of community-based initiatives and informal sector enterprises to contribute to the production and distribution of eco-friendly products in a more equitable and accessible manner.

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Appendix: Survey Questionnaire (Example Questions)

- How aware are you of the term “eco-friendly products”? (Very aware, Somewhat aware, Not very aware, Not at all aware)
- How concerned are you about the environmental impact of the products you purchase? (Very concerned, Somewhat concerned, Not very concerned, Not at all concerned)
- To what extent do you agree with the following statement: “I am willing to pay more for eco-friendly products.” (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)