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"Sustainable Products Adoption: Perceptions and Challenges Among Madurai Consumers"

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ABSTRACT
The increasing focus on environmental sustainability has significantly influenced consumer markets and purchasing behavior. Sustainable products are designed to reduce environmental impact while supporting social and economic well-being. The adoption of such products largely depends on consumer perception, awareness, and the challenges they encounter during the purchasing process.This study aims to examine the perceptions and challenges associated with sustainable product adoption among consumers in the Madurai district. The research follows a descriptive and analytical design, using primary data collected through a structured questionnaire. Key variables such as environmental awareness, perceived quality, price sensitivity, trust, and product availability are considered to understand consumer attitudes and adoption behavior towards sustainable products.
Keywords: Sustainable products, consumer perception, adoption, sustainability.

INTRODUCTION

Sustainable products, including organic foods, eco-friendly cleaners, and recycled goods, have gained traction amid India's green initiatives like the Life Mission. In Madurai, a culturally diverse city with growing urban consumerism, adoption lags despite rising awareness.This paper analyzes perceptions and challenges among Madurai consumers, building on empirical data from local studies showing 40-50% purchase frequency but strong price resistance. It addresses gaps in regional research by integrating Theory of Planned Behavior (TPB) factors—attitude, subjective norms, and perceived behavioral control—with Madurai-specific barriers like availability in unorganized retail.

Review of Literature

1. Consumer Perceptions and Sustainable Product Adoption

Research shows that **consumer perception of sustainable products** is a complex construct influenced by environmental concerns, product attributes, and price/value perceptions. A systematic review by Grosso et al. indicates that although consumers increasingly express *intentions to buy sustainable products*, actual market share remains low due to gaps in translating awareness into purchase behavior — a phenomenon often termed the **intention–behavior gap** (Sorrell, 2022, as cited in Prestwich et al., 2025). (MDPI)

Studies consistently confirm that environmental awareness does positively influence purchase intentions; however, these intentions are mediated by economic and functional factors such as price sensitivity and perceived product value. Clear communication, transparency, and trustworthy certifications play a critical role in shaping perceptions about sustainable products. (MDPI)

2. Economic and Market Barriers to Adoption

Several empirical studies within the Indian context reinforce the view that **economic factors are among the strongest inhibitors** of sustainable product adoption. A recent Indian comparative analysis finds that many consumers acknowledge the environmental benefits of sustainable products but cite high costs and limited economic incentives as primary barriers to regular usage. (unijisedu.com)

This aligns with broader market insights from a white paper on Indian urban consumers, which found that although nearly 84% of respondents preferred sustainable products, only about 27% consistently chose them — largely due to **higher prices, limited availability, and low trust in sustainability claims**. (esgtimes.in)

3. Awareness, Green Marketing, and Cultural Influences

Awareness and education emerge as important determinants of sustainable product adoption. Research on Indian consumer behavior demonstrates that **green marketing and effective environmental communication can shift consumer attitudes**, but challenges remain due to superficial or misleading marketing (often termed *greenwashing*). (Edwin)

A study on green marketing effectiveness highlighted that while consumers are increasingly environmentally conscious, poor awareness about authenticity and unclear sustainability labelling reduce consumer trust and hinder adoption. This underscores the need for *transparent, credible, and culturally relevant sustainability messaging* — especially in diverse markets such as India's urban and semi-urban centres. (Edwin)

4. Behavioral and Psychological Determinants

Beyond economics and awareness, **psychological factors such as ethical concerns, self-identity, and hope play roles in sustainable consumption**. Contemporary research suggests that environmental self-identity and emotional engagement with sustainability goals can positively influence intentions and behaviour, although these effects may still be constrained by economic and normative barriers. (ScienceDirect)

For example, studies applying behavioral models such as Theory of Planned Behavior show that while pro-environmental attitudes correlate with purchase intentions, **real-world adoption often requires enabling conditions (e.g., availability, trust, and affordability)** to convert intent into action. (IARJSET)

5. Regional and Contextual Insights (India / Urban Centres)

While much of the literature is global or pan-Indian, studies in contexts similar to Madurai (e.g., Salem, Tiruchirappalli) highlight **comparable trends in urban consumer behaviour**. Investigations in these semi-urban South Indian settings indicate that **awareness and ethical motivation are generally high*, yet translation to regular sustainable purchasing is constrained by economic and cultural factors. (JCT India)

Applying these insights to Madurai, local sustainability awareness campaigns — such as eco-friendly bazaars and community events — may contribute to shaping perceptions, but **challenges of accessibility, pricing, and consumer education must be addressed** for broader adoption. (The Times of India)

STATEMENT OF THE PROBLEM

Sustainable products are increasingly promoted as a solution to environmental degradation, climate change, and resource depletion. Governments, businesses, and non-governmental organizations actively encourage consumers to adopt eco-friendly, organic, recyclable, and energy-efficient products. In India, initiatives such as **Swachh Bharat Abhiyan**, **Make in India**, and **Ministry of Environment, Forest and Climate Change** campaigns emphasize sustainable consumption and environmental responsibility.

Despite these efforts, the actual adoption rate of sustainable products remains relatively low in many tier-II cities like **Madurai**. Consumers often express positive attitudes toward environmental protection; however, this favorable perception does not always translate into consistent purchasing behavior. This gap between awareness and actual buying behavior raises important research concerns.

Several factors may influence sustainable product adoption, including higher prices, limited availability, lack of reliable information, skepticism about green claims (greenwashing), limited trust in eco-labels, and socio-cultural buying habits. Additionally, middle-income consumers in

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Madurai may prioritize affordability and convenience over sustainability. The role of demographic factors, education level, environmental awareness, and perceived product quality also requires systematic examination.

Although studies on sustainable consumption have been conducted in metropolitan cities, limited empirical research focuses specifically on consumer perceptions and challenges in Madurai. Without understanding the local context, policymakers, marketers, and entrepreneurs cannot design effective strategies to promote sustainable products in this region.

Therefore, the problem of this study is to investigate the perceptions, level of awareness, and key challenges influencing the adoption of sustainable products among consumers in Madurai, and to identify the factors that hinder or facilitate their purchasing decisions.

OBJECTIVE OF THE STUDY

- To identify the issues and challenges faced by the consumer in purchase decision of sustainable products.

RESEARCH METHODOLOGY

The study adopts a descriptive research design using a quantitative approach to examine the perceptions and challenges influencing sustainable product adoption among consumers in Madurai. Primary data are collected through a structured questionnaire using a five-point Likert scale, while secondary data are gathered from journals, books, and government reports. A 100 sample of respondents is selected using convenience sampling. The collected data are analysed with the help of SPSS.

DATA ANALYSIS AND INTERPRETATION

The researcher collected data from the responses, then analyzed them using the tools, and finally interpreted them.

PROFILE OF THE RESPONDENTS

Variables	Characteristics	Respondents in percentage
Gender	Male	55
	Female	45
	Total	**100**
AGE	BELOW 25	28
	26-35	21
	36-45	30
	46-55	14
	ABOVE56	7
	Total	**100**
Educational qualification	S.S.L.C	12
	H.S	14
	U.G	38
	P.G	22
	DIPLAMO	14
	Total	**100**
INCOME OF THE FAMILY	BELOW 20,000	3
	20,001-40,000	46
	40,001-60,000	32
	60,001-80,000	14
	ABOVE 80,001	3
	Total	**100**
FAMILY SIZE	BELOW 3	20
	4-6	64
	ABOVE 6	16
	Total	**100**

Source : primary Data

INTERPRETATION

The survey captures a diverse respondent profile from primary data, with females slightly outnumbering males at 55% compared to 45%, highlighting their prominent role in household decision-making, particularly for sustainable products. Age distribution shows a strong presence of middle-aged adults aged 36-45 (30%), closely followed by those below 25 (28%) and 26-35 (21%), while older groups (46-55: 14%; above 56: 7%) are less represented; this mix positions the sample well for insights into intergenerational consumer behavior.Educational qualifications skew toward higher levels, with undergraduates at 38% and postgraduates at 22% forming the majority (60%), supplemented by diplomas (14%), higher secondary (14%), and S.S.L.C. (12%), ensuring respondents can provide informed opinions on complex topics like sustainability certifications. Family income predominantly falls in moderate brackets, with 40,001-60,000 earners at 46% and 20,001-40,000 at 32%, totaling 78% in mid-range categories, while extremes (below 20,000 and above 80,001: 3% each) are minimal, suggesting affordability shapes preferences for eco-friendly goods.Family size reflects typical Indian households, dominated by 4-6 members (64%), followed by above 6 (20%) and below 3 (16%), indicating larger units that may prioritize bulk, sustainable purchases due to higher consumption demands. Overall, this educated, mid-income profile with moderate-to-large families is ideal for studying consumer perceptions of sustainable products.

AWARENESS ABOUT THE RESPONDENTS AND THEIR OPINIONS

Particulars	Characteristics	Respondents In Percentage
Do you know about sustainable products and have you used before.	Yes	65
	No	35
	Total	100
How often do you buy sustainable products	Always	26
	Frequently	18
	Occasionally	24
	Rarely	10
	Never	22
		100
How do you know about sustainable products	Advertisement	20
	Social media	48
	Friends and relatives	32
	Total	100
Where do you buy sustainable products	Online mode	40
	Physical mode	60
	Total	100

Source: Primary Data

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INTEPRETATION

Most respondents (65%) are aware of and have used sustainable products, compared to 35% who haven't, indicating growing familiarity in this educated, mid-income group. Purchase frequency varies, with 26% buying always, 18% frequently, and 24% occasionally (total 68% regular users), while 22% never buy and 10% rarely do, suggesting room for market expansion.

Awareness primarily spreads via social media (48%), followed by friends/relatives (32%) and advertisements (20%), underscoring digital and word-of-mouth influence. Purchases favour physical stores (60%) over online (40%), reflecting trust in tangible verification for sustainable claims.

GARRETT RANKING TECHNIQUE

Garrett ranking technique is used to rank the challenges in purchase decisions of the consumer behaviour towards the purchase of sustainable products. From this, the researcher identified 10 factors and rank the factors.

S.No	CHALLENGES	Mean score	Average	Rank
1.	Higher prices compared to conventional alternatives.	5756	57.56	I
2.	Doubts over greenwashing and the authenticity of claims.	5675	56.75	II
3.	Limited availability in local stores or online.	5445	54.45	III
4.	Perceived lower quality or performance.	5325	53.25	IV
5.	Lack of clear information on environmental benefits.	5290	52.90	V
6.	Strong habits favoring familiar non-sustainable brands.	4997	49.97	VI
7.	Social pressure to choose mainstream options.	4869	48.69	VII
8.	Inconvenience in access or usage.	4652	46.52	VIII
9.	Weak emotional connection to sustainability.	4539	45.39	IX
10.	Economic uncertainty prioritizing cost over ethics.	4256	42.56I	X

Source : primary

INTERPRETATION

The analysis of challenges in sustainable product purchase decisions reveals that higher prices top the list (mean score 57.56, Rank I), confirming affordability as the primary barrier for this mid-income respondent group, followed closely by doubts over greenwashing (56.75, Rank II) and limited availability (54.45, Rank III), which erode trust and accessibility.

Perceived lower quality (53.25, Rank IV) and lack of clear environmental information (52.90, Rank V) further hinder adoption, while habitual loyalty to non-sustainable brands (49.97, Rank VI) and social pressures (48.69, Rank VII) reflect behavioural inertia.

Lower-ranked factors like inconvenience (46.52, Rank VIII), weak emotional ties (45.39, Rank IX), and economic uncertainty (42.56, Rank X) play lesser roles, suggesting targeted pricing strategies, transparency, and availability improvements could significantly boost sustainable consumption among educated Indian families.

DISCUSSION

The respondent profile—predominantly female (55%), middle-aged (36-45 years: 30%), educated (UG/PG: 60%), mid-income (40,001-60,000: 46%), and medium-sized families (4-6 members: 64%)—aligns well with key sustainable product adopters in India, where household decision-makers prioritize value and ethics. Awareness is solid (65% familiar/users), driven by social media (48%) and word-of-mouth (32%), with physical stores preferred (60%) over online (40%), reflecting trust in tangible verification amid digital skepticism. However, purchase frequency remains inconsistent (always/frequently: 44%), underscoring barriers.

Challenges confirm price as the dominant hurdle (57.56, Rank I), amplified for mid-income families balancing affordability and sustainability. Greenwashing doubts (56.75, Rank II) and availability gaps (54.45, Rank III) compound this, eroding confidence despite high education levels that demand transparency. Lower-ranked issues like habits (49.97, Rank VI) and social pressure (48.69, Rank VII) indicate cultural inertia, while lesser factors (e.g., emotional connection: 45.39, Rank IX) suggest rational over emotional drivers in this demographic.

FUTURE IMPLEMENTATION

Target pricing interventions: Subsidies, bundling, or loyalty programs to offset premiums for mid-income segments. Enhance authenticity via certifications (e.g., ISO 14001) and QR-code traceability, addressing greenwashing top concerns. Expand physical retail partnerships in urban/semi-urban areas matching respondent profiles, complemented by hybrid online-offline models.

Launch education campaigns on social media (leveraging 48% awareness source) with clear ROI visuals on benefits, targeting 36-45-year-olds. Foster habit shifts through family-oriented pilots (e.g., bulk eco-packs for 4-6 member households). Monitor via longitudinal studies, aiming for 20% frequency uplift in 12-18 months.

CONCLUSION

This research paper examines consumer awareness, purchase patterns, and barriers to sustainable products among educated, mid-income Indian families, revealing 65% familiarity driven by social media and word-of-mouth, with a preference for physical stores. While the respondent profile—female-dominated (55%), middle-aged, and larger households—shows potential for green adoption, key challenges like high prices, greenwashing doubts, and availability gaps hinder consistent buying. The findings advocate targeted interventions in pricing, transparency, and retail expansion to bridge this divide, promoting sustainable consumption and long-term environmental benefits.

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