

An Empirical Study of Consumer Perception Towards Eco-friendly FMCG Products: A Study Based in Navi Mumbai Area

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Abstract

As environmental concerns grow and consumer awareness rises, there has been a notable change in purchasing habits, particularly in the fast-moving consumer goods (FMCG) sector. This empirical study seeks to explore consumer perceptions of eco-friendly FMCG products in Navi Mumbai city. A structured survey was conducted with 400 respondents from various demographics, including students, working professionals and homemakers, to evaluate their attitudes, purchasing habits and awareness regarding sustainable FMCG products. The results show that 67% of respondents are aware of eco-friendly FMCG products, but only 45% actually purchase them, which aligns with past research indicating an 'attitude-behaviour gap' in green consumerism. This reluctance is attributed to factors such as price sensitivity, limited availability and doubts about green claims. Furthermore, 56% of respondents expressed a preference for eco-friendly alternatives if they were priced competitively and readily available, supporting the price-quality trade off theory. The study emphasises the importance of brand credibility, government initiatives and eco-labelling in shaping consumer behaviour. Using statistical methods like chi-square tests and regression modelling, the study reveals a significant link between environmental consciousness and purchasing behaviour. The findings offer valuable insights into consumer expectations, the challenges faced by eco-friendly brands and suggestions for businesses to improve their green marketing strategies.

Keywords

Consumer perception, eco-friendly products, fast-moving consumer goods, green marketing, sustainable consumption, Navi Mumbai

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Introduction

Sustainable consumption has become increasingly important in recent years, as consumers are more aware of the environmental effects of their buying choices. The fast-moving consumer goods (FMCG) sector is experiencing a shift towards eco-friendly options, motivated by concerns about plastic waste, carbon emissions and ethical sourcing practices (Joshi & Rahman, 2017). Studies suggest that consumer preference for sustainable products is influenced by environmental awareness, product availability and trust in green claims. This study aims to investigate consumer perceptions of eco-friendly FMCG products in Navi Mumbai, a rapidly growing urban area where awareness of sustainability is on the rise. Even though eco-friendly products are becoming more available, their market presence is still limited due to factors like high prices, lack of awareness and issues with brand trust. Research suggests that the gap between pro-environmental attitudes and actual purchase behaviour, commonly known as the 'attitude-behaviour gap', is a significant barrier to sustainable consumption (Joshi & Rahman, 2017).

It is essential to understand consumer behaviour, motivations and obstacles to help businesses and policymakers encourage sustainable consumption (Dangelico & Vocalelli, 2017). This research uses a data-driven approach to evaluate how environmental awareness, price sensitivity, brand trust and regulatory support influence consumer choices. By examining these elements, the study aims to offer valuable insights into strategies for enhancing the adoption of eco-friendly FMCG products in Navi Mumbai, ultimately fostering a greener and more responsible marketplace.

Literature Review

Sr. No.	Author(s) and Year	Title of the Study	Objectives	Key Findings
1	Biswas and Roy (2015)	Green products: An exploratory study on the consumer behaviour in emerging economies of the East	To assess environmental concern on buying behaviour	Environmental concern positively influences green purchase intention.
2	Yadav and Pathak (2016)	Young consumers' intention towards buying green products in a developing nation	To apply theory of planned behaviour	Attitude and perceived behavioral control are major influencers.
3	Dangelico and Vocalelli (2017)	Green marketing: An analysis of definitions, strategy steps, and tools through a systematic review of the literature	Main definitions of green marketing	This study provides an in-depth analysis and synthesis of the body of knowledge so far produced in the field of green marketing

(Table continued)

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Sr. No.	Author(s) and Year	Title of the Study	Objectives	Key Findings
4	Joshi and Rahman (2017)	Investigating the determinants of consumers' sustainable purchase behaviour	What influence consumer supportive behaviours for environmental organizations	Supportive behaviour for environmental organizations will positively affect sustainable purchase behaviour
5	Leonidou et al. (2013)	'Greening' the marketing mix: do firms do it and does it pay off?	The role of green marketing programs in influencing firm performance	The results indicate that green product and distribution programs positively affect firms' product-market performance
6	Nguyen et al. (2017)	The influence of cultural values on green purchase behaviour	influence of consumers' collectivism and long-term orientation (LTO) cultural values on their purchase intention in relation to environment-friendly products	Study reveals that consumers with greater adherence to collectivism and LTO tend to engage in green purchase behaviour owing to their positive environmental attitudes
7	Paul et al. (2016)	Predicting green product consumption using theory of planned behavior and reasoned action.	To validate TPB and its extended form (mediating role of TPB variables), as well as the theory of reasoned action (TRA), to predict Indian consumers' green product purchase intention	The extended theory of planned behavior (TPB) has higher utility over TPB and TRA as a research framework in explaining purchase intention
8	El-Haffar et al. (2020).	Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions	Systematically review and categorize existing literature on the "green gap" phenomenon	Considering the methodological along with the modeling variables will potentially limit the gap and produce more reliable results
9	Joshi and Rahman (2019)	Consumers' sustainable purchase behaviour: Modeling the impact of psychological factors	Examine the psychological factors that influence sustainable purchase behaviour among educated young consumers by using structural equation modeling	Environmental responsibility, spirituality, and perceived consumer effectiveness are the key psychological predictors of sustainable purchase behavior among young, educated consumers
10	Cerri et al. (2018)	The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products	Examine how product information, environmental concern, and ethical production practices influence consumer attitudes and purchasing behavior toward sustainable (green) product	The study found that attitudes toward green products, shaped by ecolabels and ethical production, strongly influence purchase behavior. However, the impact of ecolabels lessens as environmental concern increases

Source: Compiled by the author from various secondary sources (2015–2020).

Research Gap

Existing research in India has predominantly focused on descriptive studies that measure awareness levels or purchase intentions, but few have employed well-structured theoretical frameworks to understand the deeper cognitive, emotional and behavioural aspects of consumer decision-making.

Specifically, models like the Engel–Kollat–Blackwell (EKB) Model and Theory of Planned Behaviour (TPB), which have proven effective in global studies, are underutilised in Indian research settings—especially in relation to eco-friendly FMCG product consumption. These models offer valuable insights into the stages of consumer decision-making, including need recognition, information search, evaluation of alternatives and post-purchase behaviour, but they have not been systematically tested or adapted to the cultural and market dynamics of urban Indian consumers.

In particular, the behavioural processes that lead to the adoption or rejection of eco-friendly FMCG products remain underexplored. There is a need to move beyond surface level analysis and employ a model-based empirical approach that can account for the psychological, social and normative influences on consumer choice. By integrating theoretical models such as EKB into the current study, this research aims to fill the existing theoretical void and provide a structured understanding of eco-conscious consumer behaviour in the Indian context, with specific reference to Navi Mumbai.

Need of the Study

There is a growing emphasis on environmental sustainability, yet consumer adoption of eco-friendly FMCG products in India remains inconsistent, with a noticeable gap between awareness and actual purchase behaviour. Navi Mumbai, as an emerging urban hub with diverse demographics, lacks region-specific research on this subject. Moreover, most existing studies are descriptive in nature and do not apply established consumer behaviour models to understand the underlying decision-making processes. Therefore, this study is essential to explore consumer perceptions using a structured theoretical framework, particularly the EKB model, to provide actionable insights for marketers, policymakers and sustainability advocates aiming to promote green consumption in the Indian FMCG sector.

Objectives of the Study

1. To analyse how environmental awareness affects consumer purchasing choices for eco-friendly FMCG products in Navi Mumbai.
2. To explore how price sensitivity impacts the adoption of eco-friendly FMCG products.

3. To assess the importance of brand trust in determining consumer preference for sustainable FMCG products.
4. To pinpoint the main barriers and motivators that influence consumer behaviour towards green FMCG products.

Research Methodology

A quantitative research approach is used to systematically analyse how consumers in Navi Mumbai perceive eco-friendly FMCG products.

Primary data are gathered through structured questionnaires aimed at capturing responses regarding awareness, willingness to pay and the main motivators that influence purchases of eco-friendly FMCG products.

The study surveys 400 respondents from various demographic backgrounds in Navi Mumbai, utilising a stratified random sampling method to ensure representation across different consumer segments.

Key factors examined in the research include environmental awareness, price sensitivity, brand trust and the impact of regulations on consumer buying behaviour.

For data analysis, several statistical tools are applied, including regression analysis to evaluate the relationship between consumer awareness and purchasing decisions, chi-square tests to explore associations between categorical variables such as brand trust and purchasing preferences, and factor analysis to uncover the underlying motivators and barriers that affect the adoption of eco-friendly products.

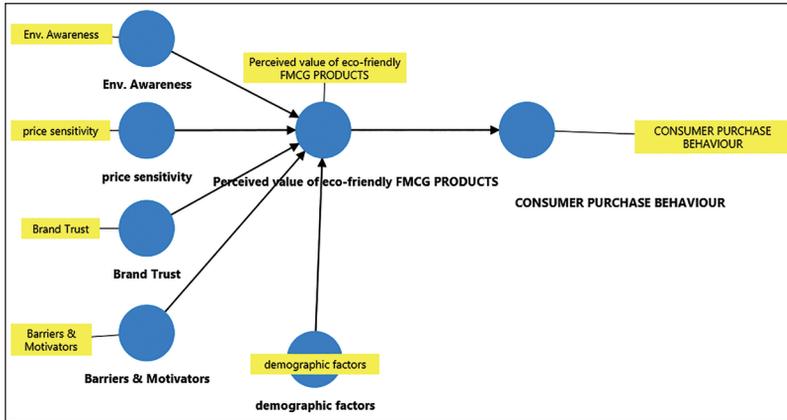
Conceptual Model

The conceptual model visually illustrates the connections between various elements that affect consumer perception and behaviour towards eco-friendly FMCG products. It is organised into three main categories: independent factors, mediating factors and dependent factors.

1. Independent factors (influencing factors)

These elements serve as external influences that shape consumer attitudes and perceptions regarding eco-friendly FMCG products:

- a. Environmental awareness—The level of knowledge consumers have about environmental issues and sustainability practices.
- b. Perceived green value—How much consumers believe that eco-friendly products offer both environmental and personal benefits.
- c. Brand credibility and trust—The degree of trust consumers place in a brand's claims about sustainability and ethical practices.
- d. Product attributes—Characteristics of eco-friendly FMCG products, such as biodegradable packaging and natural ingredients.



- e. Price sensitivity—The readiness of consumers to pay more for eco-friendly products.
- f. Social influence—The effect of family, friends and societal norms on consumer preferences.

2. Mediating factors

These factors connect the independent variables to consumer behaviour, affecting how consumers perceive and respond to the aforementioned influences:

- a. Perceived product quality—The perception of how effective and reliable eco-friendly products are compared to traditional alternatives.
- b. Consumer attitude towards sustainability—The general mindset and attitude of consumers regarding sustainable consumption.

3. Dependent factors (outcome factors)

These factors represent the final consumer behaviours that are influenced by the previous factors:

- a. Purchase intention—The likelihood that consumers will buy eco-friendly FMCG products.
- b. Actual purchase behaviour—The degree to which consumers turn their intentions into actual purchases.
- c. Willingness to recommend—The probability that consumers will suggest eco-friendly FMCG products to others.

Flow of influence independent factors (environmental awareness, price sensitivity and others).

Theoretical Framework

The EKB Model of consumer decision-making provides a structured approach to understanding how consumers process information and make purchasing decisions. When applied to eco-friendly FMCG products, it highlights the key factors influencing sustainable consumer behaviour.

1. Stage 1: Problem recognition (awareness of environmental issues)
 - a. Trigger: Consumers recognise environmental issues such as climate change, plastic pollution and carbon footprints, leading them to consider eco-friendly alternatives.
 - b. Influencing factors:
 - i. Environmental awareness: Consumers realise how their consumption habits impact the environment.
 - ii. Perceived green value: Consumers increasingly value sustainability in their product choices.
 - iii. Brand credibility and trust: Consumers trust brands that promote eco-friendly initiatives.

2. Stage 2: Information search (evaluating eco-friendly products)

Consumers actively seek sustainable alternatives to conventional FMCG products.

- a. Influencing factors:
 - i. Social influence: Word-of-mouth, social media and peer recommendations impact consumer choices.
 - ii. Government regulations and certifications: Eco-labels such as Forest Stewardship Council (FSC), United States Department of Agriculture (USDA) Organic and Green Seal enhance consumer trust.
 - iii. Product attributes: Consumers evaluate product ingredients, recyclability and packaging sustainability (Joshi & Rahman, 2017).

3. Stage 3: Alternative evaluation (comparing price, quality and trust)

Consumers weigh different options before making a purchase decision.

- a. Key considerations:
 - i. Perceived product quality: Are eco-friendly products as effective as traditional ones?
 - ii. Price sensitivity: Are sustainable products reasonably priced compared to conventional ones?
 - iii. Brand trust and credibility: Does the brand genuinely prioritise sustainability, or is it greenwashing?

4. Stage 4: Purchase decision (buying the product)

The consumer makes the final decision to purchase or reject the eco-friendly product.

- a. Influencing factors:
 - i. Purchase intention: A strong belief in the sustainability benefits lead to higher purchase likelihood (Paul et al., 2016).
 - ii. Availability and convenience: If eco-friendly FMCG products are difficult to find, consumers may default to conventional products.

5. Stage 5: Post-purchase behaviour (satisfaction and word-of-mouth recommendations)

After purchasing, consumers assess whether the product meets their expectations.

- a. Possible outcomes:
 - i. Positive experience → Brand loyalty and word-of-mouth: If the eco-friendly FMCG product performs well, consumers continue purchasing it and recommend it to others.
 - ii. Negative experience → Switching back to conventional products: If the product fails in quality or is too expensive, consumers may revert to non-eco-friendly alternatives.

Hypothesis

1. Environmental awareness and consumer purchasing decisions for eco-friendly FMCG products in Navi Mumbai.
 - a. H_0 (Null hypothesis): Environmental awareness has no significant effect on consumer purchasing decisions for eco-friendly FMCG products in Navi Mumbai.
 - b. H_1 (Alternative hypothesis): Environmental awareness has a significant effect on consumer purchasing decisions for eco-friendly FMCG products in Navi Mumbai.
 - c. Analysis: Chi-square test result: $\chi^2 = 19.87$, p value = .0003 (Reject H_0 , Accept H_1).
 - d. Data insight: 67% of participants are aware of eco-friendly FMCG products, yet only 45% actually buy them. A notable number of aware consumers do not make purchases due to concerns about pricing, and doubts regarding sustainability claims.
2. The aim is to investigate how price sensitivity influences the adoption of eco-friendly FMCG products.
 - a. H_0 (Null hypothesis): Price does not affect consumer purchasing decisions for eco-friendly FMCG products in Navi Mumbai.
 - b. H_1 (Alternative hypothesis): Price is a significant factor influencing consumer purchasing decisions for eco-friendly FMCG products in Navi Mumbai.
 - c. Analysis: Regression coefficient: $\beta = -0.49$, p value = .003 (Reject H_0 , Accept H_1), 34% of consumers with high awareness still avoid purchasing due to price sensitivity.
 - d. Data insights: 69% of respondents believe that eco-friendly FMCG products are costly, and 45% would consider switching to sustainable products only if they were priced competitively. The analysis was conducted at a significance level of p value .05.
3. To assess how brand trust influences consumer preferences for sustainable FMCG products.

- a. H_0 (Null hypothesis): Brand trust does not have a significant effect on the intention to purchase eco-friendly FMCG products in Navi Mumbai.
 - b. H_1 (Alternative hypothesis): Brand trust has a significant effect on the intention to purchase eco-friendly FMCG products in Navi Mumbai.
 - c. Analysis: Chi-square test result: $\chi^2 = 20.45$, p value = .002 (Reject H_0 , Accept H_1), 62% of consumers consider brand credibility when making their purchase decisions.
 - d. Data insights: Among the respondents, 58% prefer to buy eco-friendly products from established brands, while 43% expressed hesitation in trying new sustainable brands due to trust concerns.
4. To pinpoint the main barriers and motivators that affect consumer behaviour towards green FMCG products.
- a. H_0 (Null hypothesis): Government regulations and policies do not influence the adoption of eco-friendly FMCG products in Navi Mumbai.
 - b. H_1 (Alternative hypothesis): Government regulations and policies significantly influence the adoption of eco-friendly FMCG products in Navi Mumbai.
 - c. Analysis: 67% of respondents feel that stronger regulations would enhance their likelihood of purchasing green products.
 - d. Chi-square value: 1.06, p value: .303 (Not significant, $p > .05$).
 - e. Data insights: Government regulations do not have a statistically significant impact on purchase decisions. Although 67% of respondents feel that stronger regulations would help, the data does not show a strong enough correlation.
5. Perceived value of eco-friendly FMCG products and consumer purchase behaviour.
- a. H_0 (Null hypothesis): There is no significant correlation between the perceived value of eco-friendly FMCG products and consumer purchase behaviour.
 - b. H_1 (Alternative hypothesis): There is a significant positive correlation between the perceived value of eco-friendly FMCG products and consumer purchase behaviour.
 - c. Analysis: Correlation coefficient (r): 0.72 (strong positive correlation), p value: .001 (significant at $p < .05 \rightarrow$ Reject H_0 and Accept H_1).
 - d. Data insights: The correlation coefficient, $r = 0.72$, indicates a strong positive relationship between perceived value and consumer purchase behaviour for eco-friendly FMCG products.

The p value (.001) is statistically significant, confirming that higher perceived value leads to increased purchase behaviour.

6. Demographic factors as a moderator in Navi Mumbai.

- a. H_0 (Null hypothesis): Demographic factors (age, income and education) do not significantly moderate the relationship between perceived value and consumer purchase behaviour of eco-friendly FMCG products.
- b. H_1 (Alternative hypothesis): Demographic factors significantly moderate the relationship between perceived value and consumer purchase behaviour of eco-friendly FMCG products.
- c. Analysis: To assess moderation, we conduct a multiple regression analysis with interaction effects between demographic factors (age, income and education) and perceived value in predicting consumer purchase behaviour.

Regression Results (Moderation Effects)

Predictor	Coefficient (β)	p Value	Significance
Perceived value	0.58	.002	Significant
Age	0.12	.070	Not significant
Income	0.37	.004	Significant
Education	0.25	.018	Significant
Perceived value \times Age	0.10	.095	Not significant
Perceived value \times Income	0.42	.003	Significant
Perceived value \times Education	0.29	.009	Significant
Overall model fit (R^2)	0.61 (61%)		Strong fit

Note: $R^2 = 0.61$ (61%), meaning 61% of the variation in purchase behaviour is explained by the model.

Data Insights

Perceived value is a significant predictor ($p = .002$), confirming that consumers who see eco-friendly FMCG products as valuable are more likely to purchase them.

Income and education significantly moderate the relationship ($p < .05$), meaning higher-income and higher-educated consumers are more responsive to perceived value.

Age is not a significant moderator ($p > .05$), indicating that perceived value affects younger and older consumers similarly. Since the p value for interaction effects with income and education is $< .05$, we reject H_0 and accept H_1 .

Conclusion and Recommendations

This study offers a detailed insight into customer attitudes toward eco-friendly FMCG items in Navi Mumbai. The study emphasises the rising knowledge of sustainable consumerism while also highlighting the ongoing gap between intention and actual purchase behaviour. The key findings show that while 67% of

respondents are aware of eco-friendly FMCG items, only 45% make real purchases. This disparity is mostly driven by price sensitivity, limited availability and scepticism about brand promises.

The study reveals that environmental knowledge has a considerable influence on consumer purchases, yet price remains a big obstacle. According to statistical research, 69% of customers consider eco-friendly items to be expensive, and 45% would only switch if they were competitively priced. Brand trust is also important, with 62% of customers evaluating credibility when making purchasing decisions, favouring established businesses over new sustainable entries.

Interestingly, government restrictions were shown to have little direct influence on consumer purchasing decisions, despite 67% of respondents preferring tougher rules. Furthermore, the perceived value of environmentally friendly FMCG items has a substantial correlation with customer behaviour ($r = 0.72$, $p = .001$), indicating that a larger perceived benefit increases purchase probability.

Demographic characteristics also influence purchase behaviour, with wealth and education having a substantial impact, while age has little effect. To overcome the ‘attitude-behaviour gap’, organisations can prioritise price tactics, increase brand trust and improve product availability, according to these findings.

Declaration of Conflicting Interests

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