

Impact of Green Marketing Strategies on Consumer Purchasing Behaviour in the FMCG Sector

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Abstract:

This research explores the effect of green marketing strategies on consumer buying behavior in the Fast-Moving Consumer Goods (FMCG) industry. As environmental issues become more salient in the values of consumers, this study seeks to assess the effects of environmentally friendly marketing strategies—green branding, sustainable packaging, and eco-labeling—on consumers' buying choices. This research also explores consumer knowledge, attitudes towards environmentally friendly products, and green marketing's effects on brand trust and loyalty. Taking a quantitative and descriptive research approach, data were gathered from 300 respondents through a structured questionnaire, aiming at consumers in both urban and semi-urban locations with stratified random sampling. Statistical methods such as descriptive statistics, correlation analysis, ANOVA, and multiple regression were applied using SPSS. Findings reveal a high degree of consumer awareness and favorable attitudes towards green marketing practices. Strong positive correlations were established between green marketing factors and buying behavior, and the greatest impact was seen with eco-label awareness. ANOVA analysis illustrated that green branding has a direct effect on brand loyalty, and regression analysis illustrated that green purchasing behavior significantly depends on eco-label awareness, green packaging perception, and belief in green branding. These results highlight the strategic significance of embedding sustainable practices in marketing to encourage consumer loyalty and influence eco-friendly buying in the FMCG market.

Keywords: Green Marketing, Consumer Behavior, FMCG Sector, Eco-labels, Sustainable Branding.

1. INTRODUCTION

This section offers a background overview of the research by stipulating the background, defining the main problem, and introducing the main objectives that frame the study of the effects of green marketing strategies on consumer buying behavior in the FMCG industry [1-2].

1.1. Background Information

Over the last few years, increased concern for environmental sustainability has impacted both business strategies and consumer behavior [3-4]. The high-consumption and high-turnover Fast-Moving Consumer Goods (FMCG) industry has in turn adopted more green marketing strategies in order to cater to changing expectations of green consumers [5-6]. Green marketing includes practices involving the adoption of environmentally friendly packaging, sustainable sourcing, and projecting environmentally friendly benefits of products [7-8]. These tactics not only seek to minimize the environmental impact but also to get brands in tune with contemporary consumers' values of maintaining sustainability in their consumption practices [9].

1.2. Statement of the Problem

While green marketing has caught on in the FMCG industry, there is little understanding of how well these strategies truly influence actual consumer purchasing behavior. While consumers often indicate that they want "green" products, their actual purchasing behavior at times does not convert to these expressed wants^[10]. This disconnect makes it challenging for FMCG companies to develop successful green marketing campaigns that produce actual results in sales and customer loyalty.

1.3. Objectives of the Study

1. To study the influence of green marketing on consumer buying habits in the FMCG industry.
2. To analyze consumer awareness and perception towards environment-friendly products.
3. To determine the impact of green branding on brand loyalty and consumer trust.

2. METHODOLOGY

The methodology is described in terms of the research design, the sampling strategy, the data gathering process, and the analysis procedures employed in the study. This section gives an elaborate description of the procedure for investigating the role of green marketing strategies on FMCG consumers' purchasing behavior and the tools deployed as well as the statistical analyses employed to handle the gathered data.

2.1. Research Design Description

This research takes a quantitative approach to research design in order to explore the effects of green marketing strategies on purchasing behavior among consumers in the FMCG industry. The descriptive method is employed to investigate the relationships between variables like green marketing, consumer awareness, and brand loyalty. The design permits the gathering of organized data from a specified population to test the research goals in a systematic manner.

2.2. Participants/Sample Details

The research focuses on consumers who buy FMCG products on a regular basis in urban and semi-urban areas. 300 respondents were chosen through stratified random sampling to provide age, gender, income level, and education diversity. This helps to obtain a wide range of consumer attitudes and behaviors towards environmentally friendly purchasing behavior.

2.3. Instruments and Materials Used

A standardized questionnaire was prepared as the main data collection tool. The questionnaire had closed-ended questions scored on a 5-point Likert scale from "strongly disagree" to "strongly agree." The questionnaire had five sections: demographic profile, green marketing awareness, perception of environmentally friendly products, buying behavior, and brand trust/loyalty.

2.4. Procedure and Data Collection Methods

Data were gathered using both online questionnaires and hard copy distribution of questionnaires in shopping malls, retail outlets, and community centers. Before complete

deployment, a pilot test involving 30 respondents was used to check for clarity and reliability of the questionnaire. Following the inclusion of required revisions, the final survey was distributed over four weeks. Ethical issues such as informed consent and anonymity of respondents were maintained strictly.

2.5. Data Analysis Methods

The Statistical Package for the Social Sciences (SPSS) was used to code and analyse the collected data. Consumer feedback and demographic data were described using descriptive statistics (mean, frequency, and percentage). To evaluate the study hypotheses and investigate the connections between green marketing tactics and consumer behaviour variables, inferential statistical techniques such as correlation analysis, ANOVA, and multiple regression analysis were employed..

3.RESULT

This section introduces the major findings obtained from responses gathered from 300 participants. The findings are expressed based on the three main aims of the study. Descriptive and inferential statistical techniques like frequency distributions, correlation analysis, ANOVA, and multiple regression were utilized in interpreting the data meaningfully.

3.1. Presentation of Findings

The demographic distribution of the 300 study participants is shown in Table 1. The data is displayed in frequency and percentage, and the variables that are used include gender, age group, education level, and monthly income.

Table 1: Demographic Profile of Respondents (N = 300)

Variable	Category	Frequency	Percentage (%)
Gender	Male	162	54%
	Female	138	46%
Age Group	18–25	90	30%
	26–35	108	36%
	36–50	72	24%
	Above 50	30	10%
Education Level	Undergraduate	102	34%
	Graduate	144	48%
	Postgraduate & Above	54	18%
Monthly Income	< ₹20,000	66	22%

	₹20,001–₹50,000	132	44%
	> ₹50,000	102	34%

The demographic breakdown shows a relatively even gender split, with 54% male and 46% female respondents. Most participants are in the 26–35 age bracket (36%), followed by the 18–25 age bracket (30%). Educationally, most respondents are graduates (48%), which implies an educated sample. Income-wise, the highest segment earns between ₹20,001 and ₹50,000 (44%), which is consistent with average middle-income FMCG consumers. These features represent a heterogeneous and representative sample that is appropriate for conducting green marketing impacts on consumption habits analysis.

Figure 1 presents a graphical view of the demographic features of the respondents, such as gender, age group, level of education, and monthly income. The graphical overview gives a better understanding of the composition of the sample employed in the study.

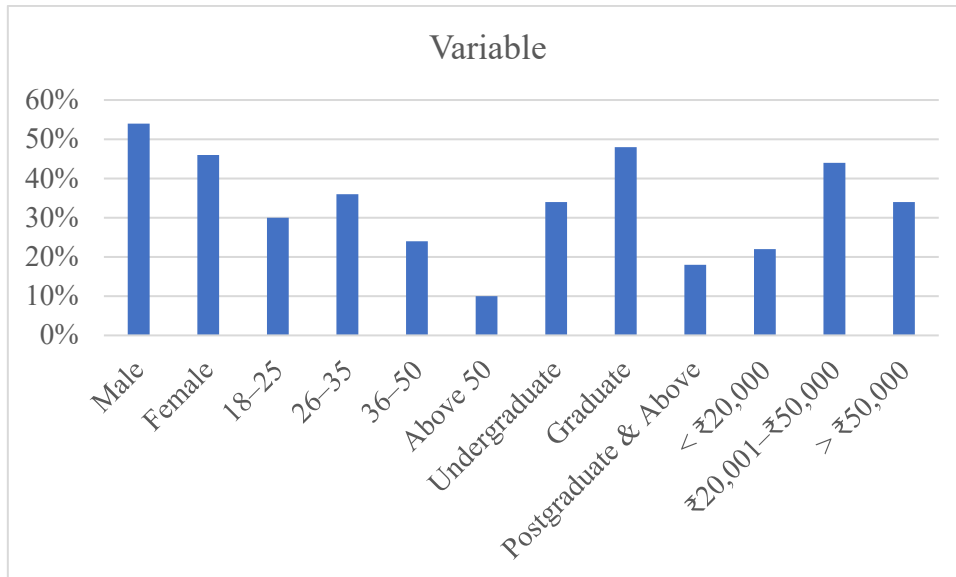


Figure 1: Graphical Representation of Demographic Profile of Respondents (N = 300)

The graph distinctly displays a well-balanced distribution among major demographic variables. The gender split exhibits minimal male prevalence, and the age group 26–35 comes out to be the most prominent category. Education levels are maximum at the graduate level, which reflects that the sample contains a predominantly high education level. The income level is biased toward the ₹20,001–₹50,000 range, reflecting that the majority of respondents fall within the working middle class. These findings validate the appropriateness and applicability of the findings to the usual FMCG consumers interested in green marketing.

3.2. Consumer Perception and Awareness

On a 5-point Likert scale, the mean ratings of respondents' awareness and perception of green marketing are displayed in Table 2. The rankings reflect consumer perceptions of green

packaging, eco-labels, eco-friendly FMCG products, and their willingness to pay more for sustainable goods..

Table 2: Awareness and Perception toward Green Marketing (Likert Mean Scores)

Item	Mean Score (out of 5)
I am aware of eco-friendly FMCG products	4.2
I prefer products with eco-labels	4.0
Green packaging makes a product more trustworthy	3.9
I am willing to pay more for sustainable products	3.8

The results indicate that the participants possess a fairly high degree of awareness and favorable attitude towards green marketing. The average score of 4.2 for awareness of environmentally friendly FMCGs indicates high familiarity with sustainable products. Further, a liking for products carrying eco-labels (average score of 4.0) also indicates the preference of consumers towards eco-friendly products. Green packaging is perceived to lead to product trustworthiness (mean score of 3.9), while willingness to pay extra for sustainable products scores slightly lower at 3.8, reflecting a moderate price sensitivity despite favorable attitudes toward sustainability.

Figure 2 graphically represents the respondents' perception and awareness towards green marketing, highlighting the Likert mean scores for the most important items like awareness of eco-friendly products, preference for eco-labels, credibility of green packaging, and willingness to pay extra for sustainable products.

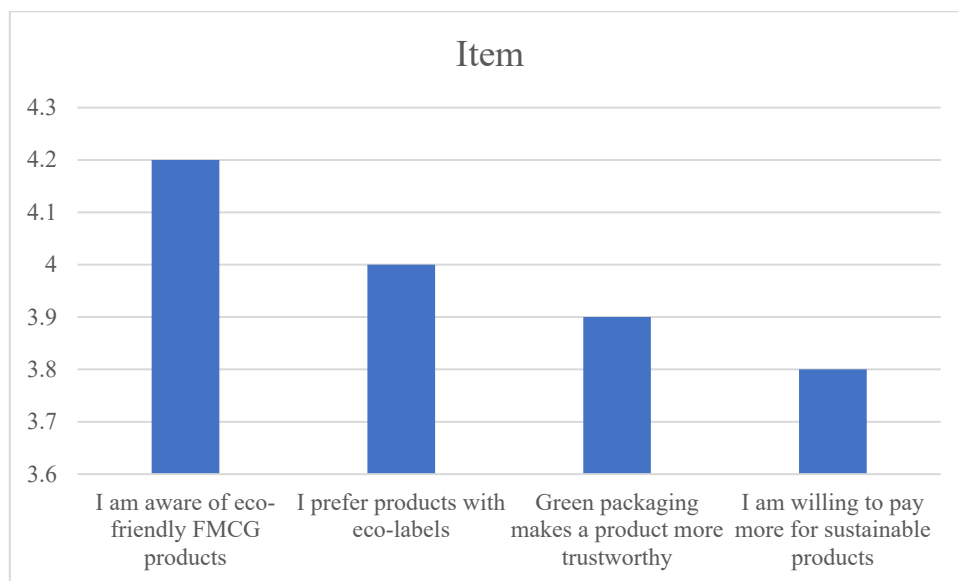


Figure 2: Graphical Representation of Awareness and Perception toward Green Marketing (Likert Mean Scores)

The graph is an evident representation of the positive consumer attitudes towards green marketing. The most significant mean score is the awareness of eco-friendly FMCG (4.2), followed by high affinity towards the use of eco-labels (4.0). Both the credibility of green packaging (3.9) and price premium for sustainable products (3.8) exhibit fairly consistent but lower levels of consumer support. These results indicate a high overall support for green marketing, with slight reservation towards premium pricing of sustainable products.

3.3. Impact on Buying Behavior

Table 3 presents the relationship between different green marketing factors (eco-label awareness, green packaging, and sustainable messaging) and consumer buying behavior. The correlation coefficients and respective p-values represent the magnitude and significance of the relationships.

Table 3: Correlation between Green Marketing and Purchasing Behavior

Variables	Correlation Coefficient (r)	Significance (p-value)
Eco-label Awareness × Purchasing	0.61	< 0.01
Green Packaging × Purchasing	0.58	< 0.01
Sustainable Messaging × Purchase	0.55	< 0.01

The table illustrates a strong positive correlation between green marketing strategies and consumer purchasing behavior. Awareness of eco-labels has the highest correlation with purchasing behavior ($r = 0.61$, $p < 0.01$), followed by green packaging ($r = 0.58$, $p < 0.01$) and sustainable messaging ($r = 0.55$, $p < 0.01$). All the correlations are statistically significant, indicating that customers are likely to buy products bearing green labels, packaging, and environmentally friendly marketing messages. The findings point out the efficacy of green marketing approaches in shaping the purchasing behavior of customers.

Figure 3 is a graphical illustration of the relationships between green marketing practices (eco-label awareness, green packaging, and sustainable messaging) and consumer buying behavior. The graph indicates the strength and significance of each relationship.

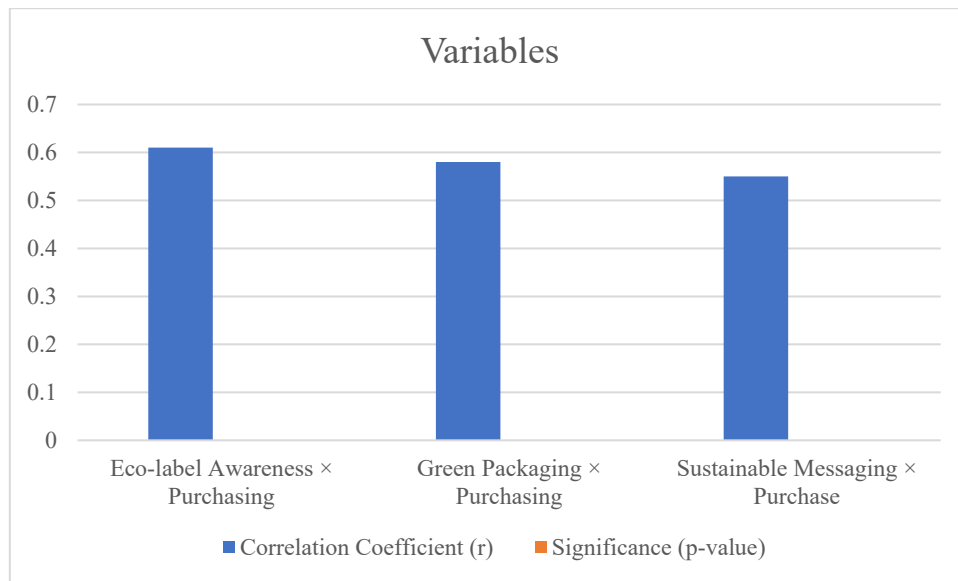


Figure 3: Graphical Representation of Correlation between Green Marketing and Purchasing Behavior

The graph strongly depicts the positive relationships among green marketing factors and buying behavior among consumers. Awareness of eco-label demonstrates the highest correlation, then green packaging, and sustainable messaging. All the relationships are shown to be strong, supporting the notion that consumers tend to buy products bearing eco-markers, packs, and sustainability calls. The visual evidence highlights the significance of green marketing tactics in influencing consumer purchasing behavior.

3.4. Brand Trust and Loyalty Influence

The results of an ANOVA test that assesses the relationship between brand commitment and green branding are shown in Table 4. Both the between-groups and within-groups variations' sum of squares, degrees of freedom (df), mean square, F-value, and significance level (p-value) are displayed in the table.

Table 4: ANOVA – Green Branding and Brand Loyalty

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.47	2	7.74	6.82	.002
Within Groups	337.12	297	1.13		
Total	352.59	299			

ANOVA results show statistically significant variation across the groups as far as green branding's influence on brand loyalty ($F = 6.82, p = 0.002$). Since the p-value is less than 0.01, it indicates green branding significantly affects brand loyalty. The results present that customers perceiving a brand as environmentally friendly are likely to show greater brand loyalty than others who do not perceive the brand as green-friendly.

3.5. Regression Analysis: Green Purchase Behavior Predictors

Table 5 displays the results of the multiple regression analysis, indicating the relationships between predictor variables (perception of eco-labels, green packaging perception, and green branding trust) and green purchase behavior. The table shows the Beta (β) coefficients, t-values, and significance levels (p-values) for each predictor variable.

Table 5: Multiple Regression – Predicting Green Purchase Behavior

Predictor Variable	Beta (β)	t-value	Sig. (p)
Awareness of Eco-labels	0.31	4.12	< .001
Perception of Green Packaging	0.28	3.76	< .001
Trust in Green Branding	0.24	3.21	< .01

The regression equation shows all three predictor variables—green labeling awareness, green packaging perception, and green branding trust—are reliable predictors of green purchase behavior. Awareness of green labeling ($\beta = 0.31, p < .001$) contributes the most positive effect on green purchase behavior, followed by perception of green packaging ($\beta = 0.28, p < .001$) and green branding trust ($\beta = 0.24, p < .01$). These results suggest that consumers who are more conscious of eco-labels, have a positive perception of green packaging, and believe in green branding tend to make environmentally friendly purchasing decisions.

4. DISCUSSION

4.1. Interpretation of Results

The current study's findings provide important new information regarding how customers' purchasing decisions in the FMCG sector are affected by green marketing strategies. The

findings show that consumers have a high degree of awareness and favorable attitude towards eco-products, especially those with eco-labels and green packaging. The research proves that green marketing factors like eco-label awareness, sustainable communication, and green packaging are highly related to buying behavior. This implies that green marketing efforts are effective in driving consumers' intentions to buy eco-products. Additionally, the regression analysis indicates that knowledge of eco-labels has the greatest impact on green buying behavior, followed by attitudes towards green packaging and green brand trust. This underlines the key role played by product labeling, packaging, and brand trust in driving sustainable consumer behavior.

4.2. Comparison with Existing Studies

This table 6 shows a comparison of the results of past research on consumer behavior towards green marketing in the FMCG industry. It points out some of the essential factors such as the impact of demographic variables, green marketing tools' role, and consumer feelings towards environmentally friendly products.

Table 6: Comparison of Green Marketing Influence on Consumer Purchasing Behavior in FMCG Sector with Existing Studies

Study Reference	Objective	Key Findings	Comparison with Current Study
Sethi, V. [11] (2018)	identifying the elements that influence consumers' attitudes towards eco-friendly FMCG product purchases.	Sethi found that consumer attitudes towards green products in FMCG are strongly influenced by eco-labeling and product features.	Similar to our study, Sethi's research identifies eco-labeling as a major determinant of green purchase behavior. However, our study further explores the relationship between green packaging and brand loyalty.
Sewwandi & Dinesha (2022) [12]	The effect of green marketing strategies on customer	The study suggests that consumer demographics (e.g.,	Our study similarly focuses on demographic variables but adds a specific

	demographics and green product buying patterns.	age, gender) moderate the impact of green marketing tools on purchasing decisions.	emphasis on income level and educational background as influencing green purchase behavior.
Singhal & Malik (2021) [13]	The attitude and purchasing behavior of female consumers towards green marketing in the cosmetic industry.	According to the report, women are more likely to buy eco-friendly products, especially if they have faith in the company.	Our findings corroborate this by emphasizing trust in green branding as a key influencer of consumer loyalty, though our focus is on a broader FMCG context rather than just cosmetics.
Sisodiya & Sharma (2018) [14]	The effect of marketing mix components on FMCG product purchasing behaviour	They found that product packaging and advertising are key influencers in shaping consumer purchase decisions in the FMCG sector.	While our study agrees with the importance of packaging, it specifically looks at green packaging's role in building trust and loyalty, extending Sisodiya and Sharma's conclusions.
Walia, Kumar & Negi (2019) [15]	Consumers' attitudes and purchase intentions towards 'green' products.	Although they are wary of price sensitivity, a sizable percentage of customers are willing to spend more for green products, according to this study.	Although our survey also finds a more modest price sensitivity, this supports our results that customers are prepared to pay extra for sustainable items, offering further insights into consumer behavior.

The comparison reveals consistency among studies on the significance of green marketing instruments, including eco-labeling and packaging, in influencing consumer behavior.

Nonetheless, the current study builds upon previous research by including other demographic variables such as income level and education. The study also focuses on the role of green packaging in enhancing consumer trust and brand loyalty, providing a richer explanation of green purchasing behavior in the FMCG industry.

4.3. Implications of Findings

The research has important implications for FMCG marketers. Businesses which place emphasis on environmentally friendly packaging, employ eco-labeling, and clearly communicate their green actions are more likely to gain credibility and brand loyalty from consumers. Additionally, the research implies that firms should work towards increasing consumer awareness of their green activities in order to promote more sustainable consumption patterns. As consumers get more environmentally conscious, these efforts will not just assist companies to enhance their position in the marketplace but also promote larger environmental aims.

4.4. Limitations of the Study

Despite the study providing useful insights, there are numerous limitations that ought to be regarded. To start with, the sample for this research was just consumers in metropolitan and semi-metropolitan markets, which is not representative enough of rural customers' behavior. Also, the research was conducted on FMCG products, and thus the findings may not be transferable to other industries. The use of self-reported information in the questionnaire may also create bias since the respondents might overestimate their pro-environmental attitudes and behaviors. Finally, the research only looked at the effect of certain green marketing strategies without considering other possible variables, including cultural or socioeconomic variables, that could also affect consumer behavior.

4.5. Recommendations for Future Research

Future studies can broaden the scope of this research by adding rural locations to examine possible differences in green buying behavior among various demographic groups. Longitudinal studies can also be undertaken to measure the long-term impact of green marketing practices on consumer behavior. Researchers may also explore other drivers of eco-consciousness in purchasing, i.e., ecological values, social norms, or the influence of social media for ethical purchasing. Finally, an inter-sectoral comparative study (e.g., electronics, fashion) would give insight into the general effect of green marketing strategies on industries.

5. CONCLUSION

This research sought to investigate the application of social media sites in library services with a view to understanding how these online tools can maximize accessibility, communication, and interaction among libraries and their customers. Based on feedback from librarians and library patrons, the study presents a cogent comprehension of the increasing influence of social media in the modern library environment.

5.1 Main Insights and Findings

The survey uncovered the fact that most of the respondents, especially the younger generation, more and more depend on social media websites to access library updates, notices, and interactive sessions. Libraries that were actively using sites such as Facebook, Instagram, and WhatsApp proved to be more effective in connecting users and promoting their services appropriately. Librarians noted that social media greatly enhanced communication with customers by enhancing immediate responses to questions, advertising events, and disseminating online resources. Nonetheless, the research also found various challenges to effective integration, such as inadequate staff training, a lack of official digital policy, and irregular posting frequencies.

5.2 Importance of the Study

The study is important for various stakeholders in the library and information science field:

- **For Libraries:** It identifies the ways social media can be used to upgrade service delivery, particularly for distant users or generations of technology savviness.
- **For Policymakers and Library Administrators:** The results emphasize the importance of investing in digital infrastructure and staff training to enable online outreach.
- **For Academic Research:** The research contributes to the literature by presenting empirical findings from actual data on the efficacy and constraints of employing social media in library environments.

5.3 Significance of the Study

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- **For Policymakers and Library Administrators:** The results highlight the importance of investing in staff development and digital infrastructure to facilitate online outreach.
- **For Academic Research:** The research contributes to the current literature by presenting empirical findings from actual data on the effectiveness and limitations of social media use in library settings.

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