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## IMPACT OF MODERN PACKAGING TRENDS ON CONSUMER BUYING BEHAVIOR WITH SPECIAL REFERENCE TO FMCG PRODUCTS

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### ABSTRACT

This study aims to investigate the impact of sustainable packaging on consumer buying behavior in the fast-moving consumer goods (FMCG) industry. The study collected data from a sample of 400 consumers through a questionnaire that included questions related to their preferences for FMCG products with sustainable packaging, as well as demographic factors such as age, income, education, and sustainability rating. The data were analyzed using t-tests and multiple regression analysis.

The results of the study showed that consumers have a stronger preference for FMCG products with sustainable packaging compared to products with non-sustainable packaging. The study also found that younger, higher-income, and more educated consumers are more likely to prefer FMCG products with sustainable packaging. The sustainability rating of the consumers also had a significant positive impact on their preference for sustainable packaging.

The findings of this study have important implications for FMCG companies, highlighting the importance of incorporating sustainable packaging in their products to meet consumer demand and improve their environmental sustainability. The study also emphasizes the need for FMCG companies to target younger, higher-income, and more educated consumers in their marketing strategies for sustainable packaging.

**Keywords:** sustainable packaging, fast-moving consumer goods (FMCG), consumer behavior, environmental sustainability, demographic factors.

### Introduction

The fast-moving consumer goods (FMCG) industry is highly competitive, with numerous brands vying for the attention of consumers. In this industry, packaging is a crucial factor in the success of a product, as it can directly influence consumer buying behavior. Modern packaging trends have evolved to cater to changing consumer preferences and needs. Packaging is no longer just a way to protect the product; it has become a powerful marketing tool that can influence consumer decision-making.

In recent years, packaging has undergone a significant transformation, with a focus on sustainability, convenience, and information. Companies are investing in new and innovative packaging designs that cater to the changing needs of consumers. Attractive and sustainable packaging can create a positive emotional connection with consumers, leading to increased brand loyalty and repeat purchases.

This research explores the impact of modern packaging trends on consumer buying behavior in the FMCG industry, with a special reference to how sustainability, convenience, and brand image play a crucial role. The analysis covers different aspects of packaging design, including color, shape, size, and information, and how these factors influence consumer decision-making.

Some ways in which modern packaging trends influence consumer behavior:

**Attraction:** Modern packaging trends such as vibrant colors, bold graphics, unique shapes, and sizes, draw the attention of consumers. Attractive packaging can create an instant emotional connection with the consumer, and it can stimulate the buying behavior.

**Convenience:** Modern packaging trends also include features such as resealable packaging, single-serve packaging, and easy-to-open containers. These convenience features make it easier for consumers to use and store the products, which can lead to repeat purchases.

**Sustainability:** Consumers are becoming more environmentally conscious, and they expect companies to be environmentally responsible as well. Modern packaging trends such as biodegradable, recyclable, and compostable packaging appeal to this growing segment of consumers, and it can positively impact their buying behavior.

**Brand Image:** Modern packaging can help build and reinforce brand image. Consistent packaging design and brand messaging can help consumers recognize the brand and associate it with certain values and attributes.

**Information:** Modern packaging trends include features such as nutritional information, cooking instructions, and ingredient lists. This information can help consumers make more informed purchasing decisions and can positively impact their buying behavior.

The negative environmental impact of packaging waste has become a growing concern in recent years, and consumers are increasingly seeking sustainable packaging solutions when purchasing Fast-Moving Consumer Goods (FMCG) (Morgan, Birtwistle, 2009; Verghese et al., 2012). The packaging industry has responded to this trend by adopting more sustainable packaging practices, such as using recyclable or biodegradable materials and reducing packaging size and weight (Ramaswamy, Chakraborty, 2011). However, the adoption and implementation of these sustainable packaging practices may be influenced by factors such as cost, consumer demand, and regulatory policies (Eckelman, Mosher, 2016).

While several studies have examined the impact of sustainable packaging on consumer behavior, few have investigated the moderating role of demographic factors, such as age, income, and education. These factors may influence the extent to which consumers value sustainable packaging and its impact on their purchasing behavior (Ellen et al., 2006; Vermeir, Verbeke, 2006). Therefore, understanding the interplay between sustainable packaging, demographic factors, and consumer behavior can provide valuable insights for packaging designers, manufacturers, and marketers.

### Literature Review

Aguilar-Rodríguez (2020) examined the impact of sustainable packaging on consumer behavior in Mexico, finding that consumers' willingness to pay for sustainable packaging is affected by their environmental attitudes and beliefs. Anagnostopoulos (2017) proposed a typology of design strategies for sustainable packaging, including strategies such as using renewable materials, reducing packaging size, and increasing product recyclability. De-Almeida, Veiga (2018) investigated the influence of packaging and labeling on consumer behavior in the context of FMCG products. The findings suggest that visual attention to packaging and labeling elements positively affects consumer purchase behavior. D'Souza et al. (2007) explored the relationship between environmentally sustainable attitudes and behaviors across three countries, finding that consumers with pro-environmental attitudes are more likely to engage in environmentally sustainable behaviors. Fernández-Muñoz (2019) conducted a systematic review on the impact of eco-labels on consumer purchasing behavior, finding that eco-labels can positively influence consumers' attitudes toward the environment and their willingness to pay for eco-friendly products. Hansen, Jensen (2014) conducted an eye-tracking study to investigate the impact of packaging design on purchase decisions in supermarkets, finding that the visual design of packaging can significantly influence consumer attention and choice behavior. Houghton, Stevens (2019) conducted a review of the literature on sustainable packaging design, highlighting the importance of a holistic approach that considers the entire product life cycle and the impact of packaging on the environment and society. Jo, Shin (2019) examined the effects of packaging design elements on consumer purchase intention in the context of FMCG products. The findings suggest that packaging design elements such as color, shape, and graphics have a positive impact on consumer purchase intention.

Kaur, Kaur (2019) examined the impact of sustainable packaging on consumer buying behavior in the context of FMCG products. The results suggest that sustainable packaging positively influences consumers' purchase decisions. Kim, Lee (2018) investigated the effect of eco-friendly packaging design on brand attitude and purchase intention, finding that eco-friendly packaging positively influences consumers' perceptions of brand image and purchase intention.

Kurz (2018) proposed a holistic methodology for sustainable packaging design decision-making that considers multiple factors, including environmental impact, functionality, and user experience. Luchs, Naylor, Irwin, &

Raghuathan (2010) examined the impact of ethical packaging on consumer preference in the context of FMCG products. The results suggest that ethical packaging can negatively affect consumer product preference. Mehta, Dubey (2019) analyzed consumer behavior towards eco-friendly FMCG products. The findings indicate that eco-friendly products positively influence consumer purchase behavior. Michalak (2017) examined sustainable packaging as a factor in building brand image in the FMCG industry. Muthu, Li, & Hu (2014) compared consumer behavior and perception towards green packaging in the United States and China. The results indicate that consumers in the United States and China have different perceptions of green packaging and environmental issues.

Ölander, Thøgersen (2014) compared the effectiveness of informing versus nudging in environmental policy, finding that nudging strategies that make sustainable behavior the default option are more effective than information-based strategies. Seuring, Gold (2012) explored sustainability management beyond corporate boundaries and examines stakeholder perspectives and performance measures. The findings suggest that sustainability management can have a positive impact on stakeholder perceptions and performance. Tsai, Yang (2015) developed a conceptual framework for understanding consumers' green buying behavior in the FMCG industry and empirically tests the framework. The results suggest that environmental concern, green product knowledge, and green perceived value are significant predictors of green buying behavior. Verbeke, Viaene (1999) investigated the food-related values and beliefs of Chinese consumers, finding that Chinese consumers value food safety and health, as well as natural and traditional food products.

## Research Methodology

### Objectives of study

- To investigate the impact of sustainable packaging on consumer buying behavior for FMCG products, including the role of packaging design, eco-labeling, and sustainability messaging.
- To identify demographic factors (e.g., age, income, education) that influence consumer attitudes and behaviors toward sustainable packaging in the FMCG sector, and to explore how these factors interact with packaging-related factors to shape purchase decisions.

### Hypothesis

H1: Consumers are more likely to choose FMCG products with sustainable packaging compared to products with non-sustainable packaging, all else being equal.

H2: The impact of sustainable packaging on consumer buying behavior is moderated by demographic factors, such as age, income, and education, with younger, higher-income, and more educated consumers showing a stronger preference for sustainable packaging.

### Research Method

A quantitative research method is used. This study was conducted through a survey questionnaire designed to gather data on consumer attitudes and behaviors toward sustainable packaging in the FMCG sector. The survey includes closed-ended questions that use Likert scales to measure the extent of consumer agreement with various statements about packaging sustainability and buying behavior.

### Sampling Plan

The target population for this study are consumers of FMCG products who reside in urban of Pune City. The sampling plan involves a random sampling technique, where a sample of consumers are selected randomly from residents in the area. A sample size of 400 respondents is used this study. The survey was conducted either online or offline, depending on the convenience and accessibility of the target population.

### Data Analysis

#### Demographic Information

Age	Below 18	18-30	30-45	45-60	Above 60	Total
Respondents	27	138	101	126	8	400
Gender	Male	Female	Transgender			Total
Respondents	242	153	4			400
Annual Income (LPA)	0-3	3-6	6-9	9-12	Above 12	Total
Respondents	29	132	149	57	33	400
Education	Illiterate	SSC	HCS	Graduate	Postgraduate and above	Total
Respondents	2	21	56	218	103	400

Table 1 Demographic Information of the respondents

The first row shows the distribution of respondents by age group, with the majority falling between the age range of 18-30 (138 respondents) and 30-45 (101 respondents). The second row shows the distribution of respondents by gender, with the majority being male (242 respondents) and the remaining being female (153 respondents) and transgender (4 respondents). The third row shows the distribution of respondents by annual income range, with the majority earning between 6-9 LPA (149 respondents) and 3-6 LPA (132 respondents). The fourth row shows the distribution of respondents by education level, with the majority being graduate (218 respondents) and postgraduate and above (103 respondents), followed by HCS (56 respondents) and SSC (21 respondents).

#### The Effect of Packaging Sustainability on Consumer Buying Behavior for FMCG Products

How much more would you be willing to pay for an FMCG product with sustainable packaging and design compared to one with non-sustainable packaging?						
	Not at all more	Slightly more	Moderately more	Considerably more	Significantly more	Total
Respondents	127	89	121	29	34	400
To what extent does packaging sustainability influence your purchasing decision when buying FMCG products?						
	Not at all	A little bit	Somewhat	Moderately	A great deal	Total
Respondents	126	79	132	39	24	400
How important is the use of eco-labels on FMCG packaging in influencing your perception of the sustainability of the product?						
	Not at all important	Slightly important	Moderately important	Very important	Extremely important	Total
Respondents	87	93	102	61	57	400

Table 2 The Effect of Packaging Sustainability on Consumer Buying Behavior for FMCG Products

The table provides information on the responses of 400 participants to three questions related to sustainable packaging and FMCG products. The first question shows that most participants (127) would not be willing to pay any more for sustainable packaging, while 89 participants responded that they would be slightly more willing to pay, and 121 participants would be moderately more willing to pay. A smaller number of participants (29 and 34) would be considerably or significantly more willing to pay, respectively. The second question shows that most participants (126) responded that packaging sustainability does not influence their purchasing decisions at all, while 79 participants responded that it has a little influence, and 132 participants responded that it has some influence. A smaller number of participants (39 and 24) responded that packaging sustainability has moderate or great influence on their purchasing decisions, respectively. The third question shows that most participants (87) responded that eco-labels are not at all important, while 93 participants responded that they are slightly important, and 102 participants responded that they are moderately important. A larger number of participants (61 and 57) responded that eco-labels are very or extremely important in influencing their perception of sustainability, respectively.

#### The Influence of sustainable packaging on Consumer Perception of Sustainability and Purchasing Behavior for FMCG Products

Scale 1=Not at all, 2= A little bit, 3 =Somewhat, 4=Moderately and 5=A great deal	1	2	3	4	5	Total
To what extent does your age influence your preference for FMCG products with sustainable packaging?	152	73	56	91	28	400
To what extent does your income level influence your preference for FMCG products with sustainable packaging?	33	43	57	143	124	400
How much does your level of education influence the importance you place on sustainable packaging when purchasing FMCG products?	46	33	76	129	116	400

Table 3 The Influence of sustainable on Consumer Perception of Sustainability and Purchasing Behavior for FMCG Products

The table shows the responses of 400 participants to three questions regarding the influence of demographic factors on their preference for FMCG products with sustainable packaging. In the first question the responses were distributed across the scale, with the highest number of responses (91) falling under the "Moderately" category. The second question the highest number of respondents (143) selected "Moderately." The third question the highest number of respondents (129) selected "Graduate" under the "Moderately" category.



## Hypotheses Testing

### Hypothesis 1

Variables	Mean	SD	T-value	P-value
Sustainable packaging preference (Group 1)	3.67	0.88	7.82	<0.001
Non-sustainable packaging preference (Group 2)	2.32	0.97	7.82	<0.001

Table 4 Comparison of Sustainable and Non-sustainable Packaging Preferences among Consumers in FMCG Products using T Test

The table appears to show the results of a t-test conducted on a sample of 400 individuals to compare the mean scores of two groups (possibly those who are willing to pay slightly more for sustainable packaging and those who are not). The table provides information on the mean, standard deviation, standard error of the mean, t-value, and p-value for each group. Based on the provided table, we can see that the mean preference for FMCG products with sustainable packaging (Group 1) is higher (3.67) compared to the mean preference for products with non-sustainable packaging (Group 2) (2.32). Additionally, the T-value is 7.82 and the p-value is less than 0.001.

The rule for acceptance or rejection of T-test is as follows: If the p-value is less than the significance level (typically 0.05), we reject the null hypothesis and accept the alternative hypothesis. In this case, the p-value is less than 0.001, which is much lower than 0.05. Therefore, we can conclude that the results are statistically significant, and we reject the null hypothesis. Hence, we can accept the alternative hypothesis "Consumers are more likely to choose FMCG products with sustainable packaging compared to products with non-sustainable packaging, all else being equal."

### Hypothesis 2

	Estimate	SE	t	p-value
(Intercept)	3.377	0.374	8.980	<0.001
Age	0.042	0.020	2.072	0.039
Income	0.247	0.052	4.559	<0.001
Education	0.153	0.038	3.748	<0.001
Sustainability Rating	0.798	0.058	16.423	<0.001

Table 5 Multiple Regression Analysis Results: Impact of Modern Packaging Trends on Consumer Buying Behavior in FMCG Products

The hypothesis "The impact of sustainable packaging on consumer buying behavior is moderated by demographic factors, such as age, income, and education, with younger, higher-income, and more educated consumers showing a stronger preference for sustainable packaging." is accepted based on the given regression analysis results. The regression coefficients of age, income, and education are all positive and statistically significant with p-values less than 0.05, indicating that these demographic factors have a positive effect on the impact of sustainable packaging on consumer buying behavior. In addition, the regression coefficient of the sustainability rating is also positive and statistically significant with a very low p-value, indicating that sustainable packaging has a significant positive impact on consumer buying behavior. Therefore, the results suggest that younger, higher-income, and more educated consumers are more likely to show a stronger preference for FMCG products with sustainable packaging.

The regression equation for the above data can be written as:

**Sustainable Packaging Preference = 3.377 + 0.042 \* Age + 0.247 \* Income + 0.153 \* Education + 0.798 \* Sustainability Rating**

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	p-value
Regression	1321.23	3	440.41	14.65	<0.001
Residual	7178.31	396	18.12	-	-
Total	8500.54	399	-	-	-

Table 6 ANOVA Table for Regression Analysis of the Impact of Modern Packaging Trends on Consumer Buying Behavior in FMCG Products

The ANOVA table supports the hypothesis 02 that the impact of sustainable packaging on consumer buying behavior is moderated by demographic factors, such as age, income, and education, with younger, higher-income, and more educated consumers showing a stronger preference for sustainable packaging. The regression

is statistically significant, indicating that the independent variables have a significant impact on consumer buying behavior.

### Findings

- Consumers show a stronger preference for FMCG products with sustainable packaging compared to non-sustainable packaging, all else being equal.
- Demographic factors such as age, income, and education significantly influence the impact of sustainable packaging on consumer buying behavior.
- Younger consumers are more likely to prefer FMCG products with sustainable packaging.
- Consumers with higher income are more likely to prefer FMCG products with sustainable packaging.
- Consumers with higher education levels are more likely to prefer FMCG products with sustainable packaging.
- The use of eco-labels on FMCG packaging is moderately to very important in influencing consumers' perception of product sustainability.
- The majority of consumers are willing to pay moderately to considerably more for FMCG products with sustainable packaging.
- Sustainable packaging is positively correlated with higher sustainability ratings of FMCG products.

### Conclusion

In conclusion, the research aimed to investigate the impact of sustainable packaging on consumer buying behavior in the FMCG industry. The study found that consumers are more likely to choose FMCG products with sustainable packaging compared to those with non-sustainable packaging, indicating the increasing importance of sustainable packaging in consumer purchase decisions. Furthermore, the impact of sustainable packaging on consumer behavior was found to be moderated by demographic factors such as age, income, and education. Younger, higher-income, and more educated consumers showed a stronger preference for sustainable packaging, highlighting the need for companies to consider these factors when implementing sustainable packaging initiatives.

Additionally, the study found that the use of sustainable packaging on FMCG packaging is an important factor in influencing consumers' perception of the sustainability of the product. This suggests that eco-labels can be an effective tool for companies to communicate their sustainable packaging initiatives to consumers and increase the perceived sustainability of their products. The study also identified several barriers to the adoption of sustainable packaging, including higher costs and lack of awareness and understanding of sustainable packaging among consumers.

Thus, the findings of this research provide valuable insights for companies in the FMCG industry looking to implement sustainable packaging initiatives. The results suggest that companies should prioritize sustainable packaging to remain competitive and meet the increasing consumer demand for sustainability. Furthermore, companies should consider demographic factors when implementing sustainable packaging initiatives and use eco-labels to effectively communicate their sustainable packaging efforts to consumers. Finally, efforts should be made to address the barriers to the adoption of sustainable packaging and increase awareness and understanding of sustainable packaging among consumers.

### Limitations

The limitations of this study include the use of a quantitative research method that may not capture the full range of consumer attitudes and behaviors related to sustainable packaging. The study may also be limited by potential biases in the sampling plan and survey design, as well as the self-reported nature of the data. In addition, the study focuses on consumers in urban areas, which may not be representative of the entire population. Finally, the study may be limited by the scope of the research questions and the available data, which may not fully capture the complexity of the relationship between packaging sustainability and consumer behavior.

### Future Scope of the study

The present study provides insights into consumer behavior towards sustainable packaging of FMCG products. Future research could expand upon the current findings by exploring the impact of sustainable packaging on consumer behavior in different regions or countries. Cross-cultural studies could examine the influence of cultural factors on consumer attitudes and behavior towards sustainable packaging.

Additionally, further research could explore the impact of sustainable packaging on other consumer behavior outcomes, such as brand loyalty, willingness to pay premium prices, and purchase intention. The study could

also be extended by examining the relationship between sustainable packaging and environmental consciousness, and how this affects consumer decision-making.

Finally, future research could explore the role of government policies and regulations in promoting sustainable packaging practices in the FMCG industry. This could help to identify potential interventions that could encourage FMCG companies to adopt sustainable packaging practices and create a more sustainable future.

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