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A Study on Green Marketing Strategies and Consumer Purchase Intention in the Packaged Fruit Juice Industry

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Abstract: Packaged fruit juice is widely marketed as Nutrient-rich and made from natural ingredients; however, its packaging material generates considerable waste, which has encouraged companies to adopt, green marketing. This research examines how green marketing strategies influence consumer buying intention in the packaged fruit juice industry. Green marketing was examined using four factors: green product and packaging, green promotion, green pricing, and green distribution. A structured questionnaire using a five-point Likert scale was conducted, and 158 fully completed questionnaires were assessed. Reliability was acceptable for all constructs (Cronbach's alpha between .76 and .89).Pearson correlation and simple regression demonstrated a strong positive relationship between green marketing strategies and purchase intention ($r = .62$, $p < .001$), with green marketing explaining about 38% of the variance in intention. A one-way ANOVA showed that purchase intention showed a significant difference between age categories, $F(3, 154) = 3.38$, $p = .020$, with younger respondents indicating higher intention. Green product and packaging was the highest rated dimension, while green pricing was rated least favourably. The study suggests reusable and clearly labelled packaging, trustworthy eco-communication that avoids greenwashing, reasonable pricing of green products, and communication tailored by age.

Keywords: green marketing; purchase intention; packaged fruit juice; sustainable packaging; green consumer behaviour; greenwashing

1. INTRODUCTION

The market for packaged fruit juice has experienced continuous growth as consumers search convenient beverages which are for immediate consumption. Packaged juices are usually sold in aseptic cartons, PET bottles, glass bottles, and metal cans. These packaging increase the shelf life, but they contribute to waste accumulation and multilayer cartons in particular are difficult to recycle. As a result, packaging has become the most evident environmental concern in the category, despite farming dominates the water requirements and carbon emissions associated with juice. To address this concern, companies are incorporating environmental considerations into their operations, which incorporates the marketing mix of product, price, promotion, and distribution to environmental objectives (Dangelico & Vocalelli, 2017; Kotler, 2011). In packaged juice industry, this approach involves environmentally responsible products and packaging, communicating environmental credentials, suitable pricing of green offerings, and distribution that limit ecological impacts. Green marketing can contribute to build trust and brand image, but Peattie and Crane (2005) argue that many green marketing initiatives lack a credible marketing framework or a meaningful environmental philosophy, and Delmas and Burbano (2011) show that greenwashing can undermine consumer confidence in green products. The extent to which green marketing actually influences buying decisions remains an empirical question. Purchase intention, defined as a consumer's stated likelihood of buying a particular product, is widely used as a measurable indicator of potential purchase behaviour because, in the Theory of Planned Behaviour, intentions together with perceived behavioural control account for considerable variance in actual behaviour (Ajzen, 1991). This research examines whether environmentally oriented marketing strategies shape consumers' intentions to purchase packaged fruit juice and whether vary across different consumer groups.

2. REVIEW OF LITERATURE

1. Peattie and Crane (2005) investigated the historical development of green marketing since the early 1990s and argued that many approaches were supported by neither an effective marketing philosophy nor a sound environmental philosophy They distinguished five types of misguided green marketing practices: green spinning, green selling, green harvesting, enviropreneur marketing, and compliance marketing.

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2. Ajzen (1991) examined the Theory of Planned Behaviour and indicated that intentions can be anticipated from perceptions, social pressures, and perceived control over behaviour, and that intentions, in combination with perceived behavioural control, explain substantial variance in actual behaviour. This justifies regarding willingness to buy as the response variable

3. Delmas and Burbano (2011) explored the external, corporate, and individual factors of greenwashing and highlighted that it can significantly reduce consumer and stakeholder trust in green products, especially where regulatory control is insufficient and unpredictable,

4. Kotler (2011) stated that marketers should no longer presume unlimited resources and non-existent environmental consequences, and that they need to modify their strategies on product design, pricing decisions, distribution channels, and brand development to seek sustainable development

5. Chen and Chang (2012) identified that green perceived value enhances environmental trust, and intentions to buy eco-friendly products, whereas perceived environmental risk adversely influences both variables, and that green trust partially mediates these associations.

6. Joshi and Rahman (2015) examined studies on sustainable purchasing behaviour and classified the determinants into individual factors and situational factors, the latter group incorporating product characteristics and packaging materials.

7. Magnier and Schoormans (2015) investigated how the visual design of product packaging and verbal environmental claims combine with consumers' ecological awareness in influencing responses to eco-friendly packaging.

8. Dangelico and Vocalelli (2017) comprehensively examined the studies on green marketing, investigating how definitions of green marketing have developed, the stages required in developing a green marketing strategy, and the attributes of sustainable marketing components. This justifies measuring green marketing based on components of the marketing framework.

9. Prakash and Pathak (2017) examined the willingness of young consumers in India to purchase sustainable packaged products, which makes their work a relevant prior study for the Indian packaging framework of the current research.

10. Steenis et al. (2017) explored how packaging materials and visual design influence consumer responses to green packaging, and revealed that environmental conservation is a prominent link with packaging however to a limited extent relevant for consumer perception.

Research gap. Previous research analyse green marketing overall or green packaging in general. Limited studies explore the entire green marketing mix in relation to purchase intention for a daily-use product segment such as packaged fruit juice, Especially, in the context of the Indian market.

3. OBJECTIVES OF THE STUDY

1. To evaluate the extent of consumers' perception of green marketing practices adopted by packaged fruit juice brands.
2. To explore the relationship between green marketing strategies and consumers' purchase intention.
3. To investigate differences in purchase intention across age groups.
4. To determine which element of the green marketing mix is most and least favourably perceived.
5. To recommend strategies for marketers to enhance green marketing effectiveness.

4. RESEARCH METHODOLOGY

Research design. A descriptive and analytical survey design was used.

Population and sample. The population was consumers of packaged fruit juice. Respondents were chosen through convenience sampling with the eligibility criterion that they had purchased packaged juice at least once in the past three months. A total of 158 usable responses were accepted for analysis after eliminating incomplete forms. Data were collected online from consumers in Mumbai

Data collection. Primary data were collected through an online structured questionnaire. Secondary data were obtained from journal articles, books, and industry sources.

Instrument. The questionnaire had two parts: (a) demographic details, and (b) statements on green marketing strategies (18 items across four dimensions) and purchase intention (5 items), all measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). A pilot test was carried out prior to the main survey.

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Variables.

Variable	Type	Dimensions
Green marketing strategies	Independent	Green product and packaging; green promotion; green pricing; green distribution
Purchase intention	Dependent	Intention to buy, recommend, and prefer green-packaged juice
Age group	Grouping variable	18-25, 26-35, 36-45, 46 and above

Tools of analysis. Percentage analysis, mean and standard deviation, Cronbach's alpha, Pearson correlation, simple linear regression, and one-way ANOVA with Tukey post hoc test, run at a 5% significance level.

5. HYPOTHESES

H1
$H1_0$: There is no significant relationship between green marketing strategies and consumer purchase intention.
$H1_1$: There is a significant positive relationship between green marketing strategies and consumer purchase intention.
H2
$H2_0$: There is no significant difference in purchase intention across age groups.
$H2_1$: There is a significant difference in purchase intention across age groups.

6. DATA ANALYSIS AND INTERPRETATION

6.1 Respondent profile (N = 158)

Variable	Category	Frequency	Percentage
Gender	Male	82	51.9%
	Female	74	46.8%
	Other	2	1.3%
Age	18-25 years	48	30.4%
	26-35 years	57	36.1%
	36-45 years	33	20.9%
	46 years and above	20	12.7%
Education	Up to higher secondary	22	13.9%
	Graduate	66	41.8%
	Postgraduate	58	36.7%
	Doctorate / professional	12	7.6%

Most respondents (66.5%) were aged 35 or below, and 78.5% held a graduate or postgraduate degree.

6.2 Reliability and descriptive statistics

Construct	Items	Mean	SD	Cronbach's alpha
Green product and packaging	5	3.82	0.71	.84
Green promotion	5	3.64	0.78	.81
Green distribution	4	3.37	0.82	.76
Green pricing	4	3.21	0.86	.78
Overall green marketing strategies	18	3.53	0.62	.89
Purchase intention	5	3.68	0.74	.87

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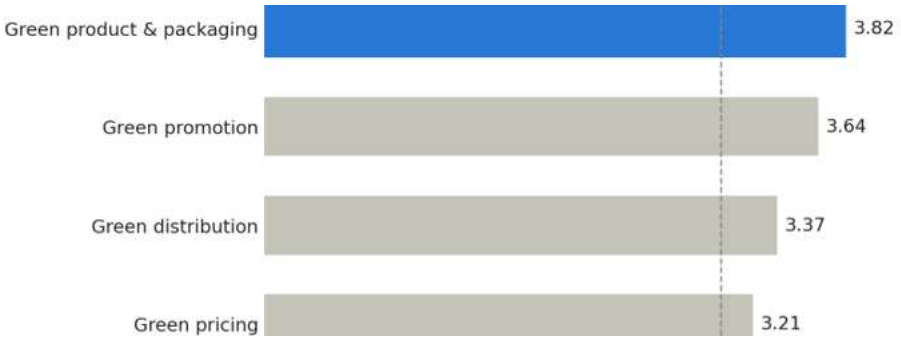
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All alpha values exceed the commonly accepted .70 threshold (Nunnally, 1978; Hair et al., 2019), so the scales are reliable. Green product and packaging received the highest mean, whereas green pricing received the lowest, suggesting that consumers like green packaging but are cautious about the price of green products.

Figure 1. Mean scores of green marketing dimensions and purchase intention (see chart below).
Green packaging rates highest (3.82) and green pricing lowest (3.21)

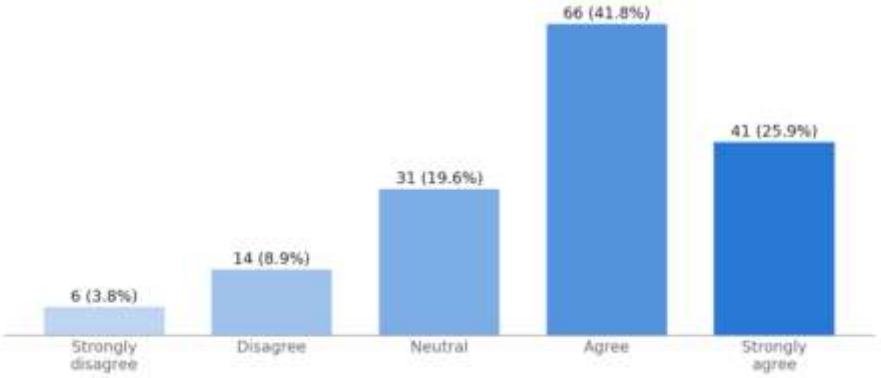


6.3 Distribution of responses on the item "I intend to buy packaged juice in sustainable packaging"

Response	Frequency	Percentage
Strongly disagree	6	3.8%
Disagree	14	8.9%
Neutral	31	19.6%
Agree	66	41.8%
Strongly agree	41	25.9%

About 67.7% of respondents agreed or strongly agreed, 19.6% were neutral, and 12.7% disagreed.

Figure 2. Response distribution for the purchase intention item (see chart below).
67.7% agree or strongly agree they intend to buy juice in sustainable packaging



6.4 Testing of Hypothesis 1

Test used: Pearson correlation and simple linear regression (independent variable: overall green marketing strategies; dependent variable: purchase intention).

Statistic	Value
Pearson r	.62
p-value	< .001
R^2	.38
F(1, 156)	97.41, p < .001

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Unstandardised coefficient (b)	0.74 (SE = 0.075)
95% CI for b	[0.59, 0.89]
Standardised beta	.62
Constant	1.07

Regression equation: Purchase intention = 1.07 + 0.74 × (Green marketing strategies).
Supplementary correlations of each dimension with purchase intention:

Dimension	**r with purchase intention**	**p**
Green product and packaging	.58	< .001
Green promotion	.55	< .001
Green distribution	.44	< .001
Green pricing	.41	< .001

Decision: Since p < .001 (below .05), $H1_0$ is rejected and $H1_1$ is accepted. Green marketing strategies have a significant and strong positive relationship with purchase intention, and a one-point increase in perceived green marketing is associated with a 0.74-point increase in intention.

6.5 Testing of Hypothesis 2

Test used: One-way ANOVA (factor: age group; dependent variable: purchase intention). Levene's test was non-significant (p = .62), so equal variances were assumed.

Age group	**n**	**Mean**	**SD**
18-25	48	3.86	0.70
26-35	57	3.74	0.72
36-45	33	3.52	0.75
46 and above	20	3.31	0.76
Total	158	3.68	0.74

Source	**Sum of squares**	**df**	**Mean square**	**F**	**p**
Between groups	5.34	3	1.78	3.38	.020
Within groups	81.03	154	0.53		
Total	86.37	157			

Effect size: eta squared = .06, a medium effect (Cohen, 1988).
Tukey post hoc comparisons showed that only the 18-25 and 46-and-above groups differed significantly (mean difference = 0.55, p < .05). Other pairs were not significant.

Decision: Since p = .020 (below .05), $H2_0$ is rejected and $H2_1$ is accepted. Purchase intention differs significantly across age groups, with intention declining as age increases.

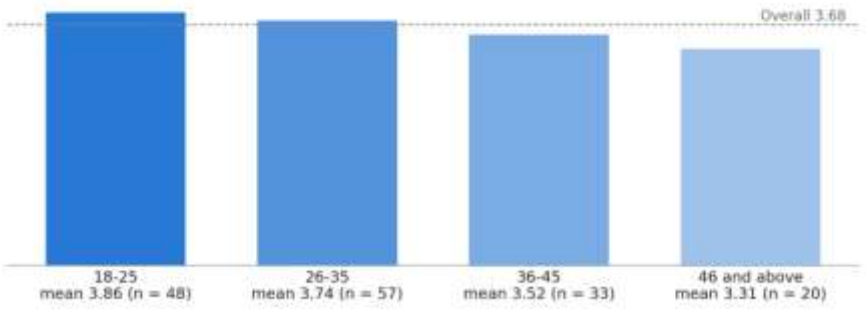
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Figure 3. Mean purchase intention by age group (see chart below).
Purchase intention falls with age from 3.86 (18-25) to 3.31 (46 and above)



7. FINDINGS AND DISCUSSION

1. Consumers evaluate eco-friendly product and packaging most favourably (M = 3.82) and green pricing least favourably (M = 3.21). Packaging modifications tend to be observed and valued, whereas price persists as the least effective element in the sustainable product offering
2. Green marketing strategies account for nearly 38% of the variation in purchase intention. This is in line with Chen and Chang (2012), who observed that green perceived value and trust influnce green purchase intention, despite the fact that this study did not include a direct measure of trust.
3. Product packaging and promotion activities reveal the strongest association with intention (r = .58 and .55). This supports the perspective, that packaging works as a marketing instrument (Magnier & Schoormans, 2015; Steenis et al., 2017), but because Steenis et al. found sustainability only relatively important for consumer attitudes, packaging by itself may be insufficient.
4. Young consumers display willingness to purchase than older consumers. Previous studies conducted in India on eco-friendly packaged products focused on young consumers (Prakash & Pathak, 2017), so this age-based pattern contributes additional evidence on how intention levels differ across age groups.
5. Around one in five respondents is neutral, pointing to a potential opportunity to convert consumers with neutral attitudes through trustworthy communication, and a risk if claims seem overstated (Delmas & Burbano, 2011).

8. CONCLUSION

The findings indicate that green marketing strategies exert a significant favourable influence on consumers' purchase intention for packaged fruit juice. Out of the four elements, green product and packaging and green promotion matter most, while green pricing is the weakest aspect. Purchase intention also changes across demographic segments, with young consumers more responsive than older consumers. Green marketing accordingly is highly effective when green claims are reinforced by actual product enhancements and packaging redesign, and when price and ease of access support the eco-conscious product offering,

9. RECOMMENDATIONS

1. Emphasis on eco-friendly packaging, Shift towards recyclable packaging materials, packaging made from a single material or lightweight packaging solutions and introduce recycled material whenever possible.
2. Provide clear communication with trustworthiness. Use clearly defined statements, verified eco-certifications and waste disposal guidance on pack, and avoid unclear terminology such as "eco- friendly" without evidence, to prevent misleading environmental claims.
3. Examine eco-friendly pricing strategies. Because pricing obtained the lowest score, intoduce value packs, refill or return-and-reuse schemes, and special offers on sustainable alternatives to reduce the additional cost.
4. Age-based targeting. Adopt social media platforms and Digital marketing campaigns for young consumers, and focus on brand credibility, nutritional benefits, and functional advantages for older consumers.
5. Adhere to regulatory standards. Support the manufacturer responsibility mechanism and disclose progress on packaging targets.

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10. LIMITATIONS AND SCOPE FOR FURTHER RESEARCH

The sample (n = 158) was obtained through Non-probability convenience sampling, so research outcomes cannot be broadly applied to the overall consumer market. Purchase intention might not lead to actual purchase. Further research could use larger random samples, evaluate actual purchase data, examine mediating variables such as confidence in sustainability claims and product benefits, and perform a comparative analysis with alternative beverages.

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