



# Green Marketing Strategies and Consumer Preferences: An Empirical Analysis of Pricing, Promotion, Packaging, and Labeling

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Received: 01 September 2025

Accepted: 04 January 2026

DOI: <https://doi.org/10.32479/irmm.21752>

## ABSTRACT

Growing consumer awareness of environmental issues has reshaped purchasing behavior, creating demand for sustainable and eco-friendly products. Businesses are increasingly adopting green marketing strategies to respond to this shift, yet limited research has been conducted in localized contexts such as the Philippines. Understanding how key marketing mix elements influence consumer preferences for green products is vital for both theory and practice. This study aimed to examine the influence of green marketing strategies in terms of price, promotion, packaging, and labeling on consumer buying preferences for green products in Naawan, Misamis Oriental. Specifically, it sought to determine which factors most significantly predict consumer choices and how these elements interact in shaping sustainable consumption. A quantitative, descriptive-correlational research design was employed. Data were collected from 300 respondents using a structured questionnaire and analyzed through correlation and regression techniques to measure the strength and predictive power of each marketing variable. Results revealed that all four variables significantly influence consumer preference, with promotion exerting the strongest effect, followed by price, packaging, and labeling. These findings indicate that effective promotional strategies and competitive pricing are the most powerful drivers of green product adoption, while sustainable packaging and credible labeling play important but comparatively supportive roles. The study contributes to the growing body of green marketing literature by highlighting localized consumer behavior. It underscores the importance for businesses and policymakers to integrate promotional, pricing, and sustainability practices to strengthen market acceptance and environmental responsibility.

**Keywords:** Green Products, Consumer Buying Preferences, Pricing, Promotion, Packaging, Labeling

**JEL Classifications:** M1, M3, M31

## 1. INTRODUCTION

Consumers today are more aware and discerning about the products they purchase than ever before. This heightened consciousness extends not only to quality and price but also to the environmental impact of their consumption choices. As a result, businesses are increasingly pressured to adopt sustainable practices and respond to the growing demand for eco-friendly products. One response to this shift has been the rise of green marketing,

which emphasizes the creation and promotion of goods that are developed with environmental sustainability in mind (Fernando, 2022). Through sustainable product design, environmentally friendly packaging, and eco-conscious promotional strategies, businesses seek to reduce their ecological footprint while meeting consumer expectations.

Beyond producing environmentally friendly goods, businesses are also adopting broader green marketing strategies. Green marketing



strategy refers to the systematic effort to promote products in a way that emphasizes sustainability, while also aligning with long-term business goals (Indeed, 2021). By integrating this approach, businesses not only enhance their profitability but also strengthen their reputation as socially responsible organizations. This dual benefit makes green marketing an attractive and viable business practice.

The urgency of adopting such practices stems from the broader challenges of environmental degradation. Industrial firms and factories remain among the leading contributors to pollution, particularly air pollution, which poses significant risks to human health and the natural environment (Liang and Renneboog, 2017). Historically, many businesses prioritized profit over sustainability, often overlooking the environmental consequences of their operations. However, growing awareness of these impacts has inspired entrepreneurs, researchers, and innovators to develop new solutions aimed at reducing environmental harm and ensuring more sustainable use of natural resources. One such solution is the transition toward eco-friendly or green business models.

As a result, many businesses have begun prioritizing green marketing to enhance consumer trust and strengthen brand awareness. Research indicates that green marketing not only fosters consumer confidence but also increases the likelihood of purchasing environmentally friendly products (Lin and Vlachos, 2018). For example, Tien et al., (2021) emphasized that, especially in the post-COVID-19 era, businesses must market their green products honestly and effectively in order to build consumer trust. To encourage purchases, companies are also expected to highlight motivational factors such as ethical values, product quality, and accessibility, while ensuring that production processes do not compromise either human health or environmental sustainability.

The significance of green marketing extends beyond individual businesses; it plays a vital role in broader community and environmental sustainability. As consumer behavior increasingly reflects concern for ecological and social well-being, purchasing habits have shifted toward products that are responsibly produced, used, and disposed of (Prakash and Pathak, 2017). In response to this trend, green marketing has evolved into a necessity rather than an option, as it enables businesses to remain relevant in expanding markets for environmentally friendly and socially responsible goods and services.

At the same time, consumers continue to demand products that balance quality, affordability, and environmental responsibility. This presents both a challenge and an opportunity for businesses to innovate in developing sustainable products and strategies (Rathore, 2022). Green marketing thus emerges as a bridge between consumer expectations and business sustainability, offering competitive advantages while addressing pressing environmental concerns.

Despite the growing global body of literature on green marketing, significant gaps remain in understanding consumer preferences within specific contexts. In particular, limited research has been conducted in the Philippines, and even fewer studies have explored

green marketing in the province of Misamis Oriental. Addressing this gap is essential to provide a localized understanding of how green marketing strategies—particularly the pricing, promotion, packaging and labelling of green products—influence consumer preference. By examining these dynamics, this study contributes to both theoretical insights and practical implications for businesses seeking to integrate sustainability into their operations.

## 2. LITERATURE REVIEW

The concept of green marketing strategy refers to marketing approaches and activities designed to align with ecological responsiveness, thereby reducing or eliminating negative effects on the environment and society. A company's business operations rely on a comprehensive set of marketing mix elements—such as product and package design, distribution channels, promotion, communication, and pricing—since these elements convey the firm's value proposition to consumers and ultimately influence its financial performance (Alonzo et al., 2025). According to Karna et al. (2003), green marketing provides businesses with an avenue to achieve financial objectives while addressing consumers' evolving needs, which increasingly stem from heightened environmental awareness. In this context, companies are expected to take responsibility for ethically sourcing raw materials, adopting sustainable processes, and delivering products and services that are considerate of both people and the environment. As emphasized by Vilkaite-Vaitone and Skackauskiene (2019), organizations also stand to benefit from adopting environmentally conscious methods, as they, too, are affected by the environmental harm generated by other firms and society at large. Thus, green marketing strategies not only reduce ecological damage but also enhance social responsibility, foster consumer trust, and contribute to long-term business growth.

Further, recent studies highlight how specific elements of the green marketing mix influence consumer behavior. Kaur et al. (2022) examined the impact of green marketing strategies on the purchasing intentions of Indian millennials toward eco-friendly personal care products. The findings revealed that attributes of green products, their availability (green place), and green promotional strategies significantly shaped consumers' intentions to purchase sustainable goods. Interestingly, green pricing strategies had limited influence, suggesting that consumers may not yet fully associate premium pricing with sustainability. Instead, Indian millennials perceived green products as beneficial due to their safety, health advantages, and superior quality. The study also underscored the pivotal role of promotional strategies, revealing that consumer trust in marketers' claims is a stronger determinant of purchase intention than the perceived ability of green products to address broader environmental challenges. Building on this, forming strategic partnerships with merchants and service providers through co-branded promotions can enhance consumer confidence, foster stronger brand loyalty, and expand market reach (Alonzo et al., 2025).

### 2.1. The Influence of Pricing to Consumer Preference on Green Products

Pricing decisions for both green and non-green products play



a critical role in shaping market demand and supply chain performance. For consumers, price often remains the most decisive factor when considering green products, as affordability directly influences their willingness to adopt eco-friendly alternatives. This trend aligns with post-pandemic recovery patterns observed in small businesses across emerging economies, where income rebound is gradual and shaped by limited market reach and disrupted supply chains (Abellana and Alonzo, 2025). In support of this, Taleizadeh et al. (2018) emphasized the importance of pricing strategies within supply chain contexts, examining producer and retailer decisions across models such as single-channel forward supply chains and dual-recycling channels, further underscoring the central role of pricing in both consumer behavior and supply chain efficiency. Their findings suggest that appropriate pricing mechanisms, when combined with recycling initiatives, can help balance profitability and sustainability. Similarly, Ghadimi et al. (2019) emphasized that green supply chain management seeks to provide consumers with environmentally responsible products at reasonable prices, thereby promoting both commerce and ecological preservation.

Building on this perspective, Rahmani and Yavari (2019) proposed a pricing and green production model using the Stackelberg game technique to explore how market demand fluctuations affect performance under centralized and decentralized decision-making. Heydari et al. (2019) also employed the Stackelberg approach to investigate optimal pricing and coordination strategies, accounting for the influence of online platforms. These studies converge on the view that consumer awareness, production costs, and demand elasticity significantly shape pricing outcomes. As Taleizadeh et al. (2018) demonstrated, raising consumer environmental awareness while lowering greening costs creates a positive cycle where demand for green products rises, benefiting both the economy and the environment. The more environmentally conscious buyers become, the more they are willing to pay for green products, generating higher profitability for businesses.

Recent empirical evidence further supports this link between pricing, quality, and consumer behavior. Alkhatib et al. (2023) found that consumers are willing to pay premium prices for eco-friendly products that are perceived as high-quality, demonstrating that an environmentally friendly image enhances consumer satisfaction. Their study also underscored the continued importance of personal selling efforts, showing that effective communication can justify higher prices in consumers' minds. In line with this, Basiri and Heydari (2017) argued that manufacturers and retailers must integrate green quality improvements and green sales efforts into their pricing strategies to better meet consumer expectations.

Beyond product-level strategies, green finance innovations also reflect consumers' and investors' willingness to pay for sustainability. The rapid growth of the green bond market demonstrates a robust demand for climate-related investments. Institutional and retail investors increasingly prioritize sustainable instruments such as green bonds, motivated by both financial returns and environmental impact (Climate Bonds Initiative, 2019). From the issuer's perspective, green bonds not only fund environmentally friendly projects but can also reduce financing

costs, thereby creating an incentive to align corporate strategies with sustainability (Ehlers and Packer, 2017). This broader evidence indicates that pricing strategies tied to environmental responsibility resonate strongly with both consumers and investors.

In the context of market competitiveness, Yang and Xiao (2017) argued for pricing strategies that explicitly consider environmental impacts, while Ma et al. (2018) explored integrated pricing and procurement models to enhance supply chain efficiency for products with substitutes. Such approaches highlight the need for pricing systems that not only reflect market dynamics but also reinforce the value of sustainability. Taleizadeh et al. (2018) further suggested that optimal pricing schemes should account for resource constraints while balancing consumer demand with environmental objectives.

Ultimately, pricing exerts a dual influence on consumer behavior toward green products: It shapes perceptions of value while also signaling product quality. Eco-friendly goods often demonstrate a positive relationship between price sensitivity and perceived quality, suggesting that consumers interpret higher prices as an indication of superior sustainability and performance (Alkhatib et al., 2023). For online shoppers, however, affordability alone is insufficient; they seek an optimal balance between competitive pricing and product excellence. In business-to-business (B2B) contexts, buyers likewise exhibit willingness to pay more for high-quality green products, though they place strong emphasis on fairness and reasonableness in price negotiations. Gelderman et al. (2021) confirmed that while product price positively affects satisfaction, equitable pricing practices are even more crucial in ensuring long-term trust and loyalty.

Taken together, the literature suggests that while price remains a central factor influencing consumer decisions, its impact is mediated by perceptions of quality, trust, and fairness. Consumers demonstrate growing acceptance of premium prices for green products, provided that these prices are justified through tangible environmental benefits, product excellence, and transparent business practices.

H<sub>1</sub>: Pricing significantly influences consumer buying behavior on green products.

## 2.2. The Influence of Promotion to Consumer Preference on Green Products

Utilizing promotional methods is among the most critical components of any effective marketing strategy (Obiso et al., 2025), as promotion plays a pivotal role in shaping consumer awareness, perceptions, and behaviors toward green products. Promotion involves conveying messages to customers with the aim of motivating them to buy products (Ambito et al., 2025). In China, for instance, government initiatives such as garbage sorting programs have yet to fully benefit the waste classification industry, indicating the need for more effective promotional and educational measures (Chen et al., 2021). Innovative tools such as "Internet Plus" have demonstrated a greater promotional impact on state-owned enterprises, high-tech industries, and firms in the eastern regions of China, contributing to the green



transition by enhancing innovation (Li et al., 2023). Studies further reveal that the transformation efficiency of green innovation in pollution-intensive industries still has significant potential for improvement, with promotional efforts playing a role in enhancing both productivity and awareness (Wang and Li, 2020). These examples illustrate that green promotion extends beyond traditional marketing, contributing to systemic change by raising awareness and encouraging sustainable practices.

From a consumer perspective, effective promotional strategies are vital in building trust and motivating green purchasing decisions. Marketers are encouraged to highlight the tangible benefits and long-term value of eco-friendly products, as these messages positively influence consumer perceptions (Sudjatmiko and Soegoto, 2018). Green promotion tools have also been shown to strengthen green brand equity and purchase intention, with strong links between brand image, credibility, and consumer trust (Dinh et al., 2023). Moreover, promotional strategies should go beyond persuasion; they should fulfill an educational function, encouraging both stakeholders and consumers to adopt sustainable practices while maintaining transparency and consistency with sustainability principles (Pomeroy, 2017). In doing so, companies not only promote their products but also foster stronger, more trust-based relationships with their customers.

The literature on green promotion (GP) consistently emphasizes its role as a communication process aimed at disseminating knowledge, creating awareness, and reinforcing the credibility of environmental claims. Firms employ diverse tools such as advertising campaigns, websites, sustainability reports, eco-labels, and environmental certifications to communicate their green initiatives (Amegbe et al., 2017). By doing so, GP supports the integrity of environmental claims and signals to consumers that the products are aligned with eco-friendly practices, often through the use of recycled, reused, or remanufactured materials (Martinez-Martinez et al., 2019). In essence, green promotion refers to advertising and communication activities that seek to persuade consumers to purchase and adopt green products while fostering a broader commitment to environmental sustainability (Mahmoud et al., 2017).

Practical applications of green promotion include initiatives such as environmental sponsorships, the introduction of eco-friendly product modifications, and campaigns centered on sustainability values. Mahmoud (2018) identified these practices as forms of environmental communication, which aim not only to market products but also to influence consumer lifestyles and behaviors toward more sustainable choices. As Rajput et al. (2022) observed, exposure to green promotional activities helps consumers become more informed about sustainable consumption and motivates them to improve both their own quality of life and the environment. Taken together, these findings reinforce the view that promotion is not merely a marketing tool, but a strategic driver of consumer engagement, education, and long-term commitment to sustainability.

H<sub>2</sub>: Promotion significantly influences consumer buying behavior on green products.

### 2.3. The Influence of Packaging to Consumer Preference on Green Products

Over the past decade, green packaging has gained significant attention among both businesses and consumers, reflecting the rising awareness of environmental sustainability. This has driven a shift in purchasing habits toward eco-conscious packaging, propelled by the growing recognition of the harmful effects of conventional packaging methods (Frias et al., 2025). Consequently, packaging is no longer seen merely as a means of protecting products but is now expected to be environmentally responsible to help reduce the negative impacts of packaging waste. Many companies promote eco-friendly packaging as a demonstration of their commitment to sustainability, thereby enhancing brand image and recognition (Byrne, 2017). For example, McDonald's has promoted the use of biodegradable paper in its food packaging as part of its eco-friendly materials strategy, while Walmart has adopted the "4Rs" approach—reduce, reuse, recycle, and rethink—to lessen packaging waste. Such initiatives reflect the growing expectation that firms should actively reduce their environmental footprint.

Research suggests that environmentally responsible packaging positively affects consumer attitudes and purchasing behavior. Drobac et al. (2020) emphasize that consumers are more likely to remain loyal to firms demonstrating a strong environmental commitment. Similarly, Steenis et al. (2017) highlight that consumers prefer packaging that is visibly eco-friendly, while Simmonds and Spence (2017) argue that packaging not only influences consumer perceptions but also purchasing choices, all while ensuring product protection. Studies also reveal that environmental concern plays a key role: Prakash and Pathak (2017) show that younger consumers are especially responsive to green packaging, with positive attitudes toward paying more for sustainable alternatives. Rana and Paul (2017) likewise contend that green consumers are often willing to pay a premium for eco-friendly products compared to conventional alternatives.

More recent findings reinforce these insights. Prakash and Pathak (2017) note that young consumers' willingness to pay for high-quality brands translates into stronger purchase intentions for green products packaged sustainably. Supporting this, Alkhatib et al. (2023) establish a strong relationship between environmental beliefs and packaging design, revealing that eco-friendly packaging significantly influences both consumers' willingness to pay a premium and their intention to purchase. These findings suggest that packaging functions not only as a practical necessity but also as a symbol of environmental responsibility, capable of shaping consumer preferences, loyalty, and price sensitivity.

In summary, green packaging serves as both a protective function and a powerful promotional tool. It signals a company's environmental values, enhances consumer trust, and directly impacts purchasing decisions—especially among environmentally conscious and younger consumer groups. By integrating sustainable packaging strategies, businesses can differentiate themselves in competitive markets while fostering stronger consumer loyalty and long-term commitment to eco-friendly consumption.



H<sub>3</sub>: Packaging significantly influences consumer buying behavior on green products.

## 2.4. The Influence of Labeling to Consumer Preference on Green Products

The influence of eco-labeling on consumer purchase decisions has emerged as a growing area of study in the field of sustainability and green marketing. Eco-labels are symbolic claims that a product or service possesses specific environmentally friendly attributes, such as reduced carbon footprint, recyclable packaging, or energy efficiency. According to the European Union (EU), eco-labeling is a voluntary program designed to provide consumers with clear and reliable information at the point of sale through a standardized symbol, thereby enabling them to recognize the ecological benefits of products and services. As such, eco-labels function not only as an informational tool but also as a mechanism to guide environmentally conscious decision-making.

For eco-labels to be effective, consumer trust is critical. Gandhi (2021) emphasizes that companies must ensure the truthfulness of their sustainability claims, as misleading or exaggerated labeling can erode consumer confidence and undermine the credibility of green products. Similarly, Samaraweera et al. (2021) examined the role of label design and found that color plays a significant role in consumer perception, with white labels sometimes being preferred over green ones. This suggests that both visual appeal and message clarity are important for eco-label effectiveness.

Eco-labels also act as differentiation tools in competitive markets. Liu et al. (2017) highlight that eco-labeling helps producers and retailers signal the environmental friendliness of their offerings in areas such as health, safety, and energy efficiency, thereby attracting consumers away from less sustainable alternatives. Furthermore, eco-labels enable consumers to identify the most environmentally responsible options with confidence, reducing uncertainty in the decision-making process. By making sustainability attributes more transparent, labeling enhances consumer awareness and strengthens purchase intentions toward green products.

In summary, eco-labeling plays a dual role: it informs consumers about the environmental attributes of products and builds trust in a brand's sustainability claims. When designed credibly and communicated effectively, eco-labels serve as a powerful green marketing strategy, influencing purchase intentions, encouraging loyalty, and motivating consumers to prioritize eco-friendly alternatives over conventional products.

H<sub>4</sub>: Labeling significantly influences consumer preference on green products

## 3. RESEARCH METHODOLOGY

### 3.1. Data Collection

This study adopted a quantitative, descriptive-correlational research design to examine the relationships among variables without implying direct causation. As Creswell (2002) notes, such a design allows for statistical analysis, hypothesis testing, and the identification of patterns and associations among constructs.

Data was collected using a structured questionnaire composed of closed-ended, Likert-scale items designed to measure consumer preferences and perceptions toward green product strategies, specifically pricing, promotion, packaging, and labeling. This instrument ensured the standardization of responses, enabling statistical comparison and analysis. The research was conducted in Naawan, Misamis Oriental, Philippines, utilizing a purposive sampling technique to select 300 respondents based on specific inclusion criteria: (a) participants must be residents of Naawan, Misamis Oriental, and (b) must be at least 18 years of age. This sampling method ensured that only individuals relevant to the study's objectives were included.

For data analysis, both descriptive and inferential statistics were employed. Descriptive statistics summarized the respondents' demographic profile and general perceptions of green product strategies. Furthermore, to assess the predictive power of each green marketing strategy (pricing, promotion, packaging, and labeling) on consumer buying behavior, multiple regression analysis was conducted. This statistical approach enabled the study to identify which strategies significantly influence consumer purchase decisions and the extent of their contribution.

## 4. DATA ANALYSIS

### 4.1. Demographic Profile

Table 1 presents the demographic profile of the respondents. In terms of age distribution, the largest group falls within the 26–35 age range (33%), followed by those aged 36–45 (23%). This suggests that the majority of participants belong to the working-

**Table 1: Respondent's demographic profile**

| Description criteria      | Frequency (f) | Percentage |
|---------------------------|---------------|------------|
| Age                       |               |            |
| 18-25                     | 56            | 19         |
| 26-35                     | 99            | 33         |
| 36-45                     | 69            | 23         |
| 46-55                     | 56            | 19         |
| 56-65                     | 20            | 7          |
| Total                     | 300           | 100%       |
| Sex                       |               |            |
| Male                      | 115           | 38         |
| Female                    | 185           | 62         |
| Total                     | 300           | 100%       |
| Monthly income            |               |            |
| ₱15,000 below             | 136           | 45         |
| ₱15,001-₱25,000           | 91            | 30         |
| ₱25,001-₱35,000           | 45            | 15         |
| ₱35,001-₱45,000           | 19            | 6          |
| ₱45,001 and above         | 9             | 3          |
| Total                     | 300           | 100%       |
| Educational attainment    |               |            |
| Post-graduate             | 6             | 2          |
| College graduate          | 93            | 31         |
| College undergraduate     | 76            | 25         |
| High school graduate      | 59            | 20         |
| High school undergraduate | 33            | 11         |
| Elementary graduate       | 20            | 7          |
| Elementary undergraduate  | 12            | 4          |
| No grade completed        | 0             | 0          |
| Total                     | 300           | 100%       |



age population, who are likely active consumers with purchasing power. With respect to sex, the sample is predominantly female (62%), while males account for 38%, indicating a stronger female representation in the study.

For monthly income, a significant proportion of respondents (45%) reported earning ₱15,000 and below, placing nearly half of the sample within the low-income bracket. Another 30% earn between ₱15,001 and ₱25,000, which further reflects the modest income levels of the group. This income distribution may influence consumer priorities and sensitivity toward product pricing, particularly for green products.

In terms of educational attainment, the largest segment of respondents are college graduates (31%), followed by college undergraduates (25%) and high school graduates (20%). These figures highlight that the majority of participants have achieved at least some level of higher education, suggesting a consumer base that is relatively informed and potentially more aware of environmental and sustainability issues.

## 4.2. Measurements

Table 2 presents the Cronbach's alpha results for each construct. The analysis yielded an overall Cronbach's alpha of 0.850, which indicates a strong level of internal consistency across the survey items. This coefficient falls within the widely accepted threshold for good reliability (typically  $\alpha \geq 0.70$ ), thereby confirming that the instrument used is both consistent and dependable for measuring the intended constructs. In other words, the items included in the questionnaire effectively align with one another and are likely to assess the same underlying dimensions of green marketing strategies and consumer behavior.

As shown in Table 3, the correlation between consumer buying preference and price was statistically significant,  $r(298) = 0.865$ ,  $P < 0.001$ . The regression equation for predicting consumer preference from price was  $\hat{y} = 0.717 + 0.805x$ , where 0.717 represents the constant term. The coefficient of determination ( $R^2 = 0.748$ ) indicates that 74.8% of the variance in consumer

buying preference for green products was explained by price. This represents a highly positive relationship (Cohen, 1988). The 95% confidence interval for the slope ranged from 0.752 to 0.858, suggesting that for every unit increase in price competitiveness, consumer buying preference increases by approximately 0.752 to 0.858 units.

For packaging, the correlation was also significant,  $r(298) = 0.846$ ,  $P < 0.001$ , with the regression equation  $\hat{y} = 0.671 + 0.774x$ . The model yielded  $R^2 = 0.716$ , indicating that 71.6% of the variance in consumer buying preference was explained by packaging. The 95% confidence interval for the slope ranged from 0.718 to 0.829, showing that every unit increase in sustainable packaging results in a 0.718 to 0.829 increase in consumer preference.

Regarding labeling, the correlation with consumer buying preference was moderately strong,  $r(298) = 0.714$ ,  $P < 0.001$ . The regression equation was  $\hat{y} = 1.123 + 0.669x$ , with  $r^2 = 0.509$ , meaning 50.9% of the variance in consumer buying preference was explained by product labeling. The 95% confidence interval for the slope ranged from 0.594 to 0.744, indicating that for each unit increase in credible and informative labeling, consumer preference increases by 0.594 to 0.744 units.

For promotion, the relationship was strongest,  $r(298) = 0.901$ ,  $P < 0.001$ , with the regression model  $\hat{y} = 0.747 + 0.750x$ . The coefficient of determination ( $r^2 = 0.811$ ) indicates that 81.1% of the variance in consumer buying preference was explained by promotional efforts. The 95% confidence interval for the slope ranged from 0.708 to 0.791, suggesting that every unit increase in promotional strategies increases consumer preference by 0.708 to 0.791 units.

## 5. DISCUSSION

The findings reveal that all four marketing variables—price, packaging, labeling, and promotion—have a statistically significant and positive influence on consumer buying preference for green products, though their impacts vary in strength. Among these, promotion emerged as the strongest predictor, explaining 81.1% of the variance in consumer preference. This result indicates that well-designed promotional campaigns, such as advertisements, discounts, and awareness initiatives, play a critical role in shaping consumer behavior by increasing visibility and awareness of green products. This strongly supports the arguments of Dinh et al. (2023) and Pomeroy (2017), who noted that effective green promotion strategies not only raise awareness but also build brand equity and significantly influence consumer purchase intentions. Price followed closely, accounting for 74.8% of the variance, suggesting that competitive and fair pricing strongly encourages consumers to choose sustainable options, especially in price-sensitive markets. This finding supports prior studies (Alkhatib et al., 2023; Rahmani and Yavari, 2019), which emphasized that while consumers are sensitive to pricing, many are also willing to pay a premium for high-quality green products that balance affordability with sustainability.

Packaging also demonstrated a substantial effect, explaining 71.6% of the variance in consumer preference. This finding underscores

**Table 2: Constructs and factor loading**

| Constructs | Cronbach's alpha | No. of items | Remarks    |
|------------|------------------|--------------|------------|
| Price      | 0.742            | 5            | Acceptable |
| Promotion  | 0.850            | 5            | Good       |
| Packaging  | 0.880            | 5            | Good       |
| Labeling   | 0.910            | 5            | Excellent  |
| Overall    | 0.850            | 20           | Good       |

Below 0.50=Unacceptable, 0.50-0.59=Poor, 0.60-0.69=Questionable, 0.70-0.79=Acceptable, 0.80-0.89=Good, 0.90 and above=Excellent

**Table 3: Multiple regression analysis of price, packaging, labeling, and promotion to consumer's buying preference towards green products**

| Predictor variable | B(slope) | SE    | $\beta$ | t      | P-value |
|--------------------|----------|-------|---------|--------|---------|
| Price              | 0.805    | 0.027 | 0.865   | 29.718 | 0.000   |
| Packaging          | 0.774    | 0.028 | 0.846   | 27.389 | 0.000   |
| Label              | 0.669    | 0.038 | 0.714   | 17.581 | 0.000   |
| Promotion          | 0.750    | 0.021 | 0.901   | 35.805 | 0.000   |

$r=0.298$  ( $P<0.05$ ),  $P\text{-value}=0.000$



the importance of sustainable and eco-friendly packaging, as consumers increasingly value visible environmental attributes when making purchasing decisions. This reinforces the findings of Steenis et al. (2017) and Alkhatib et al. (2023), which highlighted the crucial role of eco-friendly packaging in shaping consumer trust, willingness to pay more, and long-term brand loyalty. Labeling, while still significant, had a relatively weaker effect, explaining 50.9% of the variance. This suggests that although eco-labels and certifications can build credibility and trust, they may be less influential compared to more tangible factors like price, packaging, and promotional strategies. This aligns with Gandhi (2021) and Liu et al. (2017), who emphasized that eco-labels serve as powerful tools for building consumer trust and guiding environmentally conscious choices, though their impact may be less pronounced compared to pricing and promotion.

The regression analysis revealed that promotion exerted the strongest influence on consumer buying preference for green products ( $\beta = 0.901$ ), followed closely by price ( $\beta = 0.865$ ). Packaging ( $\beta = 0.846$ ) and labeling ( $\beta = 0.714$ ) also had significant positive effects, though their relative impact was lower. These findings align with the literature: green promotion has consistently been identified as a critical driver of consumer awareness and trust (Sudjasmiko and Soegoto, 2018; Rajput et al., 2022), while pricing strategies remain central to balancing consumer willingness to pay with perceived product value (Taleizadeh et al., 2018; Alkhatib et al., 2023). Packaging and labeling, though slightly less influential, still play essential roles in shaping consumer attitudes, reinforcing brand commitment, and ensuring transparency (Prakash and Pathak, 2017; Gandhi, 2021). The analysis highlights that promotion and price are the most powerful drivers of consumer preference for green products, while packaging and labeling serve as supportive factors that reinforce consumer confidence and sustainability values. For businesses, these results emphasize the importance of prioritizing strong promotional strategies and competitive pricing, complemented by credible labeling and eco-friendly packaging, to effectively enhance consumer acceptance and adoption of green products.

## 6. CONCLUSION AND PRACTICAL IMPLICATIONS

This study investigated the influence of key marketing variables - price, packaging, labeling, and promotion - on consumer buying preferences for green products. The regression analysis revealed that all four factors significantly contribute to shaping consumer behavior, with promotion exerting the greatest influence, followed by price, packaging, and labeling. The findings emphasize that effective promotional strategies and competitive pricing are the most critical drivers in encouraging green product purchases. While packaging and labeling remain influential, their effects are comparatively moderate.

In practical terms, businesses should focus on strengthening their promotional strategies to increase awareness and demand for green products. This includes leveraging social media platforms, eco-friendly campaigns, and endorsements that effectively

communicate environmental value. Competitive pricing should also be prioritized, particularly in price-sensitive markets, to make green products more accessible. Although packaging and labeling exert less influence, they still play an important supporting role. Companies should therefore ensure that these elements are environmentally responsible, informative, and visually appealing to reinforce consumer trust and engagement.

Beyond business applications, the findings carry meaningful implications for policymakers and environmental advocates. Initiatives that promote eco-label certification, provide tax incentives for sustainable packaging, and support consumer education on environmental responsibility can enhance green product adoption. By aligning marketing strategies with sustainability goals, stakeholders can help drive both consumer preference and environmental responsibility.

Nonetheless, this study is not without limitations. The research focused only on a localized sample in Naawan, Misamis Oriental, which may limit generalizability to other contexts. The reliance on self-reported data introduces the possibility of response bias, and the cross-sectional design prevents conclusions about long-term consumer behavior trends. Future research may address these limitations by conducting comparative studies across different regions, employing larger and more diverse samples, or adopting longitudinal approaches to track changes in consumer preferences over time. Additional variables such as environmental awareness, lifestyle, cultural influences, or digital marketing strategies may also be examined to expand the understanding of green consumer behavior.

From a theoretical perspective, the study contributes to consumer behavior literature by reinforcing the applicability of frameworks such as the Theory of Planned Behavior and the Value-Belief-Norm Theory, which emphasize the role of attitudes and perceived control in shaping consumer action. The results suggest that promotional strategies and competitive pricing not only influence purchase intention but also strengthen the alignment between environmental values and actual consumer choices.

Overall, this study proposes a practical framework for green marketing: promotional efforts and pricing as primary drivers of consumer preference, supported by packaging and labeling as reinforcing elements. This framework highlights the need for an integrated approach where businesses, policymakers, and advocates work together to strengthen green consumption. With sustained efforts, the promotion of green products can move beyond a niche market into a mainstream consumer movement that advances both market growth and environmental sustainability.

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