
GREEN PRICING PRACTICES AND PERFORMANCE OF FOOD AND BEVERAGE MANUFACTURING FIRMS IN KENYA

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ABSTRACT

Green pricing is still a cornerstone for manufacturing firms to promote greener innovations and improve the firms' financial and non-financial performance. However, existing empirical evidence on the relationship between green pricing practices and performance improvements of food and beverage manufacturing companies in Kenya remains limited. This study examined the effect of green pricing practices on the financial and non-financial performance of food and beverage manufacturing firms in Kenya. The study used the Natural Resource Based View and Institutional theory to carry out census of all 192 food and beverage manufacturing firms registered by Kenya Association of Manufacturers as of 2025. A cross-sectional research design was used, and structured questionnaires were used for data collection from the heads of marketing departments. The study received 164 responses (85.4% response rate). Descriptive and inferential statistics were used for data analysis. The results showed that the green pricing had a positive and significant influence on the financial and non-financial performance, thus rejecting the null hypotheses. Therefore, green pricing practices significantly form the basis for determining firm's financial and non-financial performance. It suggests incorporating costs of eco-labels, premium pricing, and customers' willingness to pay into pricing models to encourage sustainability and long-term firm performance.

Keywords: Financial Performance; Food and Beverage Manufacturing Firms; Green Pricing Practices; Kenya; Non-financial Performance; Sustainability.

1. INTRODUCTION

1.1 Background of Study

In recent times, environmental sustainability debates are on the rise, driven by climate change action, regulatory pressure, and efforts to combat carbon emissions (Abdulsalam et al., 2025). The growing concern among the manufacturing industry has intensified globally, debating the economic impact of incorporating the social and environmental performance benefits to align with the UN's 17 Sustainable Development Goals (Montiel et al., 2021). Green pricing practices, such as setting premium prices for green products, considering the cost of eco-labels, and customer

willingness to set premium prices for green initiatives, are increasingly adopted to show the firm's commitment to environmental sustainability. Setting of premium prices aims at differentiating the green products from conventional products (Fatoki, 2021). Consumers tend to pay the premium price when they perceive the extra value and quality as desirable (Silaban et al., 2021). The cost of eco-labels involves hefty investments in new technology, equipment installation, training and innovation (Alabor & Anyasor, 2021). The commercial manufacturing firms are now highly concerned with green pricing practices, which are lucrative for financial and non-financial gains (Fernandes et al., 2022).

In Netherlands, firms that incorporated green pricing practices in their marketing strategies recorded significant improvements in firm performance based on enhanced customer satisfaction, customer loyalty, and competitive positioning, even though the direct effect on financial performance remains contingent on industry characteristics and market maturity (Gelderman et al., 2021). In Europe, green pricing practices are associated with operational efficiency, allowing firms to cut heavier costs of green production, leading to lower costs, enhanced market trust, and social legitimacy (Fontoura & Coelho, 2022). Businesses that align such green practices with corporate strategy simultaneously experience improved financial and non-financial performance, such as growth in sales, profitability, and new customer acquisition (Tzanidis et al., 2024). Similarly, in Asia, firms incorporating green pricing practices are positively linked with growing financial performance at the firm's initial and mature market development stages. These global trends demonstrate that while green pricing practices are recognized as a valuable resource, their consistent performance is context-dependent and affected by firm's price models, customer perception and preferences, regulatory frameworks and firm capability to adopt and sustain environmentally sustainable marketing strategies (Cao et al., 2022).

In Africa, green pricing practices are gradually being adopted even though inconsistent results in performance are witnessed owing to diverse pricing models, competition, consumer preferences, market norms and differing regulatory environments. Reports indicate that in South Africa, several Small Medium Enterprise performances declined within their first three years of incorporating ecofriendly initiatives since pricing initiatives were based on consumer insights rather than a blend between cost analysis and consumer insights (Gelderman et al., 2021). In Ghana, firms that adopt green pricing practices yield superior financial and non-financial performance, therefore incorporating green pricing initiatives build brand loyalty, transparency and long-term competitiveness (Oduro & Haylemariam, 2025). In South Africa reports indicate that the inclusion of cost of eco-labels, premium prices, willingness of customers to pay more for green products than conventional products significantly impact on green conscious customers loyalty, acquisition of new customers, brand reputation and firm legitimacy (Small Enterprise Development Agency, 2022). In Egypt, studies indicate that industrial firms are increasingly engaging in environmentally sustainable practices, including green pricing strategies, in alignment with national policies such as Egypt Vision 2030 and industrial sustainability programs (Abdel-Rahman, 2022). Similarly, in Uganda, governmental and sector initiatives such as the Uganda Green Growth Project and sustainable manufacturing programs encourage green marketing adoption, though empirical evidence on firm-level financial and non-financial performance outcomes remains limited (Ugandan Green Growth Strategy, 2023).

In Kenya, green pricing strategies are gradually being adopted, although performance results are

yet to be fully associated with the incorporation of the businesses environmentally sustainable initiatives. Local authors argue that green pricing practices enhance both financial performance, such as operational efficiency, revenue growth, profitability, and non-financial performance outcomes such as customer loyalty, new customer acquisition, and brand image (Kimanthi, 2024; Wanjohi, 2022; Nyoro, 2023; Nzomo et al., 2023). Furthermore, consumer studies indicate increasing environmental awareness in Kenya, creating a fertile environment for green pricing strategies.

The food and beverage manufacturing firms make up the largest sector in the manufacturing industry, accounting for 192 firms that contribute to 22.13% of the total KAM's registered membership (KAM, 2024). According to the Kenya Institute for Public Policy Research and Analysis (2024), the manufacturing sub-sector accounts for 70% of the industrial sectors contribution to the GDP of Kenya. The report indicates that the food and beverage firms create employment opportunities for about 289,319 (33.5%) people out of the 966,400 people employed by the manufacturing firms between 2019 and 2024. Despite their importance, the food and beverage manufacturing firms continue to face performance-related challenges that constrain their business growth and competitiveness. Financially, many of the firms report stagnant profitability, limited revenue growth, and low market share, particularly among small and medium enterprises (KAM, 2025; Nzomo et al., 2023). Factors contributing to these challenges include rising input costs, limited access to financing, intense local and regional competition, and inefficiencies in supply chain management (Wanjohi, 2022). Such financial constraints limit firms' ability to invest in innovation, marketing, and sustainability practices, creating a cycle of underperformance.

Non-financial performance indicators, such as new customer acquisition, customer loyalty, stakeholder engagement and environmental compliance, are increasingly recognized as crucial for competitive advantage. However, many Kenyan food and beverage manufacturers have not fully leveraged these dimensions, often due to inadequate strategic alignment, limited marketing capacity, and low integration of sustainability initiatives into core operations (Nyoro, 2023; Odhiambo, 2023). This results in missed opportunities to strengthen consumer trust, differentiate market segments, and improve operational efficiency, all of which can indirectly enhance financial performance. Additionally, consumer awareness of environmental issues in Kenya has been rising, with more individuals preferring products from environmentally responsible firms. Yet, research shows that many firms struggle to translate environmental costs into tangible performance gains, whether financial or non-financial (Kimanthi, 2024).

1.2 Statement of the Problem

The performance of food and beverage manufacturing firms in Kenya continues to decline both in profits from 22% to 19%, sales revenue from Ksh 631B to Ksh 399B and GDP Contribution dropped from 5.6% to 3.3% from 2019 to 2024 (KAM, 2025). Reports show that the subsector contributes up to 14% of the productivity in the manufacturing sector, yet it's the largest in the manufacturing sector, contributing to 22.13% of the total KAM's registered membership (KAM, 2025). Moreover, the subsector accounts for 33.5% (289, 319) employment opportunities out of 966, 400 employed by the manufacturing sector between 2019 and 2024 (Kenya Institute for Public Policy Research and Analysis, 2024). Despite their importance, the subsector firms continue to face performance-related challenges that constrain their business growth and competitiveness. The

financial constraints in profitability and revenue growth are attributed to high green innovation and operational costs, extremely competitive markets, and inefficiencies in production and marketing costing (KAM, 2025; Nzomo et al., 2023). New customer acquisition as a non-financial performance metric are also underdeveloped, limiting firms' ability to differentiate themselves and gain competitive advantage (Nyoro, 2023; Odhiambo, 2023). Green pricing practices such as setting premium prices, considering the cost of eco-labels, and customers willingness to pay premium prices for green products give firms key strategic opportunity to address these performance gaps by enhancing both financial and non-financial outcomes. Empirical evidence suggests that such practices can improve customer perception, strengthen firms' corporate image, and foster long-term stakeholder trust (Wanjohi, 2022; Kimanthi, 2024).

However, most existing studies in Kenya have examined green marketing practices at a broad level, with limited focus on green pricing practices as a distinct strategic dimension within the marketing mix (Onditi, 2024; Wambugu & Mbugua, 2020). Additionally, prior Kenyan studies have largely concentrated on consumer purchase intentions or environmental awareness, rather than directly linking green pricing practices to firm-level financial and non-financial performance outcomes, particularly within the food and beverage manufacturing sector (Mwai, 2024; Nyoro, 2023). There is limited empirical evidence that simultaneously examines both financial and non-financial performance dimensions, despite the growing recognition that non-financial outcomes play a critical role in long-term competitiveness and sustainability (Odhiambo, 2023; Kimanthi, 2024). These gaps pose significant challenges for both practitioners and policymakers. Without clear evidence, firms cannot optimally design green pricing practices to enhance performance, and industry associates lack guidance on supporting sustainability-driven competitiveness. This justified the need for an empirical investigation into the effect of green pricing practices on financial and non-financial performance of food and beverage manufacturing firms in Kenya, to provide actionable insights that can inform firm-level strategy and industry norms and standards.

1.3 Objective of the Study

The objective of this study was to examine the effect of green pricing practices on performance of food and beverage manufacturing firms in Kenya.

1.4 Specific Objectives

- i. To evaluate the effect of green pricing practices on financial performance of food and beverage manufacturing firms in Kenya
- ii. To determine the effect of green pricing practices on non-financial performance of food and beverage manufacturing firms in Kenya

1.5 Research Hypotheses

The study hypotheses were;

H₀₁: Green pricing practices have no significant effect on financial performance of food and beverage manufacturing firms in Kenya

H₀₂: Green pricing practices have no significant effect on non-financial performance of food and beverage manufacturing firms in Kenya

2. LITERATURE REVIEW

2.1 Theoretical Foundation

2.1.1 Natural Resource-Based View

The Natural Resource-Based View (NRBV) was developed by Hart (1995) as an extension of the traditional Resource-Based View (RBV) of the firm by incorporating environmental considerations into the analysis of firm competitiveness. The NRBV states that business firms can achieve sustained competitive advantage by developing environmentally oriented capabilities that are valuable, rare, inimitable, and difficult to substitute (Hart, 1995). According to this theory, proactive environmental strategies enable firms to reduce costs, enhance reputation, and strengthen stakeholder relationships, thereby improving both financial and non-financial performance outcomes. Within the NRBV framework, practices such as pollution prevention, product stewardship, and sustainable development are viewed as strategic capabilities that enhance organizational performance over time (Hart & Dowell, 2011). In the context of the food and beverage manufacturing sector in Kenya, firms face challenges such as high operational costs, regulatory pressures, and increasing consumer demand for environmentally responsible products. Green pricing practices such as setting of premium prices for green products, considering the cost of eco-labels in pricing, customers willingness to pay premium prices and customers ability to pay higher prices when they perceive that the cost resonates with green initiatives can be conceptualized as strategic resources that allow firms to effectively incorporate the operational costs of their environmental initiatives to stakeholders to foster long-term stakeholder trust, signal the firm's environmental commitment and foster customer loyalty. By applying the NRBV, these pricing efforts are not just firm-centric benefits but capabilities that can translate environmental initiatives into measurable financial gains (e.g., increased sales, revenue growth) and non-financial outcomes (e.g., brand equity, stakeholder engagement). Therefore, the NRBV provides a theoretical justification for examining how green pricing practices can serve as strategic capabilities that enhance financial and non-financial performance of food and beverage manufacturing firms in Kenya.

2.1.2 Institutional Theory

The Institutional Theory was originally developed by Hawley (1968), suggesting that management practices in an organization are occasioned by social and cultural pressures. DiMaggio and Powell (1983) developed the institutional theory further by defining the role of formal and informal institutions in shaping organizational behavior. The theory posits that firms operate within a broader institutional environment where rules, norms, and regulations influence firms' strategic choices and business goals (Ebrahim & Koh, 2022). The Institution Theory dictates how external pressures affect a firm's adaptation to existing practices within the industry (Tu & Wu, 2021; Chen et al., 2022). The coercive isomorphism arises from the pressure exerted by price regulators in the industry. The institutional theory, therefore, can be used to study how food and beverage manufacturing firms address green pricing practices under pressure from external forces (Dendula et al., 2025; Zhang et al., 2024; Alinda et al., 2023). The theory has therefore become a critical research area for explaining environmentally related practices (Glynn & Lounsbury, 2022). Government agencies such as Competition Authority of Kenya (CAK) National Treasury & Ministry of Investments, Trade, and Industry have become powerful institutions that may coercively influence the pricing actions of food and beverage manufacturing firms.

Normative isomorphism drivers exert pressure for conformance to industry standards and best practices for acceptability and legitimacy (Eitrem et al., 2024). Normative pressures can originate from consumer's ethical values, perceptions, and ecological thinking. Therefore, environmentally conscious consumers will only make purchase decisions when they know part of the amount will be used for green activities and when the green price resonates with consumers' perception of value for money (Geng et al., 2023). This explains the rising adoption of green pricing practices among manufacturing firms in the subsector in Kenya. The mimetic isomorphism drivers are shown when food and beverage firms imitate the actions of successful and established competitors in the industry in an attempt to replicate their success path and have a competitive edge (Latif et al., 2020). The theory thus affirms the need for food and beverage manufacturing firms to imitate the green pricing model strategies undertaken by their competitors in the subsector to remain competitive.

Whereas the institutional theory explains how external isomorphism promotes green pricing practices, it fails to exhaustively show how both external drivers and internal firm resources drive environmental management practices (Waxin, 2024). The theory demonstrates that a firm's marketing competitiveness lies within its drive to incorporate green pricing models (Chen et al., 2022). The Institution Theory is therefore relevant for this study as it links what drives firms to adopt and incorporate green pricing practices for improved financial and non-financial performance.

2.2 Empirical Review

2.2.1 Green Pricing Practices and Firm Performance

Green pricing is believed to be an essential element in the green marketing mix that focuses on cost implications for businesses to survive in a competitive business world (Kuzma et al., 2020). Gelderman et al. (2021) assessed the effect of green pricing on firm performance. The findings showed that pricing strategy has a significant impact on customer satisfaction and loyalty, whereas customers who perceive high value in green products are more likely to become loyal customers to a company. Firms that develop and implement effective green pricing strategies are likely to increase their new customer acquisition and growth in sales (Larbi-Siaw et al., 2022). In Iran, Sheikh et al. (2023) assessed the factors that influence green purchase behavior among Iranian consumers. Factors such as price sensitivity, perceived risk, and attitudes towards green products were investigated. An experimental research survey method was used. Data was analyzed using SEM. The findings showed that attitude towards green products and price sensitivity were significant and positive on green purchase behavior. However, price sensitivity had a negative effect on green purchase behavior, thus contradictions in findings. Additionally, the study focused on consumers in a developed Country. The findings are therefore not generalizable to developing economies like Kenya.

Chen et al. (2022) evaluated the effect of green marketing on purchase intention in a green restaurant in China. A total of 508 consumers were sampled, and a descriptive research design was used. The study concluded that ecologically concerned consumers willingly paid higher prices for green products. The findings of the study asserted that green pricing positively relates to profitability in different regions, the effect differed among regions. A positive relationship was

evident between green pricing initiatives and profitability. However, the study noted that only the long-term periods witnessed the positive financial returns of green pricing initiatives, thus expected fluctuations on findings in short-run periods.

Martínez-Conesa et al. (2020) conducted a case study in Spain on green pricing strategies, corporate social responsibility, and corporate performance in Small and Medium Enterprises. A qualitative research design using both primary and secondary information sources was utilized, using interviews and analysis of company performance data. The study concluded that the integration of green pricing into company's CSR strategies increased brand loyalty and positive consumer perceptions. However, according to the study findings, green pricing alone was not sufficient to boost financial performance without a genuine commitment to environmental sustainability. This being a case study, its findings cannot be generalized.

Li (2025) conducted a case study on PZ Cussons Nigeria Plc to assess the impact of green pricing on organizational performance. A sample was drawn from 274 employees using quantitative survey methods. The findings of the study showed that green pricing significantly and positively influenced the company's performance. However, Braik et al. (2023) examined the impact of green pricing as a green marketing strategy on organizational sustainable performance in Palestinian food industries. A deductive quantitative survey design was used, and a sample of 150 registered food manufacturing firms in Palestine was drawn. The results showed a significant negative influence of green pricing on the firm's sustainability dimensions.

Globally, several studies have examined green marketing practices with respect to green pricing practices. However, from the Kenyan context, there remain limited and largely fragmented studies on green pricing practices. Few studies have also focused explicitly on green pricing practices and firm performance, especially within the food and beverage manufacturing firms. For instance, research on green marketing strategies in Kenyan supermarkets and retail environments has demonstrated that green pricing is considered a key component of marketing strategy and consumer satisfaction (Onditi, 2024), and studies in the soft drink industry have shown a significant relationship between green marketing practices, including pricing, and customer satisfaction (Macharia, 2025). However, these studies do not directly assess how green pricing practices influence firm performance outcomes in regard to financial metrics. Moreover, other studies on facets of green practices in Kenyan manufacturing, such as green supply chain management, indicate positive links with performance outcomes but focus on operational practices rather than pricing strategies (Ngatia et al., 2025). The limited empirical work specifically linking green pricing practices to measurable financial and non-financial firm performance in Kenya highlights a contextual gap that this study aims to address by focusing on food and beverage manufacturing firms, where such evidence is particularly scarce. This study sought to evaluate the effect of green pricing practices on performance of food and beverage manufacturing firms in Kenyan context. The conceptual framework of the study is illustrated in Figure 1.

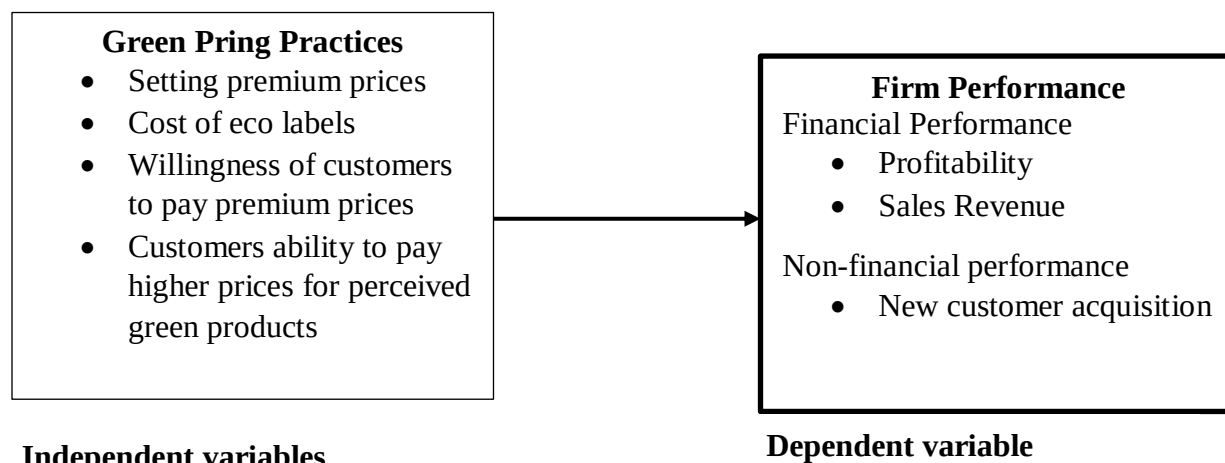


Figure 1: Conceptual Framework

Source: Authors (2026)

3. METHODS

A cross-sectional research design was adopted as data on the study variables were collected at a single point in time. Cross-sectional studies are particularly effective for identifying generalized patterns and associations between constructs without the need for longitudinal tracking (Hunziker & Blankenagel, 2024), with the target population consisted of all the food and beverage manufacturing firms in Kenya. There were 192 registered food and beverage manufacturing firms in Kenya (KAM, 2025). A census approach was conducted on all 192 firms, which were relatively small in number. The unit of analysis was the food and beverage manufacturing firms in Kenya, and the unit of observation was the head of marketing departments in respective firms. The heads of marketing departments are the most appropriate respondents for this study because they are directly responsible for designing, implementing, and evaluating the firm's marketing strategies, including green pricing practices. These individuals possess first-hand knowledge of the firm's green pricing strategies, such as setting premium prices for green products, considering the cost of eco-labels in the pricing, and determining the willingness of green-conscious customers to pay higher prices for green initiatives, presenting the firm's commitment to incorporate the cost of green innovation. Additionally, heads of marketing departments are well-positioned to assess the effect of green pricing practices on both financial and non-financial performance indicators, such as profitability, sales growth, and new customer acquisition. Therefore, targeting heads of marketing assures the relevance and validity of the data collected, which aligns well with the objectives of the study, while also minimizing the risk of response bias due to lack of knowledge or authority over marketing decisions.

Data was collected using structured questionnaires by the drop and pick up later method with the help of three research assistants. Green pricing practices were measured using the scale items adapted from Neduraman and Manida (2020), Ahmad et al. (2020), and Kumar et al. (2022). Financial performance was measured using scale items adopted from Kilic et al. (2022), while the

scale items for non-financial performance were adapted from Mittal et al. (2023). All the items were measured using a 5-point Likert scale with 1 = Not at all, 2 = To a small extent, 3 = To a moderate extent, 4 = To a great extent, and 5 = To a very great extent. Using extent-based Likert scale items was relevant for studies assessing the degree of implementation or capability, such as green pricing practices. This scale allows respondents to indicate the level to which specific activities or technologies are adopted, rather than merely expressing agreement or disagreement. The choice of a 5-point extent scale to measure both the independent variable (green pricing practices) and the dependent variable (firm performance) is grounded in the need to postulate the extent to which specific activities or outcomes occur, rather than just showing whether respondents agree or disagree with a statement. Extent scales are particularly suitable for assessing practical implementation levels, performance outcomes, or operational intensity in organizational contexts (Chang et al., 2022).

Using an extent scale allows respondents, such as marketing managers, to indicate the level of engagement in green pricing practices, such as setting of premium prices, cost of eco-labels, and customer willingness to pay premium prices, and the extent of financial and non-financial performance outcomes, such as profitability, sales revenue, and new customer acquisition, in a quantifiable manner. This approach provides more measurement precision and reliability in studies assessing business practices and outcomes, especially in cross-sectional surveys (Lee et al., 2022; Jaiswal et al., 2022). Additionally, extent scales are considered less prone to acquiescence bias compared to agreement scales because they focus on the observable degree of activity or effect, rather than subjective agreement. This makes them particularly appropriate for measuring constructs where the actual level of implementation or performance is the key research focus (Kılıç et al., 2022). Consequently, using a 5-point extent scale ensures that the study captures variations in practice and performance, allowing for meaningful statistical analysis and interpretation.

Data was analyzed through simple linear regression analysis, and therefore, the data collected was subjected to the tests of the assumptions of regression analysis. Linearity was checked using the values of significant deviation from linearity, normality was checked using Shapiro-Wilk and Kolmogorov-Smirnov tests, autocorrelation was tested using the Durbin-Watson test, while the reliability of the research instrument was established using the Cronbach's alpha reliability coefficient with a cut-off point of 0.7. Hair et al. (2019) posit that reliability of over 0.7 is acceptable. Construct validity of the research instruments items was run in SPSS and tested using Exploratory Factor Analysis (EFA) based on the Principal Component Analysis (PCA) with varimax rotation. Prior to performing the EFA, the suitability of the data collected for factor extraction was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity.

4. RESULT AND DISCUSSION

4.1 Response Rate

The response rate for the study was 85.4% since 164 of the 192 food and beverage manufacturing firms responded by filling in the questionnaires. A response rate of above 70% is considered highly acceptable and indicative of strong engagement and data reliability in survey-based research. According to Creswell (2021), a response rate of 70% and above is adequate representation of the study population and generally regarded as excellent in minimizing non-response bias, thereby enhancing the validity of the study's findings. High response rates are particularly important in

organizational research, where representativeness and completeness of data are critical for drawing meaningful conclusions. This high response rate was because the target population was relatively small, and the drop-and-pick-up later method that was used to administer the questionnaires allowed the respondents ample time to provide the data required. The study findings on the gender distribution of respondents and firm characteristics are shown in Table 1

Table 1: Respondent and Firm Characteristics

Description	Frequency	Percentage
Gender of the respondents	Male = 77 Female = 87 Total = 164	Male = 47% Female = 53% Total = 100%
Firm Age	Less than 5 years = 13 5 to 10 years = 34 11 to 15 years = 31 16 to 20 years = 19 Over 20 years = 67 Total = 164	Less than 5 years = 7.9% 5 to 10 years = 20.7% 11 to 15 years = 18.9% 16 to 20 years = 11.6% Over 20 years = 40.9% Total = 100%
Distribution of firms based on product category	Alcoholic beverages = 7 Packed foodstuffs = 19 Bakers and millers = 11 Non-alcoholic beverages = 19 Dairy and meat products = 11 Grains and Dried foods = 9 Others = 12 Total = 164	Alcoholic beverages = 2% Packed foodstuffs = 53% Bakers and millers = 14% Non-alcoholic beverages = 12% Dairy and meat products = 7% Grains and Dried foods = 5% Others = 7% Total = 100%
Extent to which the firms engage in green marketing practices	To a small extent = 33 To a moderate extent = 62 To a large extent = 52 To a very large extent = 17 Total = 164	To a small extent = 20.1% To a moderate extent = 37.85% To a large extent = 31.7% To a very large extent = 10.4% Total = 100%

Source: Research Data (2026)

Data from Table 1 on the demographic profile of the study respondents and firms indicates balanced representation and maturity in the sample, supporting the credibility of subsequent analyses. In terms of gender, female respondents were slightly more than the male respondents (53% vs. 47%), suggesting a low gender parity among heads of marketing department in the food and beverage manufacturing sector. While some Kenyan studies show male dominance in ownership and management overall, this study provides evidence that female participation in top management is increasing in specific industries, even though disparities persist in larger firms where women remain under-represented relative to men in managerial roles across many Kenyan enterprises. A study by Wairimu (2024) found that gender diversity at leadership levels positively affected firm performance and sustainability in Kenyan corporate settings, suggesting that managerial diversity can be performance-relevant. With respect to firm age, the largest proportion of firms (40.9%) operated for more than 20 years, indicating that a significant share of the sample

consists of mature and established firms. Firms with longer operational histories are more likely to possess developed marketing systems and strategic planning processes, which can influence the adoption of green marketing practices (as older firms may have more resources and formal structures for strategic initiatives). Demographic research in Kenya has shown that age of the firm is positively associated with performance outcomes, suggesting that older firms may have a competitive edge in integrating and sustaining strategic practices over time (Masila et al., 2024). The distribution of firms based on product category is diverse, with packaged foodstuffs being the largest group. This variation likely reflects the structure of Kenya's food and beverage manufacturing sector, where packaged foods and non-alcoholic beverages dominate production and market visibility. Sectors with high consumer visibility often engage more actively in green product practices, including those tied to environmental positioning, than sectors with lower marketing intensity. Regarding the extent of engagement in green marketing practices, results indicate that majority of the firms engage in such practices at least moderately because over two-thirds of the firms reported engagement to a moderate, large, or very large extent. However, only about one in ten firms reported that they engage in green marketing practices to a very large extent. This suggests that while green marketing awareness exists in the sector, full adoption of comprehensive green product activities may still be in the introductory or intermediate stage, potentially signaling room for improvement and strategic emphasis. This pattern aligns with wider research that shows sustainability initiatives often begin at moderate levels before becoming more fully integrated as firms mature their strategies and capabilities.

4.2 Descriptive Analysis of Green Pricing practices and Firm performance

4.2.1 Green Pricing Practices

To assess the extent to which the food and beverage manufacturing firms engaged in green pricing practices, respondents were asked to rate five statements using a 5-point Likert scale ranging from 1 (Not at all) to 5 (To a very great extent) with five statements on green pricing practices. Table 2 presents the mean scores and standard deviations for each item, offering insights into how consistently and extensively these green pricing practices are implemented across the food and beverage manufacturing firms in Kenya.

Table 2: Descriptive Statistics on Green Pricing Practices

Statement	Mean	SD
The firm's green products are priced at a premium compared to conventional products	3.02	.818
The firm considers the cost of environmental aspects, like eco label, when setting prices	3.07	.894
The environmentally conscious customers are willing to pay premium prices for green products	3.01	.844
Customers agree to pay higher prices when they know part of the amount is used for green activities	3.13	.876
The firm's green pricing resonates consumers perception of value for their money	3.06	.877

Grand Mean = 3.06**Source:** Research Data (2026)

Data from Table 2 shows a moderate level of adoption of environmentally friendly pricing initiatives among the surveyed food and beverage manufacturing firms. All statements recorded mean scores slightly above the scale midpoint, ranging from 3.01 to 3.13, suggesting that respondents generally agreed to a moderate extent that their firms engage in green pricing practices. Specifically, the statement that customers agree to pay higher prices when they know that part of the amount is to be used for green activities recorded the highest mean score ($M = 3.13$, $SD = 0.876$), implying that firms are relatively more committed to setting higher prices for environmentally friendly products compared to other green pricing initiatives. Similarly, the perception that the firm considers the cost of environmental aspects like eco label when setting prices yielded a mean ($M = 3.07$, $SD = 0.894$), indicating that firms moderately recognize the relevance of green pricing as a source of meeting its costs while remaining competitive in the market. Additionally, the firm's green pricing resonates with consumers' perception of value for their money yielded a mean ($M = 3.06$, $SD = 0.877$), affirming that the firm's pricing initiatives are customer-based. The concept that environmentally conscious customers are willing to pay premium prices for green products recorded the lowest mean score ($M = 3.01$, $SD = 0.844$), suggesting that while such practices exist, their implementation is not yet extensive across the sector. The item relating to the firm's green products being priced at a premium compared to conventional products had a small extent of agreement ($M = 3.02$, $SD = 0.818$), an indication that premium pricing initiatives are being adopted partially, though not comprehensively considered in the pricing of green practices.

The standard deviations for all statements ranged between 0.818 and 0.894, indicating moderate variability in respondents' perceptions. This suggests differences in the extent to which individual firms implement green pricing practices, likely reflecting variations in firm costs, competitive forces, resource availability, and regulatory pressures. The grand mean of $M = 3.06$ indicates that, on average, food and beverage manufacturing firms exhibit a moderate level of green pricing practices adoption. This suggests that determination of firms' pricing depends on the firm's premium pricing, cost of eco labels, and the willingness of customers to pay premium prices. This ensures that the firms meet the cost of green activities and set prices that resonates with customers' perception on value for money. However, in as much as these practices existed within the food and beverage firms, results show that they were not yet strongly adopted or fully integrated into prevailing pricing strategies. This shows that while firms are aware of and engage in green pricing practices, there remains a substantial scope for strengthening and institutionalizing these practices to enhance environmental sustainability and better performance.

Table 3: Descriptive Statistics on Firm Performance

Statement	Mean	SD
This firm's overall profitability has increased over the past three years	3.10	.904
This firm has consistently achieved increased net profit margins in the past three years.	3.38	1.230
This firm's profitability has met or exceeded its business targets in the past three years.	3.07	.969
This firm's profitability has shown stable and sustainable growth in the past three years.	3.07	.967
This firm's total sales revenue has increased over the last three years.	3.35	1.271
This firm has consistently achieved its sales revenue targets.	3.48	1.255
This firm has experienced growth in sales revenue across its product portfolio.	3.04	.899
This firm's sales revenue performance has been strong relative to expectations.	3.01	.988
This firm has seen a steady increase in the number of new customers in the last three years	3.05	.899
This firm's customer acquisition rate has improved in the last three years.	3.06	.938
This firm's overall brand reputation helps to attract new customer segments.	3.11	.953
New customer acquisition has met or exceeded the firm's target in the last three years	3.10	.992

Source: Research Data (2026)

The descriptive statistics on firm performance in Table 4 indicate that food and beverage manufacturing firms have experienced moderate improvements in both financial and non-financial performance over the past three years. The mean scores for profitability-related indicators range from 3.07 to 3.38, suggesting that most firms have achieved moderate growth in profitability, with stronger performance evident in net profit margins. In particular, the relatively higher mean for consistent increases in net profit margins ($M = 3.38$) implies that cost management and operational efficiency may be improving among several firms, although the comparatively large standard deviation indicates variation in profitability performance across firms. Similarly, sales revenue performance recorded mean values slightly above the scale midpoint, with firms reporting moderate success in achieving revenue targets and overall revenue growth. The highest mean under this category relates to the consistent achievement of sales revenue targets ($M = 3.48$), suggesting that many firms are able to meet planned revenue objectives even if overall revenue growth remains incremental. However, the wider dispersion observed in the standard deviations for revenue-related items points to uneven sales performance, possibly reflecting differences in market positioning, product mix, and competitive intensity within the sector.

Regarding non-financial performance, the results show that new customer acquisition and brand reputation have improved to a moderate extent. Mean scores slightly above 3 indicate that firms

have experienced gradual growth in customer numbers, and an indication supportive to attracting new customer segments. However, the modest magnitude of these means suggests that while firms are making progress in building customer loyalty and expanding their customer base, these outcomes are not yet strongly pronounced. The relatively consistent standard deviations across non-financial indicators further suggest that firms are at different stages of strengthening intangible performance outcomes, such as customer relationships. Overall, the findings demonstrate that firm performance in the Kenyan food and beverage manufacturing sector is generally stable but moderate, with incremental improvements rather than strong performance gains. This pattern implies that while firms are achieving reasonable financial stability and customer growth, there remains a huge potential for strategic interventions, such as enhanced green product practices, to further strengthen both financial and non-financial performance outcomes.

4.3 Reliability and Validity of the Research Instrument

To assess the internal consistency of the measurement scales used in this study, Cronbach's alpha coefficients were computed for each construct. Hair et al. (2020) proposes a coefficient of 0.70 or above as generally acceptable. The study showed values above 0.80 suggesting good reliability. Content and construct validity were checked to determine the validity of the study's research instrument. The data collected from Head of marketing departments used in the pretests in the respective firms was not considered for analysis. The feedback received was used to fine tune the questionnaire before undertaking the actual data collection. Construct validity of the research instruments items were run into the SPSS and tested using Exploratory Factor Analysis (EFA) based on the Principal Component Analysis (PCA) with varimax rotation. Prior to performing the EFA, the suitability of the data collected for factor extraction was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. The results for these tests are presented in Table 4

Table 4: KMO and Bartlett's Test

Variable	KMO Test	Approx. X²	df	Sig
Green product practices	0.886	454.145	10	.000
Firm Performance	0.942	1302.723	66	.000

Source: Research Data (2026)

Results from Table 4 indicate that KMO measures of sampling adequacy were 0.886 for green pricing practices and 0.942 for firm performance. This exceeded the threshold of 0.5 and above that was proposed by Kaiser (1974), confirming that the data was suitable for factor analysis. The P-values from Bartlett's test of sphericity were found to be less than the alpha value of 0.05 which implies that the variables are fit for inclusion for further tests as proposed by Bartlett (1954). The component matrix for green pricing practices is shown in Table 5.

Table 5: Component Matrix for Green Pricing Practices and Firm Performance

	<u>Component</u> 1
The firm's green products are priced at a premium compared to conventional products	.830
The firm considers the cost of environmental aspects like eco label when setting prices	.837
Environmentally conscious customers are willing to pay premium prices for green product	.869
Customers agree to pay higher prices when they know part of the amount is used for green activities	.843
The firm's green pricing resonates consumers perception of value for their money	.832

Extraction Method: Principal Component Analysis.

Source: Research data (2026)

The component matrix for green pricing practices show strong loadings for all five items ranging from 0.830 to 0.869. the loadings are above the recommended item retention threshold of 0.4 proposed by Hair et al. (2019). Rotation was not possible since only one factor was extracted. Table 6 presents factor analysis results on firm performance

Table 6: Rotated Component Matrix on Firm Performance

	<u>Component</u> 1 2
The firm's overall profitability has increased over the past three years	.850
The firm has consistently achieved increased net profit margins in the past three years.	.859
The firm's profitability has met or exceeded its business targets in the past three years.	.886
The firm's profitability shows stable and sustainable growth in the past three years.	.854
The firm's total sales revenue has increased over the last three years.	.873
This firm has consistently achieved its sales revenue targets.	.882
The firm has experienced growth in sales revenue across its product portfolio.	.689
The firm's sales revenue performance has been strong relative to expectations.	.859
The firm has steady increase in the number of new customers in the last three years	.856
The firm's customer acquisition rate has improved in the last three years.	.587
The firm's overall brand reputation helps to attract new customer segments.	.785
New customer acquisition has met or exceeded the firm's target in the last three years	.691

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Source: Research data (2026)

Two factors were extracted in firm performance factor analysis results, an indication that firm performance is bidimensional. Factor one had 9 items relating to profitability and sales revenue thus categorized under financial performance while factor 2 had 3 items relating to new customer acquisition categorized as non-financial performance. All the 12 factors under firm performance

had factor loadings above the 0.4 threshold proposed by Hair et al. (2019) thus supported the retention of all items and confirmed the validity of the scale items.

4.4 Tests of the Assumptions of Regression Analysis

In relation to the tests of the assumptions of regression analysis, the Shapiro-Wilk and Kolmogorov-Smirnov tests had p-values greater than 5% significance level indicating that the data collected on the study variable was normally distributed. Linearity was confirmed with the values of significant deviation from linearity being greater than 0.05. The Durbin-Watson test for autocorrelation had values close to 2, which was confirmation that autocorrelation was not present in the data collected on the study variable. These results confirm that the data met the assumptions of regression analysis.

4.5 Testing the Effect of Green Pricing Practices on Financial Performance

The effect of green pricing practices on financial performance of food and beverage manufacturing firms was tested using simple linear regression analysis. Results of the model summary, ANOVA and Coefficients are presented in Table 7

Table 7: Linear Regression Results on the Effect of Green Product Practices on Financial Performance

Model Summary						
Model	R	R Square	Adjusted Square	RStd. Error of the Estimate		
1	.579 ^a	.335	.331	.56033		
a. Predictors: (Constant), Green Pricing Practices						
ANOVA ^a						
Model		Sum Squares	ofdf	Mean Square	F	Sig.
1	Regression	25.613	1	25.613	81.577	.000 ^b
	Residual	50.863	162	.314		
	Total	76.476	163			
a. Dependent Variable: Financial Performance						
b. Predictors: (Constant), Green Pricing Practices						
Coefficients						
Model		Unstandardized Coefficients		Standardized t Coefficients	Sig.	
		B	Std. Error	Beta(β)		
1	(Constant)	1.761	.185		9.505	.000
	Green Pricing Practices	.482	.053	.579	9.032	.000
a. Dependent Variable: Financial Performance						
b. Predictors: (Constant), Green Pricing Practices						

Source: Research Data (2026)

The model summary results in Table 7 show a positive relationship between green pricing practices and financial performance with a correlation coefficient of $R = 0.579$. Additionally, an R^2 of 0.335 implies that 33.5% of the variation in the financial performance of food and beverage manufacturing firms in Kenya is explained by green pricing practices. However, 66.6% of the variation in financial performance is explained by other factors not included in the model. The ANOVA results indicate that the regression model is statistically significant ($F = 81.577$, $p = 0.000$) since the p-value is less than the significance level of 0.05. The regression sums of squares (25.613) compared to the total sum of squares (76.476) indicate that green pricing practices explain at least some proportion of the variation in financial performance. This demonstrates that enhancements in green pricing practices such as setting premium prices, considering the willingness of customers to pay premium prices and the cost of eco labels are associated with improved financial outcomes, including higher profitability and increased sales revenue.

The coefficients result of green pricing practices show a positive and statistically significant effect on financial performance ($\beta = 0.579$, $t = 9.032$, $p = 0.000$). The unstandardized coefficient of $B = 0.482$ implies that a one-unit increase in green pricing practices will lead to an increase of 0.579 units in financial performance, holding all other factors constant. This demonstrates that firms that consider the cost of environmentally friendly practices while setting prices such as premium prices for green products, willingness of customers to buy and pay higher prices and the cost of eco labels experience improved financial outcomes. These results lead to the rejection of the null sub-hypothesis H_{01} which states that green pricing practices have no significant effect on financial performance of food and beverage manufacturing firms in Kenya.

The finding by this study that green pricing practices have a positive and significant effect on financial performance is similar to a study by Eneizan et al. (2020) who found that green pricing had a positive and significant effect on firm performance. Oluwafemi (2025) found that green pricing strategy positively and significantly influenced financial performance (sales performance) of the food and beverage firms in South Africa. However, the findings disagreed with other studies. For instance, Braik et al. (2023) found that green pricing strategies had no significant effect on financial performance in Palestinian food manufacturing companies. Orzan et al. (2020) also found that green pricing negatively impacted on financial performance of the firms.

4.6 Testing the Effect of Green Pricing Practices on Non-financial Performance

To test the effect of green pricing practices on non-financial performance of food and beverage manufacturing firms in Kenya, the linear regression model was estimated, and the model summary, ANOVA, and the regression coefficients of simple linear regression analysis results are provided in Table 8.

Table 8: Linear Regression Results on the Effect of Green Pricing Practices on Firms' Non-financial Performance**Model Summary**

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.468 ^a	.219	.214	.73352

a. Predictors: (Constant), Green Pricing Practices

ANOVA^a

Model		Sum Squares	ofdf	Mean Square	F	Sig.
1	Regression	24.463	1	24.463	45.466	.000 ^b
	Residual	87.165	162	.538		
	Total	111.628	163			

a. Dependent Variable: Non-financial Performance

b. Predictors: (Constant), Green Pricing Practices

Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized t Coefficients Beta(β)	Sig.
1	(Constant)	1.752	.243		7.225 .000
	Green Pricing Practices	.471	.070	.468	6.743 .000

a. Dependent Variable: Non-financial Performance

b. Predictors: (Constant), Green Pricing Practices

Source: Research Data (2026)

The model summary results in Table 8 show a positive relationship between green pricing practices and non-financial performance with a correlation coefficient of $R = 0.468$. Additionally, R^2 is 0.219 which implies that 21.9% of the variation in the non-financial performance of food and beverage manufacturing firms in Kenya is explained by green pricing practices. However, 71.6% of the variation in non-financial performance is explained by other factors not included in the model. The ANOVA results testing the effect of green pricing practices on non-financial performance of food and beverage manufacturing firms in Kenya indicates that the regression model is statistically significant ($F = 45.466$, $p = 0.000$) since the p-value is less than the significance level of 0.05. The regression sums of squares (24.463) compared to the total sum of squares (111.628) indicates that green pricing practices explains some proportion of the variation in non-financial performance. This demonstrates that enhancements in green pricing practices such as setting premium prices, considering the willingness of customers to pay premium prices and the cost of eco labels are associated with improved non-financial outcomes including the acquisition of new customers.

The coefficients result in the model show a positive and statistically significant effect on non-financial performance ($\beta = 0.468$, $t = 6.743$, $p = 0.000$). The unstandardized coefficient ($B = 0.471$) imply that a one-unit increase in green pricing practices leads to an increase of 0.471 units in non-financial performance, holding all other factors constant. This shows that firms that consider the

cost of environmentally friendly practices while setting prices such as premium prices for green products, willingness of customers to buy and pay higher prices and the cost of eco labels experience improved non-financial outcomes such as acquisition of new customers. These results lead to the rejection of the null sub-hypothesis H_{02} which states that green pricing practices have no significant effect on non-financial performance of food and beverage manufacturing firms in Kenya. Other studies with similar findings include; Harini et al. (2020), who found that green prices positively and significantly influence non-financial performance. Alabor and Anyasor (2021) indicated that green pricing initiatives had a positive and significant relation on non-financial performance of Nigeria's South-East breweries. Larbi-Siaw et al. (2022) found that green pricing strategies significantly impacted on non-financial performance. However, other studies contradicted the findings. For instance, Martinez-Conesa et al. (2020) found that green pricing strategies alone would not have significant impact on non-financial performance. Collectively, these studies corroborate the present study's results, confirming that green pricing practices are a critical driver of non-financial performance across diverse contexts. The summary of the outcome of the hypothesis's tests are presented in Table 9

Table 9: Summary of outcomes of Hypotheses Tests

Hypotheses and Sub Hypotheses	Test Criteria	Test Results	Interpretation
H_{01} : Green pricing practices have no significant effect on financial performance of food and beverage manufacturing firms in Kenya	Hypothesis rejected if the p-value of the t-test was less than 0.05	p-value=0.000	H_{01} was rejected
H_{02} : Green pricing practices have no significant effect on non-financial performance of food and beverage manufacturing firms in Kenya	Hypothesis rejected if the p-value of the t-test was less than 0.05	p-value=0.000	H_{02} was rejected

Source: Researcher (2026)

The study findings showing the positive and significant effect of green pricing practices on performance of food and beverage manufacturing firms in Kenya. The finding is associated with ecological pricing tactics that assist firms to wholesomely consider economic outcomes whilst aligning with market expectations and institutional pressure. Adoption of green pricing involves integration of environmental and social value within the product pricing model. This ensures that firms recover the initial and production costs of investing in green practices. Additionally, in some context, firms charge premium prices for green products to willing environmentally conscious customers to differentiate them from conventional products (Chen et al., 2024). Such pricing initiatives contribute to improved profit margins and sales revenues leading to better financial performance.

The financial perspective on the positive and significant effect of green pricing practices in food and beverage manufacturing firms in Kenya is explained by the effectiveness of the green pricing initiatives that promote the realization of sales revenue as well as improving profitability. The incorporation of the costs of green practices in the product prices allows firms to recover costs such as cost of; clean eco designs, biodegradable packaging, eco labels and cleaner production processes. Consequently, green pricing helps manufacturing firms incorporate premium pricing techniques for customers who perceive added environmental and quality benefits as distinct. This promotes sales revenues and profit margins occasioned by increase in purchases as well as premium pricing in market segments whose customers are willing to pay premium products for green products. Therefore, green pricing practices are precursors of enhanced firm financial performance resulting from cost recovery, increased sales volumes leading to firms overall financial outcome.

The positive effect of green pricing practices on non-financial performance of food and beverage manufacturing firms in Kenya is attributed to enhanced customer loyalty through repeat purchases, brand reputation and stakeholder trust. Environmentally conscious customers are more likely to perceive firms that deliberately communicates and shows commitment to environmental value of their products through pricing as responsible and credible. This compels customers to be loyal to the brand, improve the firm's image and reduce price sensitivity in the long run leading to acquisition of new customers and long-term customer relationships as non-financial performance outcome. Moreover, green pricing practices signifies the firms adherence to ethical business conduct leading to improved corporate image and market legitimacy. These in return support the firm in competitive positioning and sustainability in the long run.

These empirical pathways are in consensus with the Natural Resource Based View (NRBV). Based on the NRBV, green pricing practices are construed as the embodiment of strategic environmental capabilities that distinctively differentiates firms in the marketplace. The NRBV posits that environmentally oriented capabilities such as the capability to determine product prices with environmental sustainability value makes it possible to be sources of competitive advantage especially when the pricing is valuable, rare and difficult to imitate. According to Khamis et al. (2025), the firm's ability to incorporate environmental sustainability into product pricing suggests superior resource efficiency, environmental stewardship and creative value addition which reinforces market positioning and financial tenacity. The unique, difficult to imitate capabilities support firms not only in cost recovery but also guarantee consistent profitability and sales margin by leveraging the green pricing practices as a tool for competitive differentiation and customer value creation.

The Institutional Theory (IT) asserts the positive effect of green pricing practices on firm performance findings by demonstrating how coercive (regulatory), mimetic and normative pressure shape the behaviour and outcomes of the manufacturing firms. According to Liang et al. (2023), firms in existing and emerging markets and economies are compelled both by industry standards and associations, regulatory requirements and normative social systems to adopt pricing practices that integrate and reflect environmental sustainability costs and commitments. Institutional expectations are met when manufacturing firms proactively incorporate green pricing

initiatives which reduces the risk of regulatory fines and penalties as well as promoting their legitimacy. In response to normative pressure, firms observe and copy industry trends thereby adopting the prevailing green pricing practices, encouraging broader acceptance and legitimacy to avoid sanctions and reputational penalties which goes a long way in enhancing performance. Firm's conformance to institutional norms exposes them to equitable and transparent pricing for green products which provides them with opportunity to achieve market confidence as strategic in profitability and sales revenue growth.

Generally, the positive and significant effect of green pricing practices on performance reflects the firm's capability to leverage between the firm's strategic resource allocation and institutional legitimacy. The adoption of pricing practices that communicates and considers green practices ensures that the food and beverage manufacturing firms in Kenya leverage on improved profits, sales revenues, and new customer acquisition.

4. CONCLUSION AND RECOMMENDATIONS

Based on the findings, the study concludes that green pricing practices have a positive and significant effect on the financial and non-financial performance of food and beverage manufacturing firms in Kenya. The findings demonstrate that firms that objectively incorporate the cost of ecolabels in their prices, set premium prices for green products and consider the willingness of customers to pay higher prices for green products are better placed to improve firm's profitability, sales revenue and new customer acquisition. Therefore, the study concludes that green pricing practices are key strategic opportunity for food and beverage manufacturing firms in Kenya to achieve environmental sustainability gains in an environment with rising concerns on environmental management.

The study recommends the following;

The marketing managers need to establish performance monitoring systems to assess the effectiveness of green pricing strategies by assessing contribution and effectiveness of each green pricing model to continuously refine their implementation to maximize long-term value creation. The study recommends industry associates and professional bodies to consider collaborating with manufacturing firms in developing effective green pricing models, facilitating trainings, workshops and capacity building sessions amongst industry players to communicate existing and emerging green pricing initiatives transparently and consistently to build customer trust. By doing so, firms can leverage stakeholder trust to enhance both financial and non-financial performance.

5. SUGGESTIONS FOR FURTHER STUDY

To assess the long-term effect of the green pricing effect on firm performance, the study recommends future use of the longitudinal research design. Moreover, future studies should consider broadening the studies to the larger manufacturing sector, hospitality and service industries in other contexts to enhance generalization.

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