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Influence of Product Management Strategy on Organizational Performance of Public Sugar-producing Companies in Western Region – Kenya

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Abstract

The sugar industry contributes approximately 15% of Kenya's agricultural GDP and supports about 25% of the country's population through direct and indirect employment. This study examined the influence of product management strategy on organizational performance of public sugar-producing companies in the Western Region of Kenya, with economic policies as a moderating variable. The study was anchored on the Resource-Based View theory and adopted a descriptive research design. The target population comprised 616 senior and middle-level managers, from whom a sample of 270 respondents was selected using the Taro Yamane formula and purposive sampling. Primary data were collected using structured questionnaires and analyzed using descriptive statistics, correlation, and regression analysis. The findings revealed that product management strategy has a positive and statistically significant influence on organizational performance, indicating that effective product planning, innovation, and market-oriented decision-making enhance organizational outcomes. The study concludes that strengthening product management practices can improve competitiveness and organizational performance among public sugar-producing companies. The study recommends that firms invest in market research, product innovation, and research and development while aligning product development with changing customer needs to achieve sustainable organizational performance.

Key words: *Product Management Strategy, Organizational Performance, Public Sugar-Producing Companies, Product Innovation, Market Research, Resource-Based View, Kenya*

1. Introduction

Product management strategy refers to the systematic planning, development, positioning, and delivery of products in a way that aligns with an organization's goals and market needs. In public manufacturing firms, including sugar-producing companies, effective product management strategies are vital for enhancing product quality, responding to consumer demands, increasing competitiveness, and ultimately improving organizational performance.

According to Zhang et al. (2021), strategic product management through continuous product improvement, market segmentation, and lifecycle planning has significantly contributed to firm growth and profitability in the food and agricultural processing industries. In the context of the global sugar industry, companies in countries like Brazil, Thailand, and India have embraced diversified product portfolios (e.g., ethanol, molasses, and refined sugar variants) as a way to mitigate market risks and improve profitability (Fernandez & Kumar, 2022). Additionally, digital product management tools and customer-centric models are being adopted to streamline production and distribution strategies (Brown & Lee, 2023).

Across Africa, the manufacturing sector including agro-processing industries has recognized the importance of product management strategies in achieving operational sustainability. However, challenges such as limited market research, low levels of innovation, and poor customer feedback mechanisms hinder effective product strategy implementation. A study by Moyo and Asante (2021), on agro-industrial firms in Southern Africa revealed that companies with structured product development and branding strategies recorded improved market share and customer retention. Similarly, Adeyemi and Okoro (2023) found that sugar-processing firms in West Africa that engaged in value addition and diversification outperformed those reliant on a single-product approach, especially in volatile market conditions.

In Kenya, public sugar-producing companies have faced operational and financial challenges largely attributed to outdated product strategies and a lack of responsiveness to changing market demands. According to Otieno and Mutua (2022), most public sugar firms continue to rely on traditional bulk sugar production, with little effort toward product innovation or differentiation. This has weakened their competitive edge, especially against private millers and imported sugar products. A study by Wekesa et al. (2023) emphasized the need for strategic product management practices such as market-driven product design, customer-focused packaging, and diversification into value-added products (e.g., brown sugar, industrial sugar, and by-products like

ethanol). Moreover, aligning product strategy with consumer preferences and national trade policies has been found to significantly enhance firm performance (Kilonzo & Muriithi, 2024).

1.1 Organizational Performance

Firm performance is a measurable indicator of the extent to which an organization achieves its objectives and reflects its level of success (Al-Matari, *et al.*, 2014). Almatrooshi *et al.*, (2016) define organizational performance as the tangible achievements or outcomes of an organization that align with the expected results. Organizational performance in sugar manufacturing firms can be assessed using indicators such as operational efficiency, production quality, market share, cost reduction, and customer satisfaction, as these measures reflect both operational effectiveness and market competitiveness Misiko *et al.*, (2023). Multiple methodologies and standards can be used to assess the efficiency and effectiveness of sugar companies. According to Chmielewska et al. (2022), evaluating a company's success involves analyzing its financial dimension, which includes factors like profitability, financial liquidity, and capital structure. Furthermore, it is important to consider operational performance and non-financial factors such as efficiency, productivity, and healthcare outcomes.

1.2 Public Sugar Industry in Kenya

The sugar industry primarily concentrates in the western region of Kenya. These encompass the heavily populated provinces of Nyanza, Western, and select areas inside the Rift Valley. In 2003, Sucam asserted that the eastern and coastal regions also harbour substantial potential. The government established Muhoroni, formerly known as East African Sugar Company Ltd., in 1966, shortly after achieving independence in 1963. The government established Chemelil in 1968, Mumias in 1973, Nzoia in 1978, and South Nyanza in 1979. In 1970, they acquired control of Miwani Sugar, a company they had initially established as a personal enterprise in 1922. Significant private ventures in Kenya's sugar industry include West Kenya Sugar, Kibos Sugar and Allied Industries Ltd., Butali Sugar Company, and Busia Company. Only Butali and West Kenya are currently operational among the private investments, with the others either planned or in various stages of development. Currently, both Miwani and Muhoroni are under the supervision of a receiver, although only Muhoroni is functioning. According to the 2005 report from the Kenya Sugar Board, the government's ownership percentages in the following sugar firms are as follows: Miwani Sugar (49%); Muhoroni (82.78%); Chemelil (97.64%); Nzoia (98.87%); and South Nyanza (99.79%). The government has sold off its holdings in Mumias and Miwani, and now only holds a 20 percent share in Mumias. Mumias is currently the only company on the Nairobi Stock Exchange that is still owned by the government. The industry is susceptible to state and political influence because of its substantial government ownership (Sucam, 2003).

The Kenya Sugar Board serves as the primary regulatory authority for the industry. The primary objectives of KSB are to oversee, enhance, and advance the sugar industry, while also facilitating the coordination of operations among individuals and organizations in the sector. Furthermore, KSB endeavors to ensure fair and unbiased access to the advantages and resources of the sector for all individuals and groups who express interest. KSB consists of a total of 12 members, each serving a three-year term that is eligible for renewal. The Minister of Agriculture plays a crucial role in enforcing the Special Development Levy (SDL) on domestically produced and imported sugar. Furthermore, they collaborate with the Attorney General to craft legislation and select individuals to serve on the Sugar Advisory Tribunal (SAT). The key stakeholders in the industry comprise farmers, the government, sugar factories, and out-grower institutions such as the Kenya Sugarcane Growers Association (KESGA), Kenya Sugar Research Foundation (KESREF), importers, financial institutions, transporters, consumers, and advocacy groups like Sugar Campaign for Change (SUCAM). Unfortunately, certain individuals have not actively participated in the required procedures, leading to inadequate representation. Consequently, a select few individuals have assumed the duty of making decisions that have a substantial impact on the entire organization. This result is a clear indication of political intervention.

2. Statement of the Problem

Public sugar manufacturing firms in Kenya are expected to operate efficiently by adopting robust operational strategies, including product development, supply chain optimization, and demand forecasting, to enhance productivity, reduce operational costs, and improve market competitiveness (Slack & Lewis, 2020; Heizer, Render, & Munson, 2023). These firms should align their operational strategies with national economic policies, including government incentives, subsidies, and trade regulations, to enhance their competitive advantage and achieve sustainable growth (Porter, 1985). Effective operations strategy enables firms to improve production efficiency, increase profitability, expand market share, and contribute to industrial stability and national economic development (Hayes et al., 2005).

However, the Kenyan sugar industry continues to experience significant operational inefficiencies, declining productivity, financial distress, and increasing competition from imported sugar. According to the Kenya National Bureau of Statistics (KNBS, 2024), local sugar production has fluctuated considerably in recent years, reflecting persistent challenges in cane supply, factory inefficiencies, and financial constraints. Similarly, reports by the Agriculture and Food Authority (AFA, 2024) indicate that several public sugar manufacturing firms continue to operate below their installed capacity due to aging machinery, inadequate working capital, poor strategic management, and inconsistent sugarcane supply. For example, Muhoroni Sugar Company has experienced prolonged operational shutdowns; Mumias Sugar Company has remained under receivership, while Nzoia Sugar

Company has struggled with low capacity utilization and financial challenges (AFA, 2024). In contrast, leading global sugar-producing countries such as Brazil have adopted efficient operations management practices, modern production technologies, and integrated supply chain systems, enabling them to remain among the world's most competitive sugar producers (Food and Agriculture Organization of the United Nations [FAO], 2024; United States Department of Agriculture [USDA], 2024). The inability of many Kenyan public sugar firms to effectively implement strategic operations management practices has contributed to declining competitiveness, reduced profitability, low production capacity, and increasing dependence on imported sugar (KNBS, 2024; AFA, 2024).

Previous studies have consistently demonstrated that product management and operations strategies significantly influence organizational performance. For example, MacCormack et al. (2012) found that effective product management enhances innovation, operational efficiency, and firm competitiveness. Similarly, Lechner and Gudmundsson (2014) established that strategic management practices positively influence firm performance through improved resource utilization and market responsiveness, while Burgess, Singh, and Koroglu (2016) emphasized the importance of operations strategy in improving organizational competitiveness and performance. Within the Kenyan context, Mbithi, Muturi, and Rambo (2015) examined market development strategies in the sugar industry and established that strategic market initiatives contribute to improved organizational performance. However, these studies did not comprehensively examine how product management strategy influences organizational performance in public sugar manufacturing firms. Consequently, there remains a significant contextual and empirical gap regarding the application of product management strategy within Kenya's public sugar manufacturing sector. This study therefore sought to bridge this gap by investigating the influence of product management strategy on organizational performance in public sugar manufacturing firms in Western Kenya.

3. Objective of the Study

The main objective of the study was to determine the influence of product management strategy on public sugar-producing companies 'organizational performance in Western region, Kenya.

4. Literature Review

4.1 Theoretical Literature Review

4.1.1 Resource-Based View (RBV)

The Resource-Based View (RBV) theory originated from the pioneering work of Penrose (1959), who argued that a firm's internal resources and managerial capabilities are the primary drivers of its growth and competitive advantage. The theory was later formalized by Wernerfelt (1984), who introduced the concept of viewing firms as bundles of strategic resources. Barney (1991) further developed the theory by proposing that firms achieve sustained competitive advantage when they possess resources that are valuable, rare, inimitable, and non-substitutable (VRIN). Consequently, the effective acquisition, development, and deployment of strategic resources determine organizational performance and long-term competitiveness.

Penrose (1959) conceptualized the firm as a collection of productive resources whose efficient utilization determines its growth potential, shifting attention from the traditional market-share perspective advocated by the Boston Consulting Group's Growth-Share Matrix. The Resource-Based View therefore emphasizes that organizational resources—including physical assets, financial resources, human capital, technological capabilities, organizational processes, and managerial knowledge—constitute the fundamental sources of competitive advantage and superior organizational performance (Barney, 1991; Wernerfelt, 1984). Firms that effectively develop and exploit unique resources and capabilities are better positioned to create sustainable competitive advantages that competitors find difficult to imitate.

The Resource-Based View further argues that firms can sustain competitive advantage by generating economic rents through their ability to identify, develop, combine, and preserve valuable strategic resources that distinguish them from competitors (Barney, 1991; Peteraf, 1993). The theory rests on two fundamental assumptions. First, firms within the same industry possess heterogeneous bundles of resources and capabilities, resulting in differences in organizational performance (Barney, 1991). Second, these resources are imperfectly mobile across firms, making them difficult to acquire, transfer, or imitate and allowing competitive advantages to persist over time (Peteraf, 1993; Barney, 1991).

Grant (1991) describes the Resource-Based View as an "inside-out" approach to strategy formulation, whereby organizations begin by evaluating their internal resources and capabilities before selecting strategies that maximize value creation and sustain competitive advantage. Under this perspective, a firm's growth strategy is largely determined by the availability of strategic resources and its capability to deploy them effectively to enhance organizational performance.

Despite its significant contribution to strategic management literature, the Resource-Based View has attracted several criticisms. One limitation is that it places greater emphasis on internal resources while paying relatively less attention to external environmental factors such as industry dynamics, institutional pressures, technological changes, and market uncertainty

(Elshafeey & Trott, 2019). Similarly, Barney (2001) acknowledged that although the RBV explains the sources of sustained competitive advantage, it provides limited guidance on how firms create new strategic resources and capabilities in rapidly changing business environments. This limitation has led scholars to extend the theory through complementary perspectives such as the Dynamic Capabilities Theory, which emphasizes an organization's ability to integrate, build, and reconfigure resources in response to environmental changes (Teece, Pisano, & Shuen, 1997).

The Resource-Based View is highly relevant to this study because it explains how public sugar manufacturing firms can enhance organizational performance by effectively utilizing their strategic resources and capabilities. The theory suggests that successful implementation of operational strategies depends on the availability and effective deployment of organizational resources, including production technologies, skilled employees, supply chain capabilities, managerial expertise, and financial resources (Barney, 1991). Accordingly, the Resource-Based View provides the theoretical foundation for examining the influence of product management strategy, supply chain management strategy, and forecasting management strategy on organizational performance in public sugar manufacturing firms in Western Kenya.

4.2 Empirical Literature Review

4.2.1 Product Management Strategy and organizational Performance

Research by Kadhim, Ahmed, & Radhi (2024), aimed to study product quality management and its influence on the accounting performance of medium and small companies. This was done using 116 Asian small and medium companies from 2020 to 2023 in the study. The results determined that there is a positive and strong association between product quality management and the accounting performance of medium and small companies. The product quality management technique is reflected among the recent methods that companies can face with the present international technological revolution and the strong competition that characterizes big economies proposed by the nature of the globalization and challenge. The study at hand aims to know the role that product quality management plays in improving performance. Product quality practices affect accounting performance in light of the presence and types of innovation, radical product innovation, process innovation, requires more work to improve product quality.

Roach, D. C. (2011), examined the impact of product management as a set of organizational capabilities. It aims to investigate product management as a set of boundary spanning capabilities, by empirically relating these to firm performance. A measurement instrument was developed and validated based on the extant product management literature. Using a heterogeneous sample of 63 Atlantic Canadian SMEs in the manufacturing and professional/technical services sectors, data are collected to test the survey instrument and establish preliminary construct validity. Both firm performance and product management measures demonstrate internal consistency. Several product management sub-constructs demonstrated reliability and in some cases validity, substantiating the product management literature. These included product pricing, sales support and forecasting.

Maurice (2013) investigated the relationship between organizational performance and product development by innovation. The data was collected from the marketing managers, operation managers and those managers who have been involving greatly in product development and innovation process. A total of 185 useable questionnaires were completed though research sample of 120 firms in Nigeria. The result of the study was interpreted using Likert model and SPSS package for the analysis of some appropriate statistical methods such as factor analysis, regression, and reliability analysis. The findings show that the impact of product development on organizational performance was higher in Nigeria when consumers perceive product innovation as stronger, more favourable and more unique. Creativity/quality of the innovation process exerts a positive influence on product development and organizational performance. To literature, the study has supported previous studies on product development and performance especially in developing economies such as Nigeria, Malaysia, Ghana, and among others. Therefore, it was recommended that creative/quality innovations should be maintained continuously to develop appropriate

Auma, & Waithaka, (2020) investigated the influence of product development strategy on the organizational performance of public universities in Kenya. The study was grounded on the resource-based view theory and the structure-conduct-performance framework. The study employed a cross-sectional survey design involving the total population (census) of the 33 public universities in Kenya. The cross-sectional survey design was used because of the comparative analysis across the public universities in Kenya. The cross-sectional survey also helped to prove and/or disprove assumptions. The respondents were staff from marketing, planning and strategy, finance and administration departments of the universities. Data was collected through semi-structured research questionnaires, which were self-administered to the respondents with the assistance of the researcher. They were dropped and picked from the respective respondents. Data was analyzed through descriptive statistics and inferential statistics including regression analysis and correlation to establish the potential relationship between the dependent and independent variables. The study findings were presented through frequency distribution tables. The study found that product development has a positive influence on the performance of public universities. The focused on public universities, which are service-oriented institutions, whereas the new study focuses on public sugar-producing companies, which are product-based manufacturing firms.

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Mbithi, Muturi & Rambo (2015), investigated the effect of market development strategy on performance in sugar industry in Kenya. Two indicators of product development strategy which include development of new product and improvement of existing products were considered as independent variable indicators while performance measures were total output turnover, profitability, sales quantities and capacity utilization. This study's results show that introduction of other new products other than sugar has largely been minimal while improvement of existing products has adopted through packaging and branding. Resultant performance was positive in total output turnover, sugar sales quantities, capacity utilization was moderate while profitability after tax gave fluctuating results. Performance was fairly responsive to improvement of product processes procedures but poor in introduction of new products since actualization is yet to be realized. Implication aspect of this study's results depicts the crucial need of actualization of new products to the consumer and to exhaustively factory capacities. Introduction of current technologies though been affected by some companies is promising to be a key in investment both for high, diverse production and cheaper with minimum wastage. Present day's managers in effect should take care to build reasonable and realistic expectations about potential new products that are compatible with the current sugar production processes. The study found that product improvement was mainly in packaging and branding, but it did not explore why sugar firms struggle to introduce new products.

4.2.2 Organizational Performance

Shisia, *et al.* (2014), conducted a research study to examine the relationship between strategic innovation and performance in public institutions in Kenya. They revealed that the primary criterion for evaluating the overall performance of businesses is sales volume. Sales volume is a quantitative indicator that assesses the pace of change in an organization's sales revenue, whether it is increasing or decreasing. Tracking this metric is vital for any organization, as it aids in predicting expansion and is pivotal in formulating top-level strategic choices. Executives and sales directors use the sales volume statistic to evaluate the effectiveness of the sales organisation (O'Sullivan & Abela, 2007). Organizations frequently employ sales as a metric to assess their effectiveness. However, organizations have adopted several iterations of sales techniques.

Sulaiman et al. (2011) investigated the relationship between organizational learning, innovation, and company performance in their study. The researchers evaluated organizations' performance by analyzing sales growth, profit growth, and employee turnover rates. Output measures are quantitative metrics used to quantify the number of services and goods produced by an organization. Typically, we quantify output by counting the number of individuals receiving services or the volume of services rendered.

4.3 Conceptual Framework

The conceptual framework illustrates the relationship between the independent variable, product management strategy, and the dependent variable, organizational performance, among public sugar-producing companies in the Western Region of Kenya.

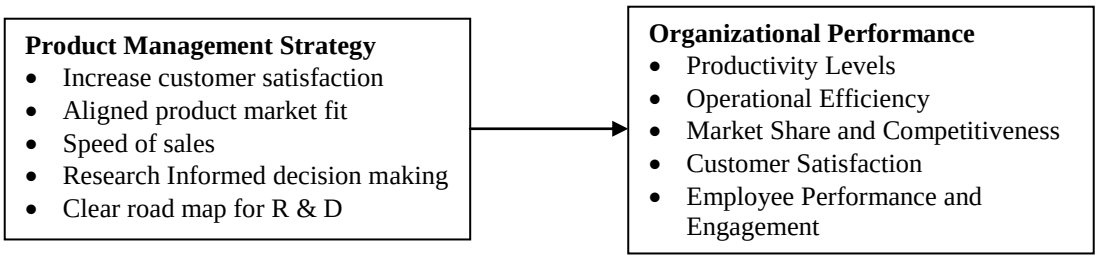

Fig.1: Conceptual Framework

The framework above illustrates the correlation between the dependent variable and independent variable, in this particular context. Organizational performance is assessed by examining productivity levels, operational efficiency, market share and competitiveness, customer satisfaction, employee performance and engagement as indicators of the outcome we are measuring.

5. Research Methodology

The study employed a descriptive research design. The descriptive study design involves analyzing, measuring, comparing, categorizing, and explaining data. A descriptive research design sought to provide a detailed and comprehensive portrayal and analysis of a specific event or occurrence. Further, the study used it because of its ability to provide statistical judgments about the entire population and extrapolate findings to real-world scenarios. The study utilized a descriptive survey methodology to establish the connection between the variables under investigation. This study aimed to investigate the correlation between product management strategy and Organizational Performance of Public Sugar Manufacturing Firms in Western Region, Kenya: The Moderating Role of Economic Policies.

The study was conducted at all state-owned sugar production enterprises situated in the western area of Kenya. The four companies are Mumias Sugar, Nzoia Sugar, Muhoroni, and Chemelil Sugar. These companies are located in the counties of Bungoma, Kakamega, Kisumu, and Migori.

The researcher has selected a certain cohort of individuals, referred to as the complete population, for investigation. Mugenda & Mugenda (2013), provide a precise explanation of the target population as a specific subset within a larger group of individuals to whom a researcher applies their findings. This aligns with the findings of Sekarani's (2013) study. The study concentrated on analyzing a specific group of 616 respondents who currently work for Kenya's four public sugar manufacturing companies. The sugar production companies in Kenya comprise Chemilil, Muhoroni, Nzoia, and Mumias.

Table 1: Breakdown of Senior Managers and Middle Level Managers

Company	Senior Level managers	Middle level managers	Total Sample
Muhoroni	15	55	70
Mumias sugar	30	180	210
Nzoia sugar	65	200	265
Chemilil	31	40	71
Total	**141**	**475**	**616**

Source: Respective sugar companies, January (2023)

Analyzing a sample, a representative subset of the entire population, allows for generalization. A sample size is a subset of individuals taken from a broader population. The Taro Yamane formula for estimating sample size (Yamane 1980) is used to obtain the sample as indicated below.

$$\mathbf{n = N / (1 + N (e)^2}$$

Where
n = Sample size
N = Population size
e = the level of significance or limit of tolerable error /precision
1 = Constant

The level of significance or limit of tolerable error in this sample estimate
(e) = 0.05
N = 616 (senior managers and middle level managers)

$$\mathbf{n = N / (1 + N (e)^2}$$

$$= 616 (1 +616 (0.05^2)$$

$$\mathbf{n = 242.5 \approx 243}$$

To cater for non-response, the study increased sample size by 10% to the main sample. Jones (1996) pointed out that 10% oversampling is required to lessen non-response bias.

90%=243
100%=?

100/90*243=**270**

Table 2: Sample Size per Company in Government owned Sugar Manufacturing Firms

Company	Senior Level managers	Middle level managers	Total Sample
Muhoroni	6	24	30
Mumias sugar	13	79	92
Nzoia sugar	28	88	116
Chemilil	14	18	32
Totals	**61**	**209**	**270**

Source: Field Data, (2023)

Purposive sampling is useful for experts in the population's knowledge to pick in a non-random way, according to Ngami (2013), as referenced by Odollo (2019). The researcher employed purposive sampling to choose particular respondents who gave pertinent and thorough information on the study's variables.

A purposive sample of middle-level and senior managers was used in this instance. Purposive sampling was employed since it was suitable when the respondents are thought to be pertinent to the study's subject.

The study utilized questionnaires to get data from senior-level, middle-level managers and general employees. The decision to use these data collection tools is because of their ability to accurately capture managers' perspectives. The researcher administered questionnaires to gather data from high-ranking executives and middle-level managers in four government-owned sugar production companies in Kenya.

To test the hypotheses, simple and multiple regressions was used. Pearson product moment correlation (r) was derived to show the nature and strength of the relationship among the variables in the study. The Pearson correlation r, takes a range of values between +1 to -1. An r -value of 0.01-0.29 indicates a weak relationship, 0.03 - 0.49 indicates a moderate relationship whereas a value between ≥ 0.5 - 1 indicates a strong relationship (Cohen, 1988). Correlation results are reported at a significance level of 0.01 in line with other studies such as pierce (2014).

To determine the effect of product management strategy and organizational performance of public sugar manufacturing firms in Western Region, Kenya.

Simple regression analysis was done using direct relationships. The following model was used.

$$\mathbf{Y = \beta_O + \beta_1 X_1 + e}$$

Where:

Y = Organizational performance

β_o = Constant (coefficient of intercept),

β_1 Regression coefficient for X_i,

X_1 = product management strategy,

e = the error term reflecting other factors that influence public sugar-producing companies' Organizational performance.

6. Research Findings and Discussion

6.1 Descriptive Analysis

The mean scores (M), standard deviations (SD), summarized for all the measurement items or statements related to organizational performance and product management strategy.

6.1.1 Product Management Strategy

Product management strategy refers to the systematic planning, development, positioning, and continuous improvement of products to meet market demands and achieve organizational objectives.

According to Zhang et al. (2021), strategic product management through continuous product improvement, effective market segmentation, and proactive product lifecycle planning has significantly contributed to firm growth and profitability. The descriptive analysis of product management strategy is presented in Table 3.

Table 3: Management Strategy

Statement	Mean	Std. Dev
B1: Product management strategies have significantly contributed to improving customer satisfaction in our company	3.42	1.29
B2: Our product offerings are well-aligned with the current market demands and customer preferences.	3.39	1.30
B3: Product management initiatives have positively impacted the speed at which our products are sold in the market	3.51	1.20
B4: Our product development decisions are consistently informed by research and market data	2.62	1.46
B5: Our company has a clear and strategic roadmap for research and development that guides product innovation	2.71	1.40
Average Mean	**3.13**	**1.33**

Source: Field Data (2025)

The findings presented in Table 3. Indicate that product management strategies have moderately contributed to organizational outcomes. Specifically, respondents moderately agreed that product management strategies have significantly contributed to

improving customer satisfaction in the company (mean = 3.42, SD = 1.29). This suggests that product-related decisions and initiatives are perceived to have a positive, though not very strong, influence on customer satisfaction levels.

Similarly, respondents moderately agreed that the company's product offerings are well aligned with current market demands and customer preferences (mean = 3.39, SD = 1.30). This implies that while efforts have been made to ensure market alignment, there remain gaps in fully capturing evolving customer needs and preferences.

In addition, product management initiatives were perceived to have positively influenced the speed at which products are sold in the market (mean = 3.51, SD = 1.20). This item recorded the highest mean among the product management indicators, suggesting that respondents acknowledge the role of product management in enhancing market responsiveness and sales performance.

However, the findings reveal notable gaps in research-driven product development and innovation planning. Respondents expressed low agreement that product development decisions are consistently informed by research and market data (mean = 2.62, SD = 1.46). This indicates uncertainty or dissatisfaction regarding the extent to which systematic research and empirical market insights guide product-related decisions within the company.

Similarly, respondents were unsure whether the company has a clear and strategic roadmap for research and development that guides product innovation (mean = 2.71, SD = 1.40). The relatively low mean score suggests weaknesses in long-term product planning and structured innovation processes, which may hinder sustained competitiveness and product differentiation.

Overall, the items measuring product management strategy recorded an average mean of 3.13 and a standard deviation of 1.33, indicating a moderate level of implementation. The results suggest that while product management strategies contribute positively to customer satisfaction and market performance, there are significant shortcomings in research-informed decision-making and strategic innovation planning. If not addressed, these gaps may limit the firm's ability to sustain product competitiveness and achieve long-term growth.

These findings are consistent with Kadhim, Ahmed, and Radhi (2024) who established a positive and strong association between product quality management and firm performance among small and medium enterprises in Asia. Their study demonstrated that organizations that emphasize continuous product improvement, innovation, and quality management tend to achieve superior accounting and operational performance. This supports the current study's finding that product management initiatives positively influence customer satisfaction and the speed at which products are sold, although gaps remain in research-driven decision-making and innovation planning.

Further, the results align with Roach (2011) who examined product management as a set of organizational capabilities and found that product management practices such as product pricing, sales support and forecasting significantly enhance firm performance. The moderate mean scores observed in this study suggest that while some product management capabilities are in place, others particularly those related to systematic research and strategic planning are not fully institutionalized, thereby limiting their full performance potential.

Similarly, the findings corroborate Maurice (2013) who reported that product development through innovation exerts a positive influence on organizational performance, especially when product innovation is perceived as strong, unique, and supported by high-quality creative processes. The relatively low agreement on the use of research and market data to inform product development in the current study suggests weaknesses in the innovation process, which may constrain the firm's ability to fully benefit from product development initiatives.

At the local level, the results are in agreement with Auma and Waithaka (2020) who found that product development strategy positively influences the performance of public universities in Kenya. Although their study focused on service-oriented institutions, the findings reinforce the broader argument that structured product development and strategic innovation planning are critical drivers of organizational performance. This comparison underscores the relevance of product management strategies across both service and manufacturing contexts.

Moreover, the findings resonate with Mbithi, Muturi, and Rambo (2015) who observed that product improvement particularly through packaging and branding positively influenced performance in Kenya's sugar industry, while the introduction of new products remained minimal. This mirrors the current study's observation that product management strategies are more effective in enhancing existing product performance than in driving research-informed innovation and long-term product development. The limited emphasis on new product development and strategic R&D planning may explain the moderate overall performance of product management strategies observed in the study.

Overall, the empirical evidence supports the conclusion that effective product management strategies enhance organizational performance; however, the current findings suggest that inadequate research-driven decision-making and weak innovation roadmaps may hinder firms from fully realizing the benefits of product management practices.

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6.1.2 Organizational Performance

Almatrooshi et al. (2016) define organizational performance as the tangible achievements or outcomes of an organization that align with the expected results. The study analyzed the descriptive statistics for organizational performance using minimum, maximum, mean and standard deviation. Table 4 highlights the findings on employee output.

Table 4: Organizational Performance

Statement	Mean	Std. Dev
F1:The overall productivity of our sugar production company has consistently improved over the past yea	2.65	1.34
F2:Our company has experienced a positive financial performance, with increased revenues and profitability, in recent periods	3.07	1.37
F3:Our company has effectively reduced operational inefficiencies, resulting in smoother production processes and lower costs	2.89	1.36
F4:Our company has increased its market share and competitiveness in the sugar production industry	2.98	1.36
F5:Our company's products meet customer expectations, leading to high levels of customer satisfaction and loyalty	3.12	1.32
F6:The performance and engagement of employees within our sugar production company have positively contributed to organizational success	3.11	1.35
Average Mean	**2.97**	**1.35**

Source: Field Data (2025)

The descriptive statistics presented in Table 4 indicate that organizational performance within the sugar production company is perceived to be moderate but generally weak, with an overall average mean of 2.97 and a standard deviation of 1.35**.** This suggests that respondents were largely neutral to slightly agreeable regarding recent performance outcomes, reflecting persistent operational and market challenges within the firm.

Specifically, respondents expressed low agreement that overall productivity has consistently improved over the past year (mean = 2.65, SD = 1.34). This is the lowest mean among the performance indicators and suggests that productivity gains have been limited or inconsistent, possibly due to inefficiencies in production processes, supply chain disruptions, or resource constraints. In terms of financial outcomes, respondents moderately agreed that the company has experienced positive financial performance, including increased revenues and profitability (mean = 3.07, SD = 1.37). While this indicates some level of financial improvement, the moderate rating implies that such gains may not be substantial or sustainable across different operational periods.

Respondents also showed low to moderate agreement that operational inefficiencies have been effectively reduced**,** resulting in smoother production processes and lower costs (mean = 2.89, SD = 1.36). This finding suggests that inefficiency reduction initiatives may exist but have not yet translated into strong or widely perceived improvements in operational effectiveness. Similarly, respondents were uncertain that the company has increased its market share and competitiveness within the sugar production industry (mean = 2.98, SD = 1.36). This reflects the competitive pressures facing the industry, including low-cost sugar imports, policy constraints, and fluctuating consumer demand, which may limit the firm's ability to expand its market position.

On the positive side, respondents moderately agreed that the company's products meet customer expectations**,** leading to satisfactory levels of customer satisfaction and loyalty (mean = 3.12, SD = 1.32). This suggests that product quality remains a relative strength, even as other performance dimensions lag behind. Additionally, respondents moderately agreed that employee performance and engagement have positively contributed to organizational success (mean = 3.11, SD = 1.35). This indicates that human capital remains an important asset for the company, although the moderate mean suggests that employee potential may not be fully leveraged to drive stronger performance outcomes.

Overall, the findings reveal that while the sugar production company demonstrates moderate strengths in customer satisfaction and employee contribution, it continues to face notable challenges in productivity improvement, operational efficiency, and market competitiveness**.** The results underscore the need for more effective strategic interventions particularly in operations management, process optimization, and competitive positioning to enhance overall organizational performance and achieve sustainable growth.

6.2 Correlation Analysis

Prior to conducting the regression analysis, the researcher computed a correlation matrix to determine whether relationships existed among the study variables. The Pearson product-moment correlation coefficient (r) was employed to assess the strength

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and direction of these relationships. This analysis aimed to establish the degree of association between organizational performance and the independent variables, including product management, supply chain management strategy and forecasting management strategy. Pearson's correlation provided a quantitative measure of these relationships, with the results presented in Table 5.

Table 5: Correlation Analysis

		Product Management Strategy	Organizational Performance
Product Management Strategy	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	236	
Organizational Performance	Pearson Correlation	.491**	1
	Sig. (2-tailed)	.000	
	N	236	236

Source: Field Data (2025)

The study findings indicated that there is a significant positive relationship between product management strategy and organizational performance ($r = .491$, $p < .01$). This suggests that improvements in product management strategy are associated with higher organizational performance.

6.3 Regression Analysis

In this section, the study hypotheses were tested by performing linear regression analyses to examine the direct effects of each operational strategy on organizational performance. The regression analyses were conducted to assess the model fit and determine the predictive power of the study models. According to Field (2009), regression can be conducted using various methods, including forced entry. In this study, the Enter (forced entry) method was employed to evaluate the direct effects of the predictor variables product management strategy, supply chain management strategy and forecasting management strategy on the dependent variable, organizational performance.

The objective of this study was to determine the influence of product management strategy on the organizational performance of public sugar-producing companies in the Western region of Kenya. This was examined using linear regression analysis to assess both the strength of the relationship and the predictive power of product management strategy on organizational performance. The findings are discussed in tables 6, 7 and 8.

Table 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.491[a]	.241	.238	.48928

a. Predictors: (Constant), Product_Management_Strategy

The model summary shows that product management strategy has a correlation coefficient (R) of 0.491 with organizational performance. The R^2 value of 0.241 indicates that approximately 24.1% of the variance in organizational performance is explained by product management strategy. The standard error of the estimate (0.48928) suggests that the predicted values of organizational performance are fairly close to the observed values.

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.768	1	17.768	74.221	.000[b]
	Residual	56.019	234	.239		
	Total	73.788	235			

a. Dependent Variable: Organizational Performance
b. Predictors: (Constant), Product_Management_Strategy

The ANOVA table shows that the regression model is statistically significant ($F = 74.221$, $p < 0.001$). This indicates that product management strategy is a significant predictor of organizational performance and that the model provides a good fit to the data.

Table 8: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.645	.164		10.030	.000
	Product_Management_ Strategy	.445	.052	.491	8.615	.000

a. Dependent Variable: Organizational Performance

The null hypothesis stated that *H_{01}: Product management does not have a statistically significant influence on public sugar-producing companies 'organizational performance in Western region, Kenya*. The unstandardized coefficient (B = 0.445, $p < 0.001$) indicates that for every one-unit increase in product management strategy, organizational performance increases by 0.445 units, holding other factors constant. The standardized coefficient (Beta = 0.491) shows that product management strategy has a moderate positive effect on organizational performance.

The null hypothesis was thus rejected and it was concluded that product management had a significant effect on public sugar-producing companies 'organizational performance in Western region. The results derived the following new simple linear regression model as shown below.

$$\mathbf{Y = 1.645 + 0.445X_1 + e}$$

These findings are consistent with previous empirical studies. For example, Kadhim, Ahmed, & Radhi (2024) found a strong positive association between product quality management and accounting performance in small and medium enterprises in Asia. Their study emphasized that product quality practices, especially in the context of innovation, are critical for improving firm performance. Similarly, Roach (2011) highlighted the role of product management as a set of organizational capabilities that span pricing, sales support, and forecasting, which were positively linked to firm performance. The present study echoes these findings, showing that product management practices, including planning and forecasting, are significantly correlated with performance outcomes. Moreover, Maurice (2013) demonstrated that product development and innovation positively influence organizational performance, particularly when innovations are perceived as creative, high quality, and unique. This supports the current study's findings, suggesting that product management strategies that incorporate innovative practices can enhance the performance of public sugar-producing companies in Kenya.

At the national level, Auma & Waithaka (2020) found that product development strategy positively affects the performance of public universities in Kenya. While their study focused on service-oriented institutions, it reinforces the notion that strategic management of products—whether tangible goods or services plays a critical role in organizational performance. Finally, Mbithi, Muturi & Rambo (2015) examined product development in Kenya's sugar industry, noting that improvements in existing products, such as packaging and branding, positively influenced output and capacity utilization, although the introduction of new products was limited. The present study complements this by showing that broader product management strategies, beyond incremental improvements, significantly impact organizational performance, highlighting the need for comprehensive strategic planning in product management to optimize firm outcomes.

In summary, the findings of this study support and extend prior research by demonstrating that product management strategy is a significant predictor of organizational performance in the sugar industry in Kenya. The results underscore the importance of investing in product management practices, including quality control, innovation, and strategic planning, to achieve enhanced performance outcomes.

7. Conclusions and Recommendations

In conclusion, supply chain management strategy was found to be instrumental in improving organizational performance. Efficient supplier relationship management, inventory control, procurement cost management, and integration of supply chain activities have contributed to reduced production cycle times, enhanced operational efficiency, and improved profitability. Nonetheless, the findings indicate that supplier relationship management remains relatively underdeveloped compared to other supply chain dimensions. This suggests that while supply chain practices are positively influencing performance, further improvements in coordination, collaboration, and supply chain integration could yield even greater performance gains.

Managers should prioritize the strategic planning and implementation of product management initiatives to ensure alignment with market demand and customer preferences. This includes continuous research and development to guide product innovation and evidence-based decision-making. Firms should develop clear roadmaps for product development and ensure that key personnel are trained to execute market-driven strategies. Managers are encouraged to monitor product performance regularly and adapt offerings to evolving customer needs, thereby sustaining competitiveness and improving overall organizational performance.

Management should strengthen integration across supply chain activities, both internally among departments and externally with suppliers. This can be achieved through investment in coordination systems, real-time inventory tracking, and efficient procurement practices. Emphasis should be placed on reducing production cycle time, optimizing inventory turnover, and managing procurement costs to enhance operational efficiency and profitability. Firms should also develop policies that encourage continuous supplier engagement and performance monitoring to maintain a reliable and responsive supply chain.

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