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STRATEGIC

# PROCESS INNOVATION AND COMPETITIVENESS OF FOOD AND BEVERAGE MANUFACTURING FIRMS IN NAIROBI CITY COUNTY, IN KENYA

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## ABSTRACT

**Purpose of the Study:** This research study assessed the influence of process innovation on the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County, Kenya.

**Statement of the Problem:** Food and beverage manufacturing firms in Kenya are crucial to the economy, yet they face significant challenges in maintaining competitiveness. In 2017, food processing accounted for only 2.8% of Kenya's GDP (Ksh 58.6 billion), indicating underperformance.

**Methodology:** The study employed a mixed method research design surveying 201 licensed food and beverage manufacturing firms in Nairobi City County. Data was collected using questionnaires, with stratified and random sampling techniques used to select respondents. The unit of analysis consisted of owner/managers from these firms. Data analysis utilized SPSS software for quantitative analysis and content analysis for qualitative data.

**Results:** The findings revealed that process innovation significantly influenced firm competitiveness, explaining 62.9% of the variability in competitiveness ($R^2 = 0.6293$, $F(1, 190) = 322.449$, $p = 0.000$). Process innovations showed strong positive correlations with competitiveness (Beta = 0.793, p = 0.000). The interaction between process innovations and firm size was statistically significant (p = 0.001), confirming firm size's moderating effect on the relationship between innovation and competitiveness.

**Conclusion and Recommendations:** The study concluded that process innovation is crucial for enhancing competitiveness in food and beverage manufacturing firms, with firm size playing a significant moderating role. Based on these findings, it is recommended that managers adopt comprehensive innovation strategies and foster a culture of innovation through leadership commitment, while policymakers should provide financial incentives and facilitate access to innovation hubs for these firms.

**Keywords:** *Process Innovation, Competitiveness, Food and Beverage, Manufacturing Firms, Nairobi City County*

## INTRODUCTION

Manufacturing firms are widely regarded as important drivers of economic growth. Because of this recognition, entrepreneurial innovation is a critical issue, commanding approach flexibility around the world as a means of remaining competitive in today's dynamic global market. SMEs are more imaginative than larger firms due to their flexibility and ability to quickly and productively incorporate innovations generated by the organization's development activities (Garcia, 2014). Current and future risks, opportunities, and threats to manufacturing firms' sustainable development and competitiveness performance have resulted in the deployment of entrepreneurial innovations. The manufacturing sector contributes significantly to a country's economic development by creating new jobs, fostering creativity, and driving economic growth. Small and Medium Enterprises (SMEs), which include manufacturing firms, are the cornerstones of growth, employment, and income generation, making significant contributions to a country's economic and social sectors (World Bank, 2015; KNBS, 2016). More than 95% of businesses worldwide are SMEs, which account for roughly 60% of private sector employment (Ayyagari et al., 2011).

According to Miles et al. (2017), SMEs generate diverse sources of national income, increase a country's competitiveness, and promote economic development, resulting in economic flexibility and resilience. Furthermore, manufacturing firms play an important role in not only industrial outputs but also exports, producing a diverse range of products for both domestic and international markets. Manufacturing firms come in a variety of sizes, are increasingly adaptable, and can quickly conceptualize, develop, and implement new ideas. According to Poorangi, Khi, and Kardevang (2013), all organizations face stiff competition, regardless of size or scope of operations. According to Farsi and Toghrace (2014), failing to innovate has consequences such as economic collapse and a drop-in competitiveness. According to Rostek (2012), SMEs must improve their competitiveness in order to survive in a changing environment with intense business competition. Small and Medium Enterprises encourage innovation and competition while also improving enterprise culture, which is critical for modernization and industrialization (KIPPRA, 2013; RoK, 2015).

In today's volatile economic environment, competitiveness is more important than ever for a company's survival and success. Dynamism, also known as dynamic environments, demonstrates the uncertainty in customer demands as well as competitors' unpredictable actions. Manufacturing firms have little chance of success unless they innovate through new product development and gain access to higher value markets (Ahmad, Abubakar, Faziharudean & Mohamed, 2015). The macro and micro environments in which businesses operate are constantly changing, and players must adapt in order to survive and thrive. Given short product life cycles, technological advancements, fierce competition, and globalization, firm innovation and innovative behavior are critical for a company's survival, growth, and profitability in today's dynamic business environment.

Global competition, rapid technological change, market liberalization, poor infrastructure, and limited market access all have an impact on SMEs' competitiveness (Mwangi & Ngugi, 2014). Manufacturing firms can gain a competitive advantage by capturing value by identifying and protecting innovation activities from competitors. Nonetheless, manufacturers face unique challenges in distinguishing their products and services from competitors. According to Fathali (2016), innovation practices serve as a catalyst for improving firm methodologies, connections, and procedures in order to increase effectiveness and competitiveness. Most manufacturing firms will face increasing global competition in a dynamic market in the twenty-first century. The modern business operating environment is characterized by dynamism, necessitating constant adjustment of all business functions, strategies, and alignment in order to ensure the organizations' long-term growth. Manufacturing firms have gained global recognition for their contributions to the process of industrialization, the creation and growth of employment and output, the promotion of exports, and the restoration of regional balance (Kathuria & Manita, 2012).

Davila and Robert (2016) provide a detailed definition of innovation, which is frequently cited: Innovation is the multi-stage process by which organizations convert ideas into new/improved products, services, or processes in order to advance, compete, and differentiate themselves in the marketplace. Storey (2018) proposes that conceptualizations of what entrepreneurial innovation is are closely linked to what it is for, because it is clearly not an end in itself. As a result,

conceptualizations must be derived in large part from treatments of its objectives. Innovation is a specific tool of entrepreneurship. It is the act that gives resources a new ability to generate wealth.

## STATEMENT OF THE PROBLEM

Manufacturing firms are critical to the economy, contributing significantly to income generation, industrialization, and economic growth in both developed and developing countries. These businesses play an important role in driving growth and have significant implications for job creation, poverty alleviation, and wealth generation. Food and beverage manufacturers, in particular, play an important role in the economy's development and expansion. The sector has enormous potential to create jobs, alleviate poverty, and contribute to overall wealth creation. Food and beverage companies play an important role in meeting basic needs and advancing Kenya's socioeconomic progress, as the country's economy is heavily reliant on agriculture for manufacturing. In 2017, food processing, which includes beverages, accounted for Ksh 58.6 billion, or 2.8% of Kenya's GDP (Mutinda, 2017), highlighting the sector's importance in the national economy.

Despite their critical role, food and beverage manufacturers face an increasingly competitive and challenging environment. The modern globalized world, combined with new technologies and advanced connectivity, presents numerous opportunities while also posing significant threats. Most manufacturing firms face increased global competition in a constantly changing and unpredictable market in the twenty-first century. The environment in which these businesses operate is characterized by uncertainty about customer demands as well as unpredictable actions from competitors. Kenyan food and beverage firms have faced significant turbulence, including a decline in GDP, an increasing trade imbalance, and the exit of large multinational corporations (Maguta, Aduda, & Nyaoga, 2017). This stagnation affects the manufacturing sector's overall productivity, limiting its contribution to national economic growth (Alpkan, 2016). Furthermore, technological disruptions, market liberalization, poor infrastructure, and limited access to markets have exacerbated the challenges faced by these firms, limiting their ability to remain competitive. Previous research has not thoroughly investigated the relationship between marketing innovation and the competitiveness of food and beverage manufacturing firms in Nairobi City County, Kenya.

## SPECIFIC OBJECTIVES

i. To establish the influence of process innovation on the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County in Kenya.
ii. To explore the moderating role of the firm size on the relationship between process innovation on the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County in Kenya.

## RESEARCH HYPOTHESIS

**$H_{01}$**: There is no significant influence of process innovation on the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County in Kenya.

**$H_{02}$:** There is no significant moderating effect of firm size on the relationship between process innovation and competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County in Kenya

## THEORETICAL REVIEW

According to him, in a dynamic world, innovation and entrepreneurship are critical to economic growth. Entrepreneurship is all about innovation, and the function of entrepreneurs is to implement new combinations of factors of production, resulting in discontinuous and radical change that serves as the foundation for economic development. Entrepreneurs' specific tool is innovation, which allows them to capitalize on change as an opportunity for new services. Schumpeter attributes economic development to innovation, which may include "the launch of a new product or modification of an already existing product; the application of new methods of production, the opening of a new market; the use of new sources of supply or raw material, and the creation of a new industry structure" (Schumpeter, 1934). He sees innovation as a "process of industrial transformation," responsible for the transformation of the economic structure through what he refers to as 'creative destruction'.

According to the theory, innovations drive economic growth, and entrepreneurs are the ones who innovate. The entrepreneur is responsible for repurposing existing resources and devising new combinations. According to Schumpeter, entrepreneurship is one of the unique production factors that contribute to economic change. According to the theory, entrepreneurs change or transform the mode of production by exploiting an invention, opening up a new source of material supply or

a new outlet for products, or reorganizing an industry (Schumpeter, 1939). Entrepreneurs use innovation to create opportunities for a new product or service. Schumpeter (1928), as cited by Baba, Omwenga, and Mung'atu (2018), argued that entrepreneurs can generate new profits through their innovations. Mwangi and Ngugi (2014) define innovation as the creation of a new process or product that gives the creator a competitive advantage over its competitors by rendering some previous innovation obsolete. Innovation is the primary driver of business profitability and investment growth. Schumpeter argued that firms seeking profits must innovate because entrepreneurial innovation leads to higher profits. He saw innovation as a key driver of firm competitiveness and economic growth (Schumpeter, 1942).

In entrepreneurship, innovation provides a comprehensive, vibrant, and complementary foundation for entrepreneurial behavior, resulting in an organization's sustainability and superior performance. To achieve economic development, entrepreneurs must innovate, resulting in a process of creative destruction that generates value. The theory also informs research into the various types of innovation that can be used to generate value (Schumpeter, 1934). According to Schumpeterian theory, innovation is essential for competitiveness and long-term economic growth. It provides a better understanding of innovation and how it affects a firm's competitiveness and thus its performance. This theory is applicable to this study because sustained innovation in various investments can lead to competitiveness.

## CONCEPTUAL FRAMEWORK

According to Mitchell & Jolley (2017), conceptual framework refers to diagrammatic representation presumed association between variables under investigations (Saunders, Lewis & Thornhill, 2016). Figure 1 presents and interprets the hypothesized relationship between process innovation (independent variable) and competitiveness (dependent variable). It also explored the effect of firm size on the relationship between process innovation and competitiveness.

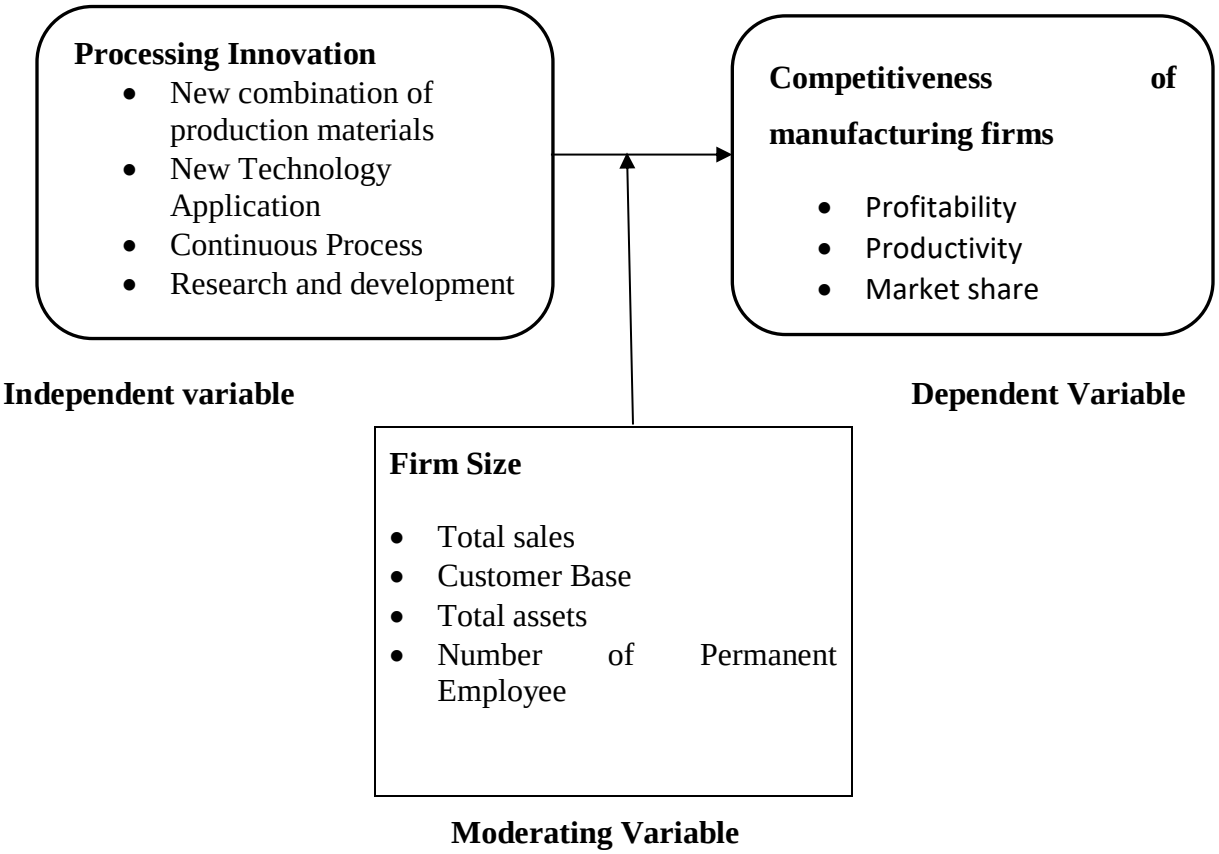


**Figure 1: Conceptual Framework**

## EMPIRICAL REVIEW

A new process is intended to reduce unit costs of production or delivery, increase quality, or create or deliver new or significantly improved products (OECD, 2005). According to Najib (2013), the new process is especially important for firms in high-competition industries because it increases productivity. Process innovation has a direct and immediate impact on manufacturing firms' productivity performance and organizational simplicity (Castillejo et al., 2013). Oke et al. (2013) reiterate that process innovation should be emphasized as a primary distinguishing characteristic in manufacturing enterprises. In their study of Finnish SMEs, Krajewsk (2010) showed a positive correlation between process innovation and firm performance. Sidek and Rosli (2013) conducted research on the "impact of innovation on the performance of small and medium manufacturing enterprises in Malaysia". According to the research findings, process innovation has a positive

impact on firm performance. The study recommended that SMEs use innovation to improve their performance. Sauli (2014) conducted a study in Finland and found that innovative skills had a slight influence on SMEs' performance. Rosli (2013) found that being innovative in procedures had a positive impact on the performance of SMEs in Malaysia. In Kenya, a study by Ngugi and Karanja (2013) found that there was a relationship between innovation and performance. They agreed that innovative activities such as product, process, and marketing innovativeness increased SMEs' revenue.

## RESEARCH METHODOLOGY

The study used a mixed method research design. The study population consisted of 201 licensed food and beverage manufacturing firms in Nairobi City County. The study sample was obtained using both stratified and random sampling techniques. The unit of analysis consisted of 201 food and beverage manufacturing firms, with owner/managers serving as respondents. Data was gathered using questionnaires. Quantitative data was analyzed quantitatively using SPSS software, while qualitative data was analyzed through content analysis. Qualitative data was divided into categories, which were then coded uniquely and assigned quantitative values in SPSS, allowing the software to generate descriptive statistics such as measures of central tendencies and inferential statistics. Diagnostic tests were conducted to ensure that all regression analysis assumptions were met. The study examined the research hypothesis regarding the impact of process innovation on the competitiveness of food and beverage manufacturing firms in Nairobi City County, Kenya. The ethical considerations included obtaining consent, maintaining confidentiality, and treating respondents with respect. These statistical methods provided a solid foundation for studying the relationship between marketing innovation and the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County, Kenya.

## RESEARCH FINDINGS AND DISCUSSIONS

This section presents and analyzes the findings from the study on process innovation and competitiveness among Food and Beverage Manufacturing Firms in Nairobi City County, Kenya. The analysis encompasses both descriptive and inferential statistics to examine the relationships between the variables under study. The descriptive statistics explore the extent of process

innovation deployment, firm size characteristics, and achieved competitiveness measures. The inferential statistics, including regression analysis and ANOVA, investigate the influence of process innovation on competitiveness and the moderating effect of firm size.

## Descriptive Statistics

The study sought the extent Food and Beverage Manufacturing Firms deployed process Innovations.

**Table 1: Descriptive Statistics for Process Innovation Measures**

| Process Innovation | 1 | 2 | 3 | 4 | 5 | Mean | Std Dev |
|---|---|---|---|---|---|---|---|
| Determining non value adding activities to improve efficiency in production processes | % | 2.6% | 10.4% | 51.0% | 35.9% | 4.2031 | .72746 |
| Reduction of variable cost components in production and processes, techniques, machinery and software | % | % | 18.8% | 53.1% | 28.1% | 4.0938 | .67998 |
| Increasing output quality in business processes | % | 2.6% | 12.5% | 37.0% | 47.9% | 4.3021 | .78760 |
| The company experience decreasing variable cost and/or increasing delivery speed in delivery related logistics processes. | % | % | 12.5% | 55.2% | 32.3% | 4.1979 | .64100 |
| The elimination of non-value adding activities in delivery related processes. | % | 3.1% | 17.2% | 35.4% | 44.3% | 4.2083 | .83656 |
| New methods of processing influences profitability | % | 2.1% | 11.5% | 42.7% | 43.8% | 4.2708 | .76547 |
| Improved production methodology increases sale volume | % | 2.6% | 13.5% | 44.8% | 39.1% | 4.2031 | .76944 |
| New improved processing methods helps to meet customer demand leading to improved sales | % | % | 7.8% | 54.7% | 37.5% | 4.2969 | .60572 |
| Use of technology leads to improved quality and increased market share | % | 1.2% | 13.4% | 35.4% | 50.0% | 4.3281 | .78710 |
| Improved maintenance systems /operations for processes reduces processing time/increased sale volume | 0% | 1.3% | 9.7% | 35.4% | 53.6% | 4.3698 | .84613 |
| New methods of processing influences profitability | % | 4.7% | 1.6% | 62.0% | 31.8% | 4.2083 | .69277 |
| Decreasing in switching costs of the company's products | % | % | 0% | 49.5% | 50.5% | 4.3594 | .72431 |
| Development of Technologically imitative products | % | 0% | 5.7% | 45.8% | 48.4% | 4.3490 | .70755 |
| Increase in creativity in design and producing products | % | % | 0% | 38.5% | 61.5% | 4.3437 | .70641 |
| The company has competent workforce | % | % | 16.7% | 40.6% | 42.7% | 4.2604 | .72711 |
| The addition of value adding activities in production | % | % | 3.1% | 52.1% | 44.8% | 4.4167 | .55422 |
| Overall | | | | | | 4.275713 | 0.722427 |

According to the study, process innovations significantly improve firm competitiveness in Nairobi City County's Food and Beverage firms. Respondents strongly agreed that process innovations aid in the identification and elimination of non-value-adding activities, thereby increasing production efficiency, lowering variable costs, and improving output quality. The findings revealed a mean agreement of 4.2031 for process innovation's role in identifying non-value-added activities. Furthermore, there was widespread agreement that process innovations had resulted in lower costs in production techniques, machinery, and software, with a mean of 4.0938, as well as higher output quality, with a mean of 4.3021. In addition, respondents agreed that process innovations improve delivery speed and reduce variable logistics costs, with a mean of 4.1979. New processing methods were found to improve profitability and sales volumes, as evidenced by mean scores of 4.2708 and 4.2031, respectively. Technology utilization was also cited for its role in improving product quality and increasing market share, with a mean agreement of 4.3281. The study discovered that innovations in maintenance systems and operations resulted in shorter processing times and higher sales volumes, with a mean of 4.3698. Overall, respondents agreed that process innovations, such as new processing methods and technology use, lead to higher product quality, lower switching costs, increased creativity, and a more competent workforce, boosting the competitiveness of Nairobi City County's Food and Beverage firms.

According to the study, having a competent workforce is a significant indicator of process innovation deployment in food and beverage firms in Nairobi City County. The majority of respondents agreed that process innovation, as demonstrated by a competent workforce, results in increased competitiveness. The addition of value-adding activities in production reinforces this, with the majority of respondents agreeing that these activities improve efficiency and competitiveness. The overall mean score of 4.275713 with a standard deviation of 0.722527 confirms that process innovation is widely used to increase sector competitiveness.

**Table 2: Descriptive Statistics for Firm Size**

| Variable | Obs(n) | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| Total Sales | 768 | 0.3234 | 0.1124 | 0.0036 | 0.9563 |
| Customer Base | 768 | 0.2926 | 0.4196 | 0.0254 | 0.6167 |
| Total Assets | 768 | 0. 1418 | 0.1704 | 0.0130 | 0.4769 |

Table 2 shows that sales increased by an average of 32.34% over the review period, based on 768 observations, with a standard deviation of 0.1124 and a range of 0.0036 to 0.9563. Similarly, Table 4.3 shows an average customer base increase of 29.26% over 768 observations, with a standard deviation of 0.4196. In addition, the asset base increased by an average of 14.18%, with a standard deviation of 0.1704, ranging from 1.30% to 47.69%. These findings are consistent with the International Trade Centre (2009) study, which indicates that SME competitiveness is evaluated through efficiency in cost, time, quality, and quantity. Descriptive statistics. Results for Competitiveness of Food and Beverage Manufacturing Firms.

**Competitiveness Achieved in Firms**

| Statement | 1 | 2 | 3 | 4 | 5 | Mean | Std Dev |
|---|---|---|---|---|---|---|---|
| Our company has increase sale growth in real terms | 2.1% | 0.5% | 8.3% | 45.3% | 43.8% | 4.3250 | .79213 |
| The company make quick response to costumer's demand | 1.0% | 27.6% | 15.6% | 22.9% | 32.8% | 3.5885 | .53325 |
| Our firm has reported continuous increased enterprise return on investment | 2.6% | 2.6% | 7.8% | 44.8% | 42.2% | 4.2135 | .89280 |
| There is increase low-cost production in the firm | 2.1% | 0% | 16.7% | 41.7% | 39.6% | 4.1667 | .85206 |
| There is growth in employment human resources | % | 2.5% | 14.7% | 54.2% | 28.6% | 4.0885 | .72896 |
| The firm offer unique food and beverages in the market | % | % | 14.1% | 53.6% | 32.3% | 4.1823 | .65770 |
| The firm offer quality food and beverages in the market | 2.5% | 2.7% | 12.5% | 47.4% | 34.9% | 4.0937 | .89884 |
| There is learning and strategic critical success capabilities to gain a competitive edge in the market | 0% | 0% | 5.7% | 53.1% | 41.1% | 4.3542 | .58746 |
| Overall | | | | | | 4.12655 | 0.7429 |

The study emphasized the importance of business innovation in increasing the competitiveness of Nairobi City County's Food and Beverage firms. Respondents generally agreed that business

innovation has resulted in a significant increase in sales growth (mean of 4.3250) and a rapid response to customer demands (mean of 3.5885). Moreover, innovations have resulted in steady increases in enterprise return on investment (mean of 4.2135) and lower production costs (mean of 4.1667). The implementation of innovative practices has also resulted in an increase in job opportunities (mean of 4.0885) and the availability of unique food and beverage products (mean of 4.1823). In addition, respondents agreed that food and beverage companies provide high-quality products (mean of 4.0937) and have developed learning and critical success capabilities necessary for gaining a competitive advantage (mean of 4.3542). Overall, the findings show that business innovation boosts competitiveness by improving efficiency, product differentiation, quality, and strategic capabilities. This is supported by research indicating that SMEs need to constantly innovate to remain competitive, diversify, and respond effectively to market changes.

**Inferential Statistics**

The objective for this study was to determine the influence of process innovation on the competitiveness of Food and Beverage Manufacturing Firms in Nairobi City County in Kenya. To achieve this objective; coefficient of determination (R2), Change in R2, analysis of variance (ANOVA) as well as model coefficients were generated.

**Table 3: Model Summary**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .793a | 0.629 | 0.627 | 0.138 |

The results in Table show a strong relationship between process innovation and competitiveness in food and beverage firms, with an $R^2$ value of 0.629. This means that 62.9% of the variance in competitiveness can be explained by process innovation. The adjusted $R^2$ value of 0.627 indicates that this model fits the data well, accounting for the number of predictors used. The standard error of the estimate is 0.138, which suggests that the model's predictions are relatively precise.

**Table 4: ANOVA Results**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 6.107 | 1 | 6.107 | 322.449 | .000b |
| Residual | 3.598 | 190 | 0.019 | | |
| Total | 9.705 | 191 | | | |

The ANOVA results further affirm the significance of process innovation in enhancing competitiveness. The regression sum of squares (6.107) and the mean square of 6.107 lead to an F-statistic of 322.449, with a p-value of 0.000, indicating that the model is statistically significant. This means that process innovation has a meaningful impact on the competitiveness of food and beverage firms, with a very low likelihood that the results are due to random chance.

**Table 5: Coefficients of the Model**

| | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | 1.413 | 0.165 | | 8.581 | 0.000 |
| Process Innovation | 0.676 | 0.038 | 0.793 | 17.957 | 0.000 |

Table 5 shows the model's coefficients, which include the constant (intercept) of 1.413 and the coefficient for process innovation of 0.676, with a standardized beta of 0.793. This suggests a strong positive correlation between process innovation and competitiveness. The t-value of 17.957 and p-value of 0.000 indicate that process innovation has a statistically significant effect on competitiveness. Essentially, for every unit increase in process innovation, competitiveness rises by 0.676 units, emphasizing the significance of this innovation type in enhancing competitive advantage. The findings suggest that process innovation is critical to improving the competitiveness of food and beverage companies. Because process innovation frequently focuses on optimizing production processes, lowering costs, improving product quality, and increasing efficiency, its direct impact on competitiveness is clear. Firms that adopt new technologies or improve their operational workflows are more likely to have lower production costs and shorter

time-to-market, giving them a competitive advantage in the industry. The high $R^2$ value highlights the importance of process innovation in driving competitiveness.

In the food and beverage industry, process innovations such as automation, improved supply chain management, and advanced manufacturing techniques can lead to better product consistency and lower costs. These advantages make businesses more appealing to customers by ensuring superior quality and dependability. Furthermore, process innovations enable businesses to adapt to changing market conditions, such as shifts in consumer preferences or supply chain disruptions, thereby increasing their long-term competitiveness. These findings are consistent with previous research that has highlighted the importance of process innovation in maintaining a competitive advantage (Tushman & O'Reilly, 2020). The process innovation variable's strong statistical significance ($p = 0.000$) emphasizes the importance for food and beverage companies to prioritize investment in process improvements. These improvements can take the form of new production technologies, waste reduction techniques, and operational efficiencies. The findings are consistent with a growing body of literature indicating that process innovations are critical for firms seeking to maintain or improve their competitive position in markets. Therefore, food and beverage firms should consider process innovation not only as a tool for operational improvement but also as a strategic approach to gaining a long-term competitive advantage in an increasingly dynamic market.

## CONCLUSION

The study examined the role of process innovations in increasing the competitiveness of food and beverage firms, with a focus on the moderating effect of firm size. The findings of this study demonstrate the profound impact that innovation can have on a firm's competitive position, demonstrating that process innovation is an important driver of competitiveness. Firm size plays a moderating role, indicating that larger firms are better positioned to effectively leverage these innovations, whereas smaller firms may face more challenges due to limited resources. Process innovation has also proven to be critical, as it helps improve operational efficiency, reduce costs, and streamline manufacturing processes. For businesses operating in a competitive market, such as food and beverage, the ability to produce goods efficiently while maintaining product quality is critical to remaining competitive. The study concludes that project team design has a positive and

significant impact on the performance of information technology-based projects in Kenyan commercial banks. The study found that problem-solving, task diversification, and feed provisions all have an impact on information technology project performance. This means that improving project team design (problem-solving, task diversification, and feed provisions) improves the performance of information technology-based projects in Kenyan commercial banks.

## RECOMMENDATIONS

Managers in the food and beverage industry should implement ongoing, comprehensive strategies to foster innovation across product development, marketing, manufacturing processes, and organizational structures. Cultivating an innovative culture requires leadership commitment, employee empowerment, and open communication. Allocating sufficient resources for R&D, hiring specialized talent, and utilizing customer feedback to guide innovation are all critical steps. Setting clear objectives, tracking progress with KPIs, and remaining flexible are all essential components of effective implementation. Collaborating with external partners and implementing agile project management methods can help to boost innovation efforts. The continuous monitoring and evaluation of innovation strategies will ensure long-term competitiveness. Policymakers should help SMEs in the food and beverage industry by offering financial incentives like tax breaks, grants, and low-interest loans to encourage R&D and innovation. Facilitating access to innovation hubs, incubators, and technological resources will assist smaller firms in developing their innovation capabilities. Tax incentives for R&D investments and public-private partnerships can help drive innovation. Investing in infrastructure to support innovation, such as research institutions and technology parks, as well as encouraging collaboration between the public, private, and academic sectors, will result in robust innovation ecosystems that boost the sector's overall competitiveness.

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