

Innovation Strategies and Firm Performance: Evidence from Kenyan Manufacturing Firms

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Abstract

This study investigates the correlation between innovation strategies and firm performance within manufacturing firms in Kenya, concentrating on four dimensions: product, process, organizational, and marketing innovation. The analysis utilizes firm-level survey data obtained via structured questionnaires and employs multiple regression techniques to assess the reported correlation between innovation activities and financial performance outcomes. The findings reveal that product innovation exhibited the most significant positive correlation with ROI, succeeded by process innovation, whereas marketing innovation also demonstrated a positive coefficient. Organizational innovation exhibited a positive correlation but lacked statistical significance in the presented model. These findings indicate that innovation is significant for firm performance, yet its importance varies across different dimensions. The article interprets the empirical model as a ROI-based specification, as ROI is the dependent variable presented in the regression output, despite the paper's questionnaire conceptualizing firm performance more comprehensively. The findings must be regarded as reported associations rather than causal effects due to the cross-sectional design, self-reported measures, potential common-method bias, possible reverse causality, and internal inconsistencies in certain aspects of the reported paper output.

Keywords

Innovation Strategies, Firm Performance, Product Innovation, Organisational Innovation, Marketing Innovation

1. Introduction

IN the last twenty years, the world of manufacturing has become more competitive because of new technologies, changing customer needs, and more interconnected global markets. Companies are always under pressure to make their products more unique and improve their efficiency. This means that innovation is no longer a strategic choice but a requirement for survival. This pressure is even stronger in developing economies like Kenya, where manufacturing helps create jobs and grow industries (Kenya National Bureau of Statistics (KNBS), 2022; Republic of Kenya, 2022; United Nations Industrial Development Organization (UNIDO), 2021). Innovation is universally acknowledged as a fundamental catalyst for organisational performance and sustained competitiveness. Theoretical and empirical literature consistently demonstrates that firms investing in innovation generally attain enhanced productivity and superior market outcomes (Barney, 1991; Teece et al., 1997; Prajogo and Ahmed, 2006). From a resource-based and dynamic capabilities viewpoint, innovation allows firms to reorganise internal resources and adapt to evolving market conditions (Barney, 1991; Teece et al., 1997). In Kenya, the manufacturing sector encounters structural challenges such as low productivity, restricted technological capabilities, and escalating competition from imports. Policy reports and empirical studies reveal that numerous firms encounter operational inefficiencies and inadequate innovation systems, which hinder performance enhancements (Wanjiku and Omondi, 2020; Muthoni and Otieno, 2021; Ouma, 2022; Kamau and Maina, 2020). These challenges underscore the necessity for systematic innovation strategies that transcend incremental modifications. Innovation is a multifaceted concept that includes product, process, organisational, and marketing innovation. The Oslo Manual offers a recognised framework for classifying these dimensions, highlighting their unique yet complementary functions in improving firm performance (OECD/Eurostat, 2018). Empirical studies corroborate that various forms of innovation yield distinct impacts on outcomes such as efficiency, competitiveness, and market expansion (Otieno and Odhiambo, 2020; Gunday et al., 2011).

Notwithstanding the recognised significance of innovation, evidence indicates that a substantial number of manufacturing firms in developing economies function without formal innovation strategies. This constrains their competitive efficacy in both domestic and international markets and diminishes their ability to adapt to technological advancements. Current empirical studies on the innovation–performance relationship predominantly focus on developed economies, resulting in a deficiency in comprehension regarding how these dynamics function in contexts like Kenya (Kimani and Kariuki, 2021; Mutua, 2020).

This study addresses this gap by examining the association of product, process, organisational, and marketing innovation on the performance of manufacturing firms in Kenya. This study offers a comprehensive understanding of how innovation strategies impact performance outcomes by examining various dimensions of innovation within the context of a developing economy.

The subsequent sections of the paper are organised as follows. Section 2 examines the theoretical underpinnings and previous empirical findings regarding innovation and firm performance, focusing on the four dimensions of innovation. Section 3 delineates the research design, data collection methods, variable measurement techniques, and estimation approach employed in the study. Section 4 presents the empirical results and offers a comprehensive analysis of the findings in relation to the existing literature and the Kenyan context. Section 5 encapsulates the principal conclusions, delineates policy and managerial ramifications, and underscores limitations and avenues for future inquiry.

2. Theoretical and Literature Review

This section reviews the theoretical and empirical literature on innovation and firm performance, with a particular emphasis on the four dimensions of innovation investigated in this study. It begins by describing the key theoretical perspectives that explain how innovation contributes to competitive advantage, then defines the various types of innovation, and finally reviews empirical evidence with a focus on developing economy contexts. The section concludes by identifying specific gaps that motivated the research and led to the development of testable hypotheses.

2.1. Theoretical Foundations of Innovation and Firm Performance

The connection between innovation and firm performance is based on established theoretical frameworks, notably the Resource-Based View (RBV) and dynamic capabilities theory. The RBV posits that organisations attain enduring competitive advantage through the development and utilisation of valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). In this context, innovation signifies a strategic capability that allows firms to distinguish themselves and enhance performance outcomes. Nevertheless, the Resource-Based View (RBV) presumes relatively stable environments and inadequately elucidates how firms adjust to swift market fluctuations. The Dynamic Capabilities theory enhances this viewpoint by highlighting the organization's capacity to integrate, develop, and reorganise internal and external competencies in reaction to evolving environments (Teece et al., 1997). Innovation serves as a means by which companies consistently modify their processes, products, and organisational frameworks. In unstable and competitive markets, particularly in developing economies, the capacity for innovation is intrinsically linked to survival and expansion.

2.2. Conceptualization of Innovation

Innovation is a multi-dimensional construct rather than a singular concept. The Oslo Manual delineates a widely recognised framework that classifies innovation into four primary categories: product, process, organisational, and marketing innovation (OECD/Eurostat, 2018). Product innovation denotes the introduction of novel or substantially enhanced goods or services. Process innovation encom-

passes enhancements in production or delivery techniques that increase efficiency. Organisational innovation pertains to modifications in business practices, workplace structure, or external relationships, whereas marketing innovation emphasises novel strategies in product promotion, pricing, or market positioning.

These dimensions are conceptually separate yet frequently interconnected. For example, enhancements in processes may facilitate product innovation, whereas organisational modifications may enable both advancements. Considering innovation as a multifaceted concept facilitates a more refined comprehension of the ways various strategies impact organisational performance.

2.3. Empirical Evidence on Innovation and Firm Performance

Empirical research consistently indicates a positive correlation between innovation and firm performance, though the intensity and characteristics of this correlation differ across contexts. Preliminary research indicates that companies involved in innovation activities typically attain greater productivity, profitability, and market share (Prajogo and Ahmed, 2006; Gunday et al., 2011). Nonetheless, these conclusions predominantly rely on evidence from developed economies, where enterprises function within more organised innovation frameworks. In developing economies, the evidence is more ambiguous. Research indicates that innovation markedly enhances firm performance, especially when companies implement various forms of innovation concurrently (Kimani and Kariuki, 2021; Mutua, 2020). Some emphasise that constrained resources, inadequate institutional backing, and market limitations can diminish the efficacy of innovation strategies (Oloo and Atieno, 2022; Chacha and Okello, 2019). This indicates that the effect of innovation is contingent upon context and shaped by organisational competencies and external factors. Furthermore, research that dissects innovation into its constituent elements demonstrates that various forms of innovation yield disparate effects on performance outcomes. Marketing innovation is frequently linked to enhanced market access and competitiveness, whereas process innovation improves operational efficiency. Product innovation typically impacts revenue growth, while organisational innovation facilitates internal coordination and long-term adaptability (Otieno and Odhiambo, 2020; Gunday et al., 2011).

2.4. Research Gap and Hypotheses Development

The reviewed literature leads to three broad conclusions. First, innovation is generally associated with improved firm outcomes, but the strength of that relationship varies across innovation types and across contexts (Prajogo and Ahmed, 2006; Gunday et al., 2011). Second, evidence from developing economies suggests that innovation does not operate uniformly, since firm capabilities, institutional support, and market conditions influence whether innovation translates into stronger performance (Kimani and Kariuki, 2021). Third, studies that separate innovation into product, process, organizational, and marketing dimensions suggest that these dimensions do not contribute equally to firm outcomes, yet the

comparative importance of each dimension remains unsettled (Otieno and Odhiambo, 2020).

Despite these insights, important gaps remain. Much of the literature examines innovation either as a single aggregate construct or as isolated dimensions, which limits the ability to compare how different innovation strategies relate to firm performance within the same empirical setting. In addition, a large share of the evidence is drawn from developed economies, while studies from Sub-Saharan Africa remain relatively limited and often do not provide an integrated assessment of the four major innovation dimensions (Kimani and Kariuki, 2021; Mutua, 2020). In the Kenyan context specifically, existing studies acknowledge the importance of innovation for manufacturing firms, but there is still insufficient evidence on the relative performance implications of product, process, organizational, and marketing innovation when examined together in one model.

This study responds to that gap by examining the four dimensions of innovation simultaneously in a Kenyan manufacturing context. Rather than treating innovation as a single undifferentiated capability, the study tests whether each innovation dimension is positively associated with firm performance and allows comparison of their relative contributions within the same empirical framework. On that basis, the following hypotheses are proposed:

H1: Product innovation is positively associated with firm performance.

H2: Process innovation is positively associated with firm performance.

H3: Organizational innovation is positively associated with firm performance.

H4: Marketing innovation is positively associated with firm performance.

2.5. Conceptual Framework

The conceptual framework guiding this study positions the four dimensions of innovation (product, process, organizational, and marketing innovation) as independent variables influencing firm performance as the dependent variable. **Figure 1**, the model assumes that each innovation dimension exerts a distinct direct relationship with firm performance competitiveness.

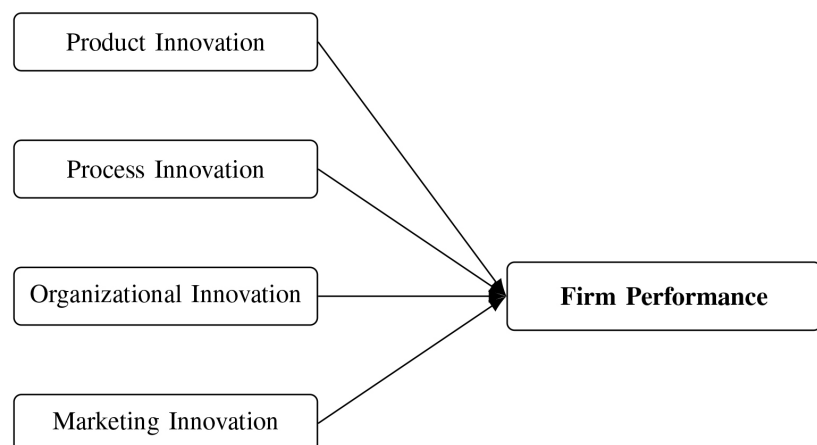


Figure 1. Conceptual framework of the study.

Figure 1 presents the direct relationships examined in this study. Product innovation, process innovation, organizational innovation, and marketing innovation are specified as the core independent variables, while firm performance is treated as the dependent variable. Modeling the four innovation dimensions separately, rather than collapsing them into a single composite innovation index, makes it possible to compare their relative contributions and determine which dimension has the strongest association with firm performance in the Kenyan manufacturing context.

This framework provides the basis for the empirical model tested in the methodology section.

3. Methodology

This paper draws on the quantitative survey component of the broader paper design to examine how product, process, organizational, and marketing innovation are associated with firm performance among manufacturing firms in Kenya. The analysis relies on cross-sectional firm-level survey data and regression-based estimation to assess the individual and comparative relationships between the four innovation dimensions and performance outcomes. In doing so, the methodology follows a structure commonly used in empirical innovation studies based on questionnaire data and multivariate analysis (Kiveu et al., 2019; Karabulut, 2015). The section therefore explains the research design, sampling procedure, data collection process, variable measurement, and statistical techniques used in the study, while also noting the main reliability, validity, and ethical considerations relevant to the use of self-reported firm-level data.

3.1. Research Design

The overarching paper utilized a mixed-methods approach, incorporating both survey and interview data; however, this paper concentrates on the quantitative aspect, as the primary aim is to evaluate the proposed correlations between innovation strategies and firm performance through firm-level survey data. In line with this goal, the paper uses a quantitative, cross-sectional survey design (Creswell and Plano Clark, 2018; Creswell, 2014). This approach was suitable as the study aimed to quantify the relationships between distinctly defined innovation variables and firm performance through standardized responses and statistical analysis. The cross-sectional design entailed gathering data from manufacturing companies at a specific moment. It is good for finding patterns of association, but it doesn't help with strong causal inference.

3.2. Target Population and Sampling

The target population consisted of registered manufacturing companies operating in Kenya. The paper delineates the sector as comprising industries such as food and beverage, textiles and apparel, chemicals, and machinery, noting that the country had approximately 6000 registered manufacturing firms (Kenya National

Bureau of Statistics (KNBS), 2022; Republic of Kenya, 2022). The firm served as the unit of analysis, with data gathered from respondents anticipated to possess adequate knowledge of the firm's innovation practices and performance. A purposive sampling method was employed to create an initial sample of 500 manufacturing companies (Etikan et al., 2016). The sampling frame was constructed from registered manufacturing firms identified in official and sectoral sources, aiming to encompass key subsectors including food and beverage, textiles and apparel, chemicals, and machinery. Questionnaires were administered to informed managerial or supervisory individuals, including general managers, operations managers, production managers, or comparable respondents responsible for overseeing firm operations and performance. The document delineates three primary selection criteria: the firm must be registered and functioning within the Kenyan manufacturing sector, must have been operational for a minimum of five years, and must exhibit some form of innovative activity. The final criterion enhanced relevance to the innovation-centric research question, yet it may have also constrained variation in the explanatory variables by diminishing the representation of distinctly non-innovative firms. The results should be interpreted as relationships within an already innovation-active segment of Kenyan manufacturing, rather than across the entire population of firms. The original target sample included 500 firms, but the final dataset for the empirical analysis contained 350 valid responses, yielding an approximate response rate of 70%. This sample constituted the foundation of the quantitative analysis.

3.3. Data Collection Procedure

Primary data for the quantitative component were obtained through a structured questionnaire distributed to the selected manufacturing firms (Kiveu et al., 2019; Creswell, 2014). The instrument was developed to collect data on product, process, organizational, and marketing innovation, in addition to firm performance metrics. It also gathered pertinent background information regarding firm characteristics.

The questionnaire method was suitable, as it facilitated the acquisition of standardized data from a considerable number of firms. Respondents were chosen based on their familiarity with firm operations, strategic initiatives, and performance results, indicating that responses were anticipated from informed managerial or supervisory personnel rather than unknowledgeable staff. This enhanced response quality, although the utilization of self-reported firm-level data still introduces the potential for response bias. The overarching paper includes interviews and other qualitative inputs; however, the analysis presented in this paper relies solely on survey data.

3.4. Measurement of Variables

The overarching paper defined firm performance as a multidimensional construct, utilizing indicators such as profitability, sales growth, market share, and

return on investment. Nonetheless, the regression output included in the article draft utilizes ROI as the sole reported dependent variable. This paper thus regards the empirical analysis as a financial performance specification based on ROI, while recognizing that this is more limited than the broader concept encompassed in the questionnaire. The independent variables consisted of the four dimensions of innovation strategy: product innovation, process innovation, organizational innovation, and marketing innovation. Product innovation encompasses the launch of new or substantially enhanced products. Process innovation indicated enhancements in production or delivery techniques aimed at increasing efficiency. Organizational innovation pertains to modifications in organizational structures, managerial practices, or workplace systems, whereas marketing innovation encompasses novel marketing techniques, promotional strategies, and market positioning approaches. The measures were derived from the questionnaire utilized in the paper and corresponded with the Oslo Manual classification of innovation types (OECD/Eurostat, 2018). The questionnaire employed multi-item metrics for the dimensions of innovation and the overarching performance construct, while the article-level analysis is based on the composite variables detailed in the paper. This article is an extraction from the approved paper, not a reconstruction from the raw dataset and complete appendix; therefore, it summarizes the construct definitions and reported composites without reproducing the entire item inventory. **Table 1** indicates that the study designates ROI as the dependent variable in the presented regression model, with product, process, organizational, and marketing innovation serving as the primary explanatory variables.

Table 1. Measurement of variables.

Variable	Role in Model	Operational Definition	Indicative Measures
Firm Performance	Dependent variable	Overall performance outcomes reported at the firm level	Profitability, sales growth, market share, return on investment
Product Innovation	Independent variable	Introduction of new or significantly improved products	New products, improved product features, product modifications
Process Innovation	Independent variable	Improvements in production or delivery methods aimed at enhancing efficiency	Production improvements, delivery improvements, efficiency gains
Organizational Innovation	Independent variable	Changes in organizational structures, managerial systems, or workplace practices	New managerial practices, internal systems, structural changes
Marketing Innovation	Independent variable	Introduction of new marketing methods related to promotion, pricing, packaging, or market positioning	New promotional methods, packaging changes, pricing strategies, market positioning

3.5. Data Analysis Techniques

The quantitative data were analyzed using SPSS (IBM Corp, 2020). Consistent with the paper structure, the analysis proceeded in three stages. First, descriptive statistics were used to summarize respondent and firm characteristics and to provide an overview of the main study variables. Second, correlation analysis was used to assess the direction and strength of the bivariate relationships among the variables. Third, multiple regression analysis was used to estimate the relationship between innovation strategies and firm performance (Kiveu et al., 2019). Prior to regression estimation, standard diagnostic checks were considered for the underlying assumptions of the model, including linearity, normality, homoscedasticity, and multicollinearity, in line with common practice in survey-based innovation studies. In the regression model, firm performance was specified as the dependent variable, while product, process, organizational, and marketing innovation were entered as explanatory variables. This approach made it possible to assess whether each innovation dimension was positively associated with firm performance while holding the others constant. It also allowed comparison of the relative strength of the four innovation dimensions within a single empirical model. As specified in Equation (1), firm performance is modeled as a function of the four innovation dimensions.

$$FP_i = \beta_0 + \beta_1 PI_i + \beta_2 PrI_i + \beta_3 OI_i + \beta_4 MI_i + \varepsilon_i \quad (1)$$

where FP_i denotes firm performance for firm i , β_0 is the intercept term, PI_i denotes product innovation, PrI_i denotes process innovation, OI_i denotes organizational innovation, MI_i denotes marketing innovation, β_1 to β_4 are the corresponding coefficients, and ε_i is the error term. Due to the cross-sectional nature of the data and the reliance on self-reported metrics for key constructs, the analysis is understood in associational rather than causal terms. The results indicate a correlation between innovation strategies and enhanced firm performance but do not establish a definitive causal relationship for performance improvements.

3.6. Ethical Considerations

The study observed standard research ethics in the collection and handling of data. Participation was voluntary, and respondents were assured that the information provided would be treated confidentially and used strictly for academic purposes. No firm-specific information was disclosed in the reporting of results, and the analysis was presented in aggregate form to protect respondent anonymity.

4. Results and Discussion

This section presents the empirical findings regarding the correlation between innovation strategies and firm performance within manufacturing firms in Kenya. The document commences with a succinct summary of the obtained sample, followed by an exposition of descriptive statistics, correlation patterns, and regres-

sion outcomes. The discourse analyzes these findings concerning the study hypotheses and existing literature, while also highlighting aspects where the paper results necessitate careful interpretation.

4.1. Overview of Data Collection

The quantitative analysis is based on 350 valid responses from the targeted sample of manufacturing firms, which is about 70% of the total number of responses. The survey data collected information about the firms' characteristics, performance metrics, and the level of innovation in their products, processes, organizations, and marketing that they used. The attained response level constituted an adequate foundation for both descriptive and inferential analysis.

4.2. Descriptive Statistics

Descriptive statistics were used to summarize the achieved sample and the distribution of the main study variables. As shown in **Table 2**, the study reports summary statistics for firm size, annual revenue, ROI, and the four innovation dimensions. **Figure 2** and **Figure 3** complement these statistics by providing visual summaries of the innovation measures and the performance-related indicator retained in the descriptive analysis.

Table 2. Summary of key descriptive statistics.

Variable	Mean	Standard Deviation	Minimum	Maximum
Number of Employees	75	58.2	5	450
Annual Revenue (USD)	1,200,000	800,000	30,000	5,000,000
ROI (%)	12.5	3.7	5	20
Product Innovation	2.3	1.1	0	5
Process Innovation	1.7	0.8	0	4
Organizational Innovation	1.5	0.9	0	4
Marketing Innovation	0.9	0.5	0	2

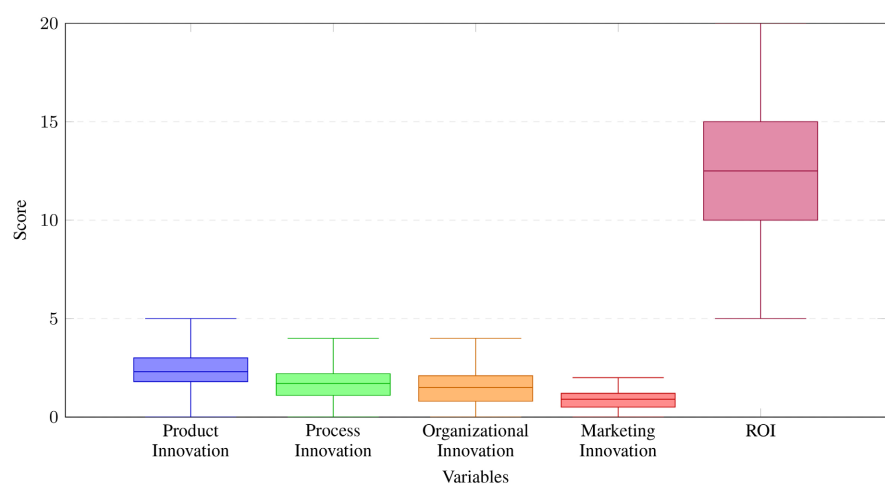


Figure 2. Distribution of innovation dimensions and ROI.

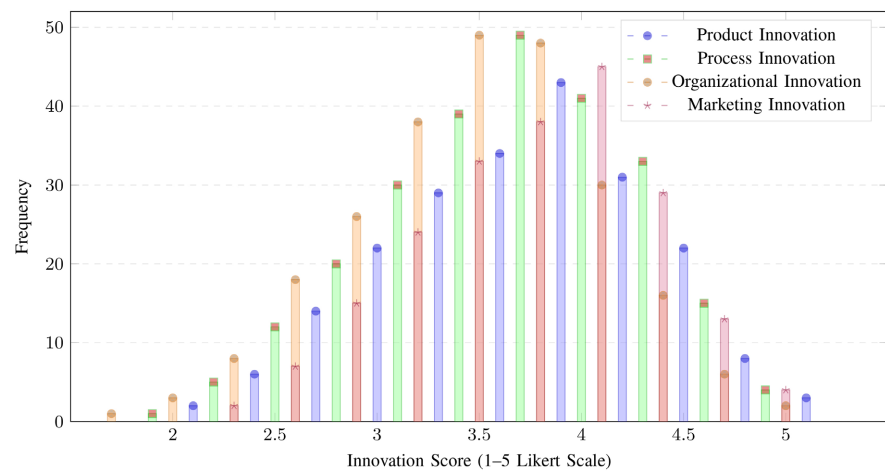


Figure 3. Distribution of innovation strategy scores.

Table 2 illustrates significant variability in the size and financial scale of the responding firms. The typical firm employed 75 workers; however, the significant disparity between the minimum and maximum values suggests substantial heterogeneity among the sampled firms. The average annual revenue was USD 1.2 million, and the mean ROI was 12.5%. Within the dimensions of innovation, product innovation achieved the highest average score, succeeded by process and organizational innovation, whereas marketing innovation exhibited the lowest average level. **Figure 2** enhances these statistics by illustrating the distribution, central tendency, and anomalous observations across the innovation dimensions and the performance-related indicator. **Figure 3** offers an alternative perspective on the distribution of innovation scores, indicating that the reported innovation levels were predominantly clustered around the mid-range rather than uniformly distributed across all response options.

Collectively, these descriptive patterns suggest that innovation practices were inconsistently reported among the sampled firms. Specifically, product-related innovation seems to have been prioritized over other dimensions of innovation, aligning with the perspective that manufacturing firms frequently emphasize visible product differentiation in response to competitive pressures.

4.3. Correlation Analysis

Correlation analysis was used to examine the bivariate relationships between the innovation dimensions and firm performance. The paper indicates that product innovation had the strongest reported positive correlation with ROI, while process innovation also showed a positive moderate relationship. Organizational and marketing innovation were likewise described as positively related to ROI, although more weakly than product and process innovation.

These patterns provide preliminary evidence that higher reported levels of innovation tend to be associated with stronger financial outcomes. However, bivariate correlations do not show whether each innovation dimension retains an independent relationship with firm performance once the others are considered

jointly. For that reason, the study proceeded to multiple regression analysis.

4.4. Regression Results

The paper employed multiple linear regression to assess the individual association between each innovation component and financial performance, with ROI as the dependent variable. **Table 3** reports the regression coefficients presented in the paper, while **Figure 4** provides a visual summary of the standardized coefficients associated with the innovation dimensions.

Table 3. Regression analysis summary.

Variable	Coefficient	Standard Error	t-value	p-value
Constant	5.12	1.15	4.45	<0.0001
Product Innovation	2.15	0.40	5.38	<0.0001
Process Innovation	1.10	0.25	4.40	<0.0001
Organizational Innovation	0.25	0.30	0.83	0.408
Marketing Innovation	0.55	0.20	2.75	0.006

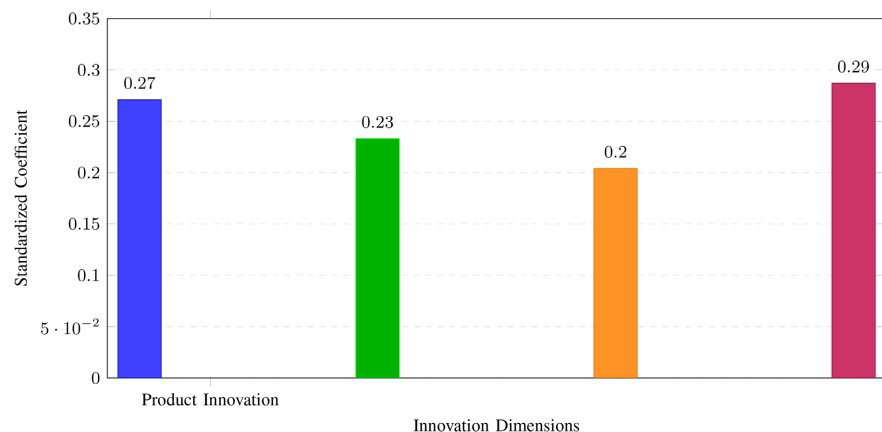


Figure 4. Standardized coefficients for innovation dimensions and firm performance.

Table 3 shows that product innovation had the biggest positive and statistically significant coefficient of all the reported predictors. Process innovation had a positive and significant effect on ROI, and marketing innovation had the same effect, but with a smaller coefficient. On the other hand, the reported regression results did not show a statistically significant link between organizational innovation and ROI. **Figure 4** enhances **Table 3** by illustrating the comparative magnitude of the standardized coefficients across the four aspects of innovation. The figure facilitates visual comparison; nevertheless, it must be analyzed in conjunction with the regression table, as statistical significance and coefficient magnitude are determined by the regression output, not alone by the chart. The regression results indicate that the most significant financial correlations were associated with product innovation, followed by process innovation, while marketing innovation also had

a beneficial impact. Organizational innovation, albeit favorable, could not demonstrate statistical significance in the presented regression model. A single caution is warranted in this context. The paper presents an OLS summary including a markedly low R-squared and a non-significant model-level F-statistic, which does not quite correspond with the comprehensive coefficient table provided earlier. The internal discrepancy necessitates that the regression data in the current paper be read as the pattern presented in the paper, rather than as a fully reconciled inferential result. Consequently, robust assertions on overall model fit or validated statistical accuracy would be unsuitable in the current iteration.

4.5. Discussion of Findings

The findings indicate a varied relationship between innovation dimensions and firm performance, rather than a consistent effect across all types of innovation. The robust positive correlation between product innovation and ROI indicates that the launch of new or enhanced products may be the most direct means by which manufacturing firms in Kenya improve financial performance. This interpretation aligns with previous research that associates product innovation with market revitalization, revenue growth, and competitive differentiation (Otieno and Odhiambo, 2020; Prajogo and Ahmed, 2006; Gunday et al., 2011).

The positive and significant correlation between process innovation and ROI suggests that companies can enhance performance by optimizing production and delivery techniques. Second, the positive and significant association between process innovation and ROI indicates that firms may also improve performance by refining production and delivery methods. This finding aligns with the argument that process innovation contributes to operational efficiency and cost reduction, which can ultimately improve financial returns (Gunday et al., 2011).

Third, marketing innovation also appears to matter, although its reported effect is smaller than that of product and process innovation. This suggests that changes in promotion, pricing, packaging, or market positioning may help firms improve market reach and sales outcomes, even if these effects are not as strong as those associated with product-oriented innovation (Karabulut, 2015). The non-significant result for organizational innovation is noteworthy because it differs from the stronger expectations suggested by part of the literature review. One possible interpretation is that organizational changes may contribute more indirectly to performance by enabling other innovation activities rather than generating an immediate direct effect on ROI. Another possibility is that the measurement of organizational innovation in the paper captured broad internal changes whose financial implications take longer to materialize. This interpretation is still broadly consistent with studies that view organizational innovation as an enabling capability rather than a purely immediate financial driver (Teece et al., 1997; Camisón and Villar-López, 2014; Njoroge et al., 2020).

Overall, the results support the argument that innovation matters for firm performance, but they also indicate that not all innovation dimensions contribute

equally. In the Kenyan manufacturing context represented by the paper data, product and process innovation appear to be the most consequential dimensions for financial performance, while marketing innovation plays a supportive role and organizational innovation shows a weaker immediate relationship.

4.6. Implications and Limitations of the Findings

From a managerial perspective, the results imply that manufacturing firms seeking immediate financial improvements may benefit most from prioritizing product and process innovation, while still treating marketing and organizational innovation as complementary rather than irrelevant. For policymakers, the findings reinforce the value of supporting innovation systems that improve firms' capacity to develop products, upgrade processes, and commercialize innovations effectively.

At the same time, the interpretation of the findings must remain cautious. The study relies on cross-sectional and self-reported data, which limits causal inference. In addition, the internal inconsistency between parts of the reported paper regression output indicates that the final paper should avoid overstating the precision of the empirical results. The evidence is still useful for identifying broad patterns, but it should be framed carefully as reported associations rather than definitive causal estimates.

5. Conclusion

This study examined the relationship between innovation strategies and firm performance among manufacturing firms in Kenya, with specific attention to product, process, organizational, and marketing innovation. The findings suggest that innovation matters for firm performance, but that its relevance is not uniform across dimensions. Based on the reported regression results, product innovation showed the strongest positive association with ROI, followed by process innovation, while marketing innovation was also positive and statistically significant. Organizational innovation, although positive in sign, did not show statistical significance in the reported model.

The paper contributes to the literature by examining four dimensions of innovation simultaneously rather than treating innovation as a single aggregate construct and by providing context-specific evidence from Kenyan manufacturing firms. Practically, the findings suggest that managers seeking more immediate financial gains may benefit most from prioritizing product and process innovation while treating marketing innovation as a supporting commercial strategy. Organizational innovation may still matter, but its effects may be more indirect or slower to materialize.

The findings should be interpreted cautiously. The study relies on cross-sectional, self-reported survey data, which limits causal inference, and the paper outputs contain some internal inconsistency between the detailed coefficient table and the model-level OLS summary. Even so, the paper supports the broader argu-

ment that a differentiated understanding of innovation strategy is necessary for both research and practice.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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